

All Questions Key

Question Number: 1

ID Number: 1

Given the following conditions:

- An intrusion of seaweed has resulted in a trip of both Seawater Pumps.
- The plant was manually scrambled.
- Condenser vacuum is 10 inches Hg.
- HPCI is currently tagged out.
- Reactor pressure is currently 1030 psig and reactor water level is -50 inches and stable.

Select from the list below those system(s) that are currently available to control reactor pressure in accordance with plant procedures.

- 1- SRVs
- 2- Bypass Valves
- 3- Main Steam Line Drains
- 4- RCIC in Pressure Control Mode

- a. 1 only
- b. 1 and 2 only
- c. 1 and 4 only
- d. 1, 2, 3, and 4

All Questions Key

Details for Question Number: 1

ID Number: 1

Answer: a

References:

2.1.6 rev 49 pg 8 of 13
EOP-01

Provided References:

EOP-01

Explanation:

MSIVs are closed per 2.1.6 therefore bypass valves are unavailable
RCIC initiation signal (-46") in effect, therefore RCIC cannot be placed in pressure control mode.
Group I isolation (-46") in effect, therefore Main Steam Line Drains interlocked closed.

Comments:

K/A: 295002K103

Question Source: New

Importance: RO 3.6 SRO 3.8

Cognitive Level: Comprehension-Analysis

RO Tier: 1 **RO Group:** 2

Difficulty Level: 3.5

SRO Tier: 1 **SRO Group:** 2

Exam Level: BOTH

10CFR Ref: 41.7

Objective: O-RO-03-04-03 EO 15

All Questions Key

Question Number: 2

ID Number: 2

The plant is operating at 100% power when a loss of bus D-16 occurs. All other systems are aligned normally. Five minutes later the bus D-16 is restored.

The expected response of 125 VDC panel D-6 upon the loss of D-16 will be to _____ (1) _____ and upon restoration of D-16 to _____ (2) _____.

- a. (1) immediately transfer to D-17
(2) transfer back to D-16 after a time delay
- b. (1) transfer to D-17 after a time delay
(2) immediately transfer back to D-16
- c. (1) immediately transfer to D-17
(2) immediately transfer back to D-16
- d. (1) immediately transfer to D-17
(2) remain on D-17 indefinitely unless manual action is taken to transfer back to D-16.

All Questions Key

Details for Question Number: 2

ID Number: 2

Answer: a

References:

2.2.14 Rev 43, page 8 of 201

Provided References:

Explanation:

Transfer to D-17 will be immediate. Transfer back to D-16 will be after a time delay (1minute)

Comments:

Used on April 2000 SRO Exam

K/A:	295004K102	Question Source:	Bank
Importance:	RO 3.2 SRO 3.4	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-01-02, EO 3e

All Questions Key

Question Number: 3

ID Number: 3

Given the following conditions:

- A pressure transient occurred with steam dome pressure peaking at 1345 psig.
- Pressure was subsequently reduced and is currently 920 psig.

From the list below, select the actions REQUIRED by Technical Specifications.

Action 1-Notify the NRC within 1 hour.

Action 2-Insert all insertable control rods within 2 hours.

Action 3-Place the plant in cold shutdown within 24 hours while maintaining cooldown rate below 100 degrees F/hour.

Action 4-Place the plant in cold shutdown within 24 hours disregarding any cooldown rate limitations.

Action 5-Obtain NRC approval prior to resuming critical operation.

- a. Actions 1, 3, and 5 only
- b. Actions 2, 3, and 5 only
- c. Actions 1, 2, and 5 only
- d. Actions 1, 2, and 4 only

All Questions Key

Details for Question Number: 3

ID Number: 3

Answer: c

References:

TS Section 2.2

Provided References:

Explanation:

Actions per TS are to Notify NRC within 1 hour, insert all insertable rods within 2 hours, restore compliance with safety limits within 2 hours, stay shutdown until NRC authorizes restart. While the candidates will have TS available, they will not have the Safety Limit portion available.

Comments:

K/A:	295007A201	Question Source:	New
Importance:	RO 4.1 SRO 4.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	1	RO Group:	1
SRO Tier:	1	Difficulty Level:	3.5
10CFR Ref:	43.2	Exam Level:	SRO
		Objective:	O-RO-06-01-01 EO-8

All Questions Key

Question Number: 4

ID Number: 4

Prior to approving an application for power uprate, a test is required that will demonstrate the ability of the containment to withstand drywell temperatures beyond what is currently described in the FSAR.

The proper controls for performing such a test would be in the form of a (an):

- a. surveillance procedure.
- b. temporary procedure.
- c. special test procedure.
- d. abnormal procedure.

All Questions Key

Details for Question Number: 4

ID Number: 4

Answer: c

References:

NOP 98A1, Rev 7, page page 16 of 66

Provided References:

Explanation:

Per NOP 98A1 this would be a Special Procedure.

Comments:

Used on November 2000 NRC exam question number 28

K/A:	2950122207	Question Source:	Bank
Importance:	RO 2.0 SRO 3.2	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 2	Exam Level:	SRO
10CFR Ref:	43.5	Objective:	O-RO-06-06-01 EO 2.b

All Questions Key

Question Number: 5

ID Number: 5

Given the following conditions:

- The control room is abandoned due to a fire.
- A leak from the RPV subsequently occurs.
- Due to a degraded component, RCIC turbine speed cannot be raised above 1700 RPM.
- RCIC is injecting at a reduced flow rate but is the only method available for maintaining adequate core cooling.

Under these conditions:

- a. RCIC must be tripped to prevent water hammer in the exhaust line of RCIC.
- b. RCIC must be tripped to prevent damage to the turbine due to insufficient lube oil flow.
- c. RCIC may be kept operating but water hammer in the exhaust line of RCIC may occur.
- d. RCIC may be kept operating but damage to the turbine due to insufficient lube oil flow may occur.

All Questions Key

Details for Question Number: 5

ID Number: 5

Answer: c

References:

2.4.143 Appendix B, sheet 4 of 7, Rev 25

Provided References:

Explanation:

Per 2.4.143, the minimum normal speed is 2000 RPM. However, it does allow going below 2000 if needed for adequate core cooling.

Comments:

In order to answer this question the candidate must use info on minimum speed, when that limit may be waived, and the basis for the minimum speed.

K/A:	295016A202	Question Source:	New
Importance:	RO 4.2 SRO 4.3	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 1	Exam Level:	SRO
10CFR Ref:	43.5	Objective:	None listed

All Questions Key

Question Number: 6

ID Number: 6

Given the following conditions:

- An error by an I&C Technician resulted in a spurious Group I isolation signal which cannot be reset.
- As a result of the pressure spike, a break occurs in the Recirculation system piping.
- While executing EOP-03, you determine that torus bottom pressure is approaching but has not yet reached the Pressure Suppression Pressure (PSP) Curve.

Under these conditions, Emergency Depressurization:

- a. is NOT allowed until the PSP curve limits are exceeded.
- b. should be anticipated by depressurizing using the bypass valves.
- c. is required when you make the determination that the PSP limits will be exceeded.
- d. is NOT required when you determine that the PSP limits will be exceeded provided you believe you will be able to restore parameters within the PSP within 10 minutes.

All Questions Key

Details for Question Number: 6

ID Number: 6

Answer: c

References:

EOP-03
5.3.35, page 11 of 104, Rev 2

Provided References:

EOP-03

Explanation:

Alt Depress is required when you cannot maintain in the safe region of the PSP. The parameter does not have to exceed the limit prior to taking the action. Once you determine that the parameter will be exceeded, the action (Emerg Depress) is required without regard to whether you can restore the parameter. Bypass valves will be unavailable due to closure of MSIVs on Group I and no direction to bypass interlocks.

Comments:

K/A:	2950202401	Question Source:	New
Importance:	RO 4.3 SRO 4.6	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	4.0
SRO Tier:	1 SRO Group: 2	Exam Level:	SRO
10CFR Ref:	43.5	Objective:	O-RO-03-04-02 EO-14

All Questions Key

Question Number: 7

ID Number: 7

Given the following conditions:

- The plant has shutdown to perform maintenance on the Group VI isolation circuitry.
- Shutdown cooling is in service with reactor water temperature at 140 degrees F.
- The MO-1201-2 and MO-1201-5 valves are open with their auto closure capabilities disabled.
- Both drywell personnel airlock doors are opened with interlocks defeated.
- A loss of shutdown cooling occurs and the RPV begins to heat up.
- One drywell personnel airlock door is then closed.
- The operator then closes the MO-1201-2 valve using the C904 control switch.

When primary temperature exceeds 212 degrees F, a violation of Technical Specifications:

- a. has not occurred since Primary Containment integrity has been met.
- b. has not occurred due to Primary Containment integrity not being required.
- c. has occurred only because no valves in the RWCU suction line have been disabled.
- d. has occurred due to one personnel airlock door being open AND no valves in the RWCU suction line being disabled.

All Questions Key

Details for Question Number: 7

ID Number: 7

Answer: c

References:

T.S. 3.7.A.2.a

T.S. 3.7.A.2.b

Provided References:

Explanation:

Primary containment required when temperature exceeds 212 degrees F. Containment requires one personnel airlock to be closed and one valve in a line with inop PCIS valves to have one valve disabled in the closed position.

Comments:

K/A: 295021A204

Question Source: New

Importance: RO 3.6 SRO 3.5

Cognitive Level: Comprehension-Analysis

RO Tier: 1 **RO Group:** 3

Difficulty Level: 3.0

SRO Tier: 1 **SRO Group:** 2

Exam Level: SRO

10CFR Ref: 43.2

Objective: O-RO-06-01-03 EO 3

All Questions Key

Question Number: 8

ID Number: 8

Given the following conditions:

- A steam leak occurs in the HPCI steam supply line in the HPCI room.
- Efforts to isolate the leak are unsuccessful.
- HPCI Piping area-Torus Compartment temperature is 275 degrees F.

Emergency Depressurization:

- a. is currently required in order to protect secondary containment.
- b. is currently required since continued safe plant operation is no longer assured.
- c. is required if HPCI Piping Area-23 ft Elevation (B RHR Valve Room) exceeds 309 degrees F in order to protect secondary containment and ensure equipment operability.
- d. is required if HPCI Piping Area-23 ft Elevation (B RHR Valve Room) exceeds 309 degrees F in order to protect secondary containment and prevent excessive RPV cooldown.

All Questions Key

Details for Question Number: 8

ID Number: 8

Answer: c

References:

EOP-04

EPG/SAGs Appendix B, page B-8-14

Provided References:

EOP-04

Explanation:

Emerg Depress not required until two areas above max safe for a given parameter. Basis for Emerg Depress is protect secondary containment, equipment operability and ensure continued safe operation.

Comments:

K/A: 295032A202

Question Source: New

Importance: RO 3.3 SRO 3.5

Cognitive Level: Comprehension-Analysis

RO Tier: 1 **RO Group:** 3

Difficulty Level: 3.0

SRO Tier: 1 **SRO Group:** 2

Exam Level: SRO

10CFR Ref: 43.5

Objective: O-RO-03-04-06 EO-10

All Questions Key

Question Number: 9

ID Number: 9

Given the following conditions:

- The plant has been scrammed due to a loss of feedwater.
- MSIVs closed on a low low level signal.
- Feed and condensate has been restored and is being used to control reactor water level in a +20 to +40 inch band.
- A cooldown at normal cooldown rates has been established.
- RCIC is running in pressure control mode and is the only system available for pressure control.
- The RCIC pump develops a small leak on its suction line resulting in RCIC quad water level reaching the max normal value and continuing to rise.

Under these conditions RCIC should:

- a. be isolated since it is not needed for adequate core cooling.
- b. be maintained in service since it is required to be used by EOPs.
- c. be maintained in service since the suction line is NOT a primary system.
- d. be isolated since it is a primary system discharging into secondary containment.

All Questions Key

Details for Question Number: 9

ID Number: 9

Answer: b

References:

EOP-01

EOP-04

Provided References:

EOP-01

EOP-04

Explanation:

This is not a primary system. It is however required to be operated by EOPs therefore it should not be isolated.

Comments:

K/A:	295036K303	Question Source:	New
Importance:	RO 3.5 SRO 3.6	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 3	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 2	Exam Level:	SRO
10CFR Ref:	43.5	Objective:	O-RO-03-04-06 EO-3

All Questions Key

Question Number: 10

ID Number: 10

Given the following conditions:

- RPV Level is -42 inches
- Drywell pressure is 3.5 psig
- You have been directed to initiate torus cooling.

Under these conditions, the Suppression Pool Cooling Valve MO-1001-36A and Suppression Pool Cooling/Spray Block Valve MO-1001-34A:

- a. may be opened using their control switches without operating any override switches.
- b. may be opened only after taking the RPV level override switch to the "MANUAL OVERRIDE" position. The LPCI OVERRIDE spring return switch need not be operated.
- c. may be opened only after taking the LPCI OVERRIDE spring return switch to the "MANUAL OVERRIDE" position. The RPV level override switch need not be operated.
- d. may be opened only after taking both the LPCI OVERRIDE spring return switch and the RPV level override switch to the "MANUAL OVERRIDE" position.

All Questions Key

Details for Question Number: 10

ID Number: 10

Answer: c

References:

2.2.19.5, Rev 7, page 19 of 26

Provided References:

Explanation:

With a LPCI initiation signal present (2.2 psig OR -46" for 11 minutes OR -46" and 400 psig) the LPCI initiation signal override must be operated. The low RPV level only needs to be operated if below 2/3 core coverage

Comments:

TADs 457

K/A:	295013K201	Question Source:	Bank
Importance:	RO 3.6 SRO 3.7	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-09-01 EO 14

All Questions Key

Question Number: 11

ID Number: 11

The Technical Specification limit of 20 microcuries per milliliter Total Iodine of reactor water is based on ensuring that dose at the site boundary to the:

- a. whole body is limited to 8 Rem in the event of a rupture of a main steam line.
- b. thryoid is limited to 8 Rem in the event of a rupture of a main steam line.
- c. whole body is limited to 8 Rem in the event of a rod drop accident.
- d. thyroid is limited to 8 Rem in the event of a rod drop accident.

All Questions Key

Details for Question Number: 11

ID Number: 11

Answer: b

References:

TS Section 3.6 Bases

Provided References:

Explanation:

Per T.S. Bases for 3.6.B.1 the 20 microcurie limit on reactor water limits dose to the thyroid to 8 Rem in the event of a steam line rupture.

Comments:

K/A:	295038A204	Question Source:	New
Importance:	RO 4.1 SRO 4.5	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 1	Exam Level:	SRO
10CFR Ref:	43.2	Objective:	O-RO-06-01-03 EO 4

All Questions Key

Question Number: 12

ID Number: 12

Given the following conditions:

- While on watch you are informed by an I&C supervisor that a generic problem has caused both RBM Channels to be inoperable.
- MCPR is 1.50 and Reactor Power is 75%.

Which ONE of the following lists the required action (s) and the effect on the plant transient analysis of not taking that action?

- a. enter a tracking LCO to ensure an active LCO is entered if you go above 90% power. No effect on plant transient analysis for not entering a tracking LCO.
- b. enter a tracking LCO to ensure an active LCO is entered if MCPR is reduced below 1.41. No effect on plant transient analysis for not entering a tracking LCO.
- c. place at least one RBM channel in the tripped condition within one hour. If this action is not taken the plant is not protected against a single control rod withdrawal error.
- d. place at least one RBM channel in the tripped condition within one hour. If this action is not taken the plant is not protected against a control rod drop accident.

All Questions Key

Details for Question Number: 12

ID Number: 12

Answer: c

References:

TS Table 3.2.C-1 and notes 2 and 5
TS Bases page B3/4.2-4

Provided References:

TS only (no bases)

Explanation:

With reactor power below 90%, a MCPR of less than 1.72 requires that the RBM be operable. Action for both RBM channels inop is to place at least one channel in trip within one hour. The RBM protects against a single control rod withdrawal error.

Comments:

K/A:	2150022106	Question Source:	New
Importance:	RO 2.1 SRO 4.3	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 2	Exam Level:	SRO
10CFR Ref:	43.2	Objective:	O-RO-02-07-05, EO 16

All Questions Key

Question Number: 13

ID Number: 13

Reactor pressure is at 25 psig and shutdown cooling has just been placed in service when a loss of Bus D-4 occurs.

As a result of the loss of D-4 the :

- a. MO-1001-47 valve will automatically close.
- b. MO-1001-47 will lose its auto closure capability on a valid Group III isolation signal.
- c. MO-1001-50 valve will automatically close.
- d. MO-1001-50 will lose its auto closure capability on a valid Group III isolation signal.

All Questions Key

Details for Question Number: 13

ID Number: 13

Answer: d

References:

5.3.11 page 7 of 19, Rev 29

Provided References:

Explanation:

A loss of D-4 causes a loss of auto closure capability of the MO-1001-50 valve.

Comments:

K/A:	295004A102	Question Source:	New
Importance:	RO 3.8 SRO 4.1	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 2	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-01-02 EO 8

All Questions Key

Question Number: 14

ID Number: 14

Given the following conditions:

- The plant is operating at full power with the 'A' Recirc MG set scoop tube locked up.
- A turbine trip occurs.

In accordance with plant procedures:

- a. the 'A' Recirc MG set must be manually tripped from C904.
- b. the 'A' Recirc MG set speed must be manually lowered locally to 26% by a licensed operator.
- c. the 'A' Recirc MG set scoop tube lockup must be reset and the speed lowered to 26% using the C904 controller.
- d. the 'A' Recirc MG set can remain at its current speed provided no indication of thermal stratification is observed.

All Questions Key

Details for Question Number: 14

ID Number: 14

Answer: a

References:

2.1.6, Rev 49 page 6 of 13

Provided References:

Explanation:

Per 2.1.6 on a scram, the operator must verify recircs at min speed. If a scoop tube is locked up, the MG set must be tripped.

Comments:

K/A: 295005A101

Question Source: New

Importance: RO 3.1 SRO 3.3

Cognitive Level: Memory - Fundamental

RO Tier: 1 RO Group: 1

Difficulty Level: 2.5

SRO Tier: 1 SRO Group: 2

Exam Level: BOTH

10CFR Ref: 41.10

Objective: O-RO-02-06-02 EO 13

All Questions Key

Question Number: 15

ID Number: 15

Given the following conditions:

- The plant is in cold shutdown with the 'A' loop of RHR in Shutdown Cooling.
- Reactor pressure rises above 76 psig.
- Drywell pressure is at atmospheric.
- Reactor water level is +38 inches.

Which of the following valves will automatically close?

- a. MO-1001-47 only
- b. MO-1001-50 only
- c. MO-1001-47 and MO-1001-50 only
- d. MO-1001-47 and MO-1001-50 and MO-1001-29A

All Questions Key

Details for Question Number: 15

ID Number: 15

Answer: c

References:

2.2.125.1, Rev 11, pages 8 and 33 of 34

Provided References:

Explanation:

76 psig is a Group III isolation signal. Group III normally isolates 47/50/29A/29B. However if the signal is hi pressure (76 psig) the 29s do not go closed.

Comments:

K/A: 295007K205

Question Source: New

Importance: RO 2.9 SRO 3.1

Cognitive Level: Memory - Fundamental

RO Tier: 1 RO Group: 1

Difficulty Level: 2.5

SRO Tier: 1 SRO Group: 1

Exam Level: BOTH

10CFR Ref: 41.7

Objective: O-RO-02-08-10 EO12

All Questions Key

Question Number: 16

ID Number: 16

Choose from the following list those conditions that would cause the Reactor Water Cleanup system to automatically isolate. (consider each condition independently)

1. High Flow of 300 percent for 3 seconds
 2. Standby Liquid Control Actuation from 905 Panel
 3. Reactor Water Level + 11.6 inches
 4. Low Reactor Pressure of 76 psig
 5. Drywell Pressure of 2.2 psig
-
- a. 1,2 and 3 only
 - b. 1,3 and 4 only
 - c. 3,4 and 5 only
 - d. 2,4 and 5 only

All Questions Key

Details for Question Number: 16

ID Number: 16

Answer: a

References:

2.4.27 rev 14 pg 2 of 6

Provided References:

Explanation:

High Flow of 300 percent for 3 seconds, Standby Liquid Control actuation or Reactor Water level of + 11.6 inches will cause Reactor Water Cleanup to isolate.

Comments:

K/A:	295009K204	Question Source:	New
Importance:	RO 2.6 SRO 2.6	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 1	Difficulty Level:	2.0
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	ORO020605 EO8

All Questions Key

Question Number: 17

ID Number: 17

Given the following conditions:

- A high temperature condition exists in the drywell.
- The operator fails to maximize drywell cooling.

The failure of the operator to maximize drywell cooling will result in RPV level instruments reading:

- a. higher than actual due to heating of the reference leg.
- b. lower than actual due to heating of the reference leg.
- c. higher than actual due to heating of the variable leg.
- d. lower than actual due to heating of the variable leg.

All Questions Key

Details for Question Number: 17

ID Number: 17

Answer: a

References:

NBI Ref Text, Page 43

Provided References:

Explanation:

As drywell heats up, the reference leg also heats up and becomes less dense. This lower density in the reference leg results in a lower pressure on the reference leg side of the d/p detector and a lower differential pressure which results in a higher indicated level.

Comments:

K/A:	295012K301	Question Source:	New
Importance:	RO 3.5 SRO 3.6	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.5	Objective:	O-RO-02-06-01 EO 5.f

All Questions Key

Question Number: 18

ID Number: 18

The following plant conditions exist at time 0100:

- RBVE 1705-32A reads 2050 cps; HI HI Alarm in
- RBVE 1705-32B reads 1500 cps; HI Alarm in
- Stack 1705-18A reads 47,500 cps; HI HI Alarm in
- Stack 1705-18B reads 51,500 cps; HI HI Alarm in

At time 0105 action is taken to isolate the source and PRMs read as follows:

- RBVE 1705-32A reads 2200 cps; HI HI Alarm in
- RBVE 1705-32B reads 1950 cps; HI Alarm in
- Stack 1705-18A reads 51,000 cps; HI HI Alarm in
- Stack 1705-18B reads 53,000 cps; HI HI Alarm in

At time 0110 RBVE-705-32B HI HI Alarm comes in reading 2000 cps. All other readings are the same or higher than they were at 0105.

The time is now 0120. The readings and alarm status have not changed since 0110.

EOP-05 entry conditions:

- a. are not currently met but will be met at time 0130.
- b. are not currently met but will be met at time 0125.
- c. have just been met at this time.
- d. were met five minutes ago at time 0115.

All Questions Key

Details for Question Number: 18

ID Number: 18

Answer: d

References:

EOP-05 Entry Conditions

Provided References:

Explanation:

Entry conditions are Stack Rad Monitors above 10,000 cps for 15 minutes OR RBVE above HI HI for 15 minutes or more after action taken to isolate source.

Comments:

TADS #779

K/A:	295017A107	Question Source:	Bank
Importance:	RO 3.4 SRO 3.6	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	3.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.11	Objective:	O-RO-03-04-07 EO 1

All Questions Key

Question Number: 19

ID Number: 19

The plant is operating normally when "MG B FLUID DRIVE OIL TEMP HI-HI" alarm comes in followed one minute later by "MG A FLUID DRIVE OIL TEMP HI-HI" alarm. Investigation indicates that the alarms have been caused by a loss of cooling water to both Recirc MG Set Oil Systems. Temperatures on both Recirc Pumps are normal.

Which ONE of the following conditions could cause these indications?

- a. A loss of both loops of RBCCW.
- b. A loss of the 'A' loop of RBCCW with the 'B' loop of RBCCW operating normally.
- c. A loss of the 'B' loop of RBCCW with the 'A' loop of RBCCW operating normally.
- d. A complete loss of Salt Service Water.

All Questions Key

Details for Question Number: 19

ID Number: 19

Answer: b

References:

2.4.42, Rev 20, page 17 of 17

Provided References:

Explanation:

'A' RBCCW cools MG set fluid drive oil, 'B' RBCCW cools recirc pumps. Loss of the 'A' loop of RBCCW with 'B' loop of RBCCW still operating would cause high Oil Coupler temperatures with normal Recirc Pump temps.

Comments:

K/A: 295018A201

Question Source: New

Importance: RO 3.3 SRO 3.4

Cognitive Level: Comprehension-Analysis

RO Tier: 1 RO Group: 2

Difficulty Level: 2.5

SRO Tier: 1 SRO Group: 2

Exam Level: RO

10CFR Ref: 41.4

Objective: O-RO-02-02-06 EO 2

All Questions Key

Question Number: 20

ID Number: 20

Instrument Air Pressure is slowly being lost. The operator fails to place the backup air compressor in service and header pressure continues to lower.

Select from the list below the expected response of the RBCCW system temperature and RBCCW surge tank level.

- a. System temperature will increase and surge tank level will increase.
- b. System temperature will decrease and surge tank level will decrease.
- c. System temperature will decrease and surge tank level will increase.
- d. System temperature will increase and surge tank level will decrease.

All Questions Key

Details for Question Number: 20

ID Number: 20

Answer: c

References:

PNPS 5.3.8 Rev 24, page 9 of 11

Provided References:

Explanation:

RBCCW TCV (bypasses heat exchanger) fails closed giving maximum cooling to RBCCW,
RBCCW surge tank LCV fails open, raising level

Comments:

K/A:	295019K302	Question Source:	New
Importance:	RO 3.5 SRO 3.4	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-02-04 EO 9

All Questions Key

Question Number: 21

ID Number: 21

The plant experienced a loss of shutdown cooling due to spurious closure of the MO-1001-50 valve. This valve cannot be reopened. RHR in the LPCI mode is the only method of injection currently available.

Which ONE of the following sets of conditions would require aligning RHR in the LPCI mode and raising reactor water level above +60 inches?

- a. The reactor is pressurized with the main condenser available.
- b. The reactor is pressurized with no heat sink available.
- c. The reactor is pressurized with HPCI available.
- d. The reactor is pressurized with a RCIC available.

All Questions Key

Details for Question Number: 21

ID Number: 21

Answer: b

References:

2.4.25 rev 20 pg 3 of 8

Provided References:

Explanation:

Loss of shutdown cooling with reactor not pressurized or no available heat sink will require raising RPV level to greater than or equal to +60 inches

Comments:

K/A:	295021A102	Question Source:	New
Importance:	RO 3.5 SRO 3.5	Cognitive Level:	Comprehension-Analysis
RO Tier:	1	RO Group:	3
SRO Tier:	1	Difficulty Level:	2.5
SRO Group:	2	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	ORO-03-01-18 TO 299-03-01-21 TO 344-03-02-007

All Questions Key

Question Number: 22

ID Number: 22

Given the following conditions:

A loss of Offsite power has occurred
The Mode switch is in shutdown
'A' EDG currently supplying 4160 Bus A5 load is 2200 KW
'B' EDG currently supplying 4160 Bus A6 load is 2850 KW
Drywell pressure is 2.4 psig and rising slowly
Reactor water level is +11 inches and lowering slowly
The CRD system is the only injection source available.

In accordance with plant procedures, which ONE of the following actions are directed to allow the CRD system to aid in recovering reactor water level?

- a. Start the 'A' CRD Pump. Bypass of load shed is not required.
- b. Start the 'B' CRD Pump. Bypass of load shed is not required.
- c. Defeat load shed signal and start the 'A' CRD pump.
- d. Defeat load shed signal and start the 'B' CRD pump.

All Questions Key

Details for Question Number: 22

ID Number: 22

Answer: c

References:

2.4.4 rev 16 page 4 of 12

Provided References:

Explanation:

Load shed signal is present (Undervoltage and Hi DW Pressure) and must be bypassed. CRD pump rating is 227 KW therefore starting B CRD Pump would place B EDG load above 3000 KW (30-minute rating). Therefore bypass load shed and start A CRD Pump is appropriate action per PNPS 2.4.4

Comments:

K/A:	295022K204	Question Source:	New
Importance:	RO 2.5 SRO 2.7	Cognitive Level:	Comprehension-Analysis
RO Tier:	2	RO Group:	1
SRO Tier:	2	SRO Group:	1
10CFR Ref:	41.10	Difficulty Level:	3.0
		Exam Level:	BOTH
		Objective:	O-RO-02-06-11 EO-12.I

All Questions Key

Question Number: 23

ID Number: 23

A degradation of the pumping ability of the only available CRD pump has occurred. This has resulted in difficulty getting control rods to move for the weekly exercise.

In order to get the control rods to move you would increase drive water pressure by _____ 1 _____ the MO-301-8 Drive Water PCV. This would result in _____ 2 _____ cooling water pressure and cooling flow to the CRDs.

- a. (1) opening
(2) lowering
- b. (1) opening
(2) raising
- c. (1) closing
(2) lowering
- d. (1) closing
(2) raising

All Questions Key

Details for Question Number: 23

ID Number: 23

Answer: c

References:

2.4.11.1, Rev 11, page 13 of 16

Provided References:

Explanation:

The drive header taps off upstream of the CRD-8 valve. Therefore the CRD-8 valve must be closed to raise upstream pressure. The cooling header is downstream of the CRD-8 valve so closing the CRD-8 valve will lower cooling water pressure/flow.

Comments:

K/A:	295022K302	Question Source:	New
Importance:	RO 2.9 SRO 3.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.6	Objective:	O-RO-02-06-11 EO 2.I

All Questions Key

Question Number: 24

ID Number: 24

PNPS 4.3 requires that access to areas above the 63' elevation of the drywell be secured while fuel is handled in the reactor vessel. Choose the statement below that describes why this limitation is imposed.

- a. Work in the upper drywell, such as welding or cutting, will cause erratic SRM indications.
- b. When fuel is lifted above the biological shield, the radiation levels in the upper drywell could increase substantially.
- c. During fuel handling in the vessel the reactor cavity will be flooded. Access is restricted to prevent personnel contamination should the refueling bellows develop a leak.
- d. The cattle chute will shield the refuel floor ARMs. Access is limited since no accurate indication of radiation levels is available.

All Questions Key

Details for Question Number: 24

ID Number: 24

Answer: b.

References:

PNPS 4.3, Rev 86, page 24 of 45

Provided References:

Explanation:

Access to the drywell is limited above 63' elevation when moving fuel because of possible changing radiological conditions.

Comments:

Modified from question ID 648 from INPO exam bank, Duane Arnold, exam date 05/25/99

K/A:	295023K101	Question Source:	Bank Modified
Importance:	RO 3.6 SRO 4.1	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 3	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.12	Objective:	O-RO-02-06-06 TO 10

All Questions Key

Question Number: 25

ID Number: 25

Given the following conditions:

- Reactor pressure rises to 1100 psig.
- The SRV with the lowest setpoint lifts and just stabilizes pressure at 1100 psig.

Under these conditions, the expected SRV tailpipe temperature on the lifting SRV would be:

- a. 180 degrees F.
- b. 212 degrees F.
- c. 290 degrees F.
- d. 545 degrees F.

All Questions Key

Details for Question Number: 25

ID Number: 25

Answer: c

References:

Steam Tables

Provided References:

Steam Tables

Explanation:

The SRV will be constant enthalpy. Using steam tables at 1100 psig and saturation condition, following constant enthalpy line over to the atmospheric pressure line, gives a temperature of about 290 degrees F.

Comments:

This question was modified from question given on May 2000 exam (Two exams ago)

K/A: 295025K103

Question Source: Bank Modified

Importance: RO 3.6 SRO 3.8

Cognitive Level: Comprehension-Analysis

RO Tier: 1 RO Group: 1

Difficulty Level: 2.5

SRO Tier: 1 SRO Group: 1

Exam Level: BOTH

10CFR Ref: 41.14

Objective: O-RO-02-04-01 EO 19

All Questions Key

Question Number: 26

ID Number: 26

Post scram with MSIV's closed, reactor pressure is 925# and lowering slowly.

HPCI is in full flow test with the full flow test valve (MO-2301-10) full open and the flow controller in automatic and set at 3000 GPM. Reactor pressure is slowly lowering.

Stabilizing reactor pressure would require:

- a. raising the auto setpoint on the flow controller.
- b. lowering the auto setpoint on the flow controller.
- c. shifting the flow controller to manual and lowering the manual setpoint .
- d. jogging the full flow test valve in the closed direction.

All Questions Key

Details for Question Number: 26

ID Number: 26

Answer: c

References:

2.2.21.5, Rev 11, Page 12 of 25

Provided References:

Explanation:

To lower steam demand, operator has to either open the test valve more or reduce flow rate. Test valve is already full open. Minimum flow in auto is 3000 gpm requiring controller to be swapped to manual prior to reducing flow. Other distractors are plausible manipulations. 'a' and 'd' would increase steam flow, 'b' would violate procedure.

Comments:

Bank Question from Nov 2000 NRC Exam

K/A:	295025K303	Question Source:	Bank
Importance:	RO 3.8 SRO 3.8	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.5	Objective:	O-RO-02-09-03 EO 16

All Questions Key

Question Number: 27

ID Number: 27

During a plant transient, the Core Spray Pumps are being used to supply core cooling. An operator on his rounds reports that both Core Spray Pumps are making excessive noise and vibrating excessively.

Which ONE of the following conditions could be responsible for this condition?

- a) Low suppression pool level
- b) High torus air space temperature
- c) High drywell pressure
- d) Low drywell to torus differential temperature

All Questions Key

Details for Question Number: 27

ID Number: 27

Answer: a

References:

EOP-11

Provided References:

Explanation:

Indications given are for low NPSH causing cavitation. Low SP Level is the only parameter given that will lower available NPSH.

Comments:

K/A:	295030K307	Question Source:	New
Importance:	RO 3.5 SRO 3.8	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.5	Objective:	O-RO-03-04-05 TO 9

All Questions Key

Question Number: 28

ID Number: 28

RCIC is being used to control RPV water level with its suction aligned to the torus when a leak in the torus occurs:

Which ONE of the following will occur as torus level continues to lower?

- a) RCIC will trip on low suction pressure.
- b) RCIC will trip on low torus water level.
- c) RCIC suction will auto transfer to the CST on low torus water level.
- d) RCIC suction will auto transfer to the CST on low suction pressure.

All Questions Key

Details for Question Number: 28

ID Number: 28

Answer: a

References:

2.2.22, Rev 59, page 11 of 53

Provided References:

Explanation:

RCIC has no auto swap feature. RCIC trips on low suction pressure but not directly on low torus water level.

Comments:

K/A:	295030A102	Question Source:	New
Importance:	RO 3.4 SRO 3.5	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-09-04 EO 12

All Questions Key

Question Number: 29

ID Number: 29

During operation at 100% power with FWLC in 3-element, a single steam line flow channel fails downscale.

The system response is:

- a) The total steam flow signal increases, a feed flow/steam flow mismatch is produced which increases RPV level.
- b) The total steam flow signal decreases, a feed flow/steam flow mismatch is produced which decreases RPV level.
- c) The total steam flow signal increases, a feed flow/steam flow mismatch is produced which decreases RPV level.
- d) The total steam flow signal decreases, a feed flow/steam flow mismatch is produced which increases RPV level.

All Questions Key

Details for Question Number: 29

ID Number: 29

Answer: b

References:

FWLC Ref Text, page 27-28 of 50

Provided References:

Explanation:

Loss of one steam flow detector will result in indicated steam flow being less than actual. FWLC will then see feed flow as greater than steam flow and will anticipate a level change and close the FRVs, lowering level.

Comments:

TADS #749

K/A:	295031K216	Question Source:	Bank
Importance:	RO 4.1 SRO 4.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-04-10 EO 26

All Questions Key

Question Number: 30

ID Number: 30

Given the following conditions:

- The plant is at 100% power when an RCIC Quad fire alarm comes in.
- STEAM LEAKAGE AREA TEMP HI (C904L-A6) Alarm comes in.
- It is determined that RCIC Turbine Area (TS-1340-8B) is in alarm and reading 150 degrees F and RCIC TIP Room (TS-1340-8C) is in alarm and reading 140 degrees F.
- The cause of the rising temperatures is found to be a fire in the area.
- The fire is not spreading but cannot be put out and temperatures continue to rise.

Based on these conditions, EOP-04 requires the plant to be:

- a) scrammed if RCIC Turbine Area Temperature exceeds 175 degrees F OR RCIC Tip Room Temperature exceeds 224 degrees F.
- b) Emergency Depressurized if RCIC Turbine Area Temperature exceeds 175 degrees F AND RCIC Tip Room Temperature exceeds 224 degrees F.
- c) shutdown if RCIC Turbine Area Temperature exceeds 175 degrees F OR RCIC Tip Room Temperature exceeds 224 degrees F.
- d) shutdown if RCIC Turbine Area Temperature exceeds 175 degrees F AND RCIC Tip Room Temperature exceeds 224 degrees F.

All Questions Key

Details for Question Number: 30

ID Number: 30

Answer: d

References:

EOP-04

Provided References:

EOP-04

Explanation:

Action required to shutdown if two areas above Max Safe Temperature. Scram and Emergency
Depress only required if a primary system is discharging into secondary containment

Comments:

K/A:	295032K203	Question Source:	New
Importance:	RO 3.3 SRO 3.4	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 3	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	O-RO-03-04-06 EO 11.a

All Questions Key

Question Number: 31

ID Number: 31

Given the following conditions:

- The plant is initially operating at 100% power.
- An isolation of Reactor Building Ventilation and auto start of SBTG occurred.
- The plant continues to operate at 100% power.
- All systems functioned as designed.

Which ONE of the following could have caused the isolation of Reactor Building Ventilation and auto start of SBTG?

- a) 'A' and 'C' Low Reactor Water Level signals
- b) 'A' and 'D' Hi Drywell Pressure signals
- c) 'A' and 'C' Refuel Floor Hi Radiation Signals
- d) 'A' and 'B' Refuel Floor Hi Radiation Signals

All Questions Key

Details for Question Number: 31

ID Number: 31

Answer: d

References:

Rx Bldg HVAC Ref Text page 14 of 46
2.2.40, Rev 20, page 8 of 43

Provided References:

Explanation:

Trip logic for RBIS/SBGT is one out of two taken twice. Low Reactor Water Level and Hi Drywell Pressure will also give a reactor scram so you would not still be at 100% power.

Comments:

K/A: 295033K202

Question Source: New

Importance: RO 3.8 SRO 4.1

Cognitive Level: Memory - Fundamental

RO Tier: 1 RO Group: 1

Difficulty Level: 2.5

SRO Tier: 1 SRO Group: 1

Exam Level: BOTH

10CFR Ref: 41.11

Objective: O-RO-02-08-05 EO 10

All Questions Key

Question Number: 32

ID Number: 32

The OFF-GAS ISOL CH PRM SEL switch is in the "MON 2" position. Which ONE of the following conditions of the Air Ejector Off Gas Radiation Monitors will cause the 13 minute time to initiate?

- a. Hi radiation signal on one channel and INOP signal on the other channel.
- b. Hi Hi radiation signal on one channel
- c. Hi radiation on one channel and Downscale Trip on the other channel.
- d. Downscale trip on one channel and Hi Hi trip on the other channel.

All Questions Key

Details for Question Number: 32

ID Number: 32

Answer: d

References:

PNPS 2.2.155, Rev 12, page 23 of 60

Provided References:

Explanation:

Hi Hi condition is an upscale trip. Downscale condition is a downscale trip. Two trips will start the 13 minute timer.

Comments:

TAD #3307, Used on 1997 NRC Exam

K/A:	295033A203	Question Source:	Bank
Importance:	RO 3.7 SRO 4.2	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 2	Exam Level:	RO
10CFR Ref:	41.11	Objective:	O-RQ-02-03-02 EO 6.a

All Questions Key

Question Number: 33

ID Number: 33

During 100 percent power operations, which of the following describes why the Reactor Building Ventilation System is designed to maintain a negative pressure of .2 to .25 inches of water in the Reactor Building?

- a) By maintaining this pressure the operability of the secondary containment can be verified.
- b) By maintaining this pressure all releases are from an elevated stack.
- c) By maintaining this pressure any failure of the Reactor Building personnel locks will be in a manner to close and seal at least one door in each lock.
- d) By maintaining this pressure the SGTS trains can be of lower capacity to maintain a negative pressure following an RBIS actuation.

All Questions Key

Details for Question Number: 33

ID Number: 33

Answer: b

References:

PNPS 2.2.40 rev 20 pg 8 of 43

ReactorBuilding HVAC reference text page 5 and 6 of 46

Provided References:

Explanation:

Reactor building Ventilation system operates to maintain a negative pressure of .2 to .25 inches of water to limit radioactive material releases to the environment such that 10 CFR 100 limits are not exceeded.

Comments:

TADS Question number 6037

K/A: 295035K102

Question Source: Bank

Importance: RO 3.7 SRO 4.2

Cognitive Level: Memory - Fundamental

RO Tier: 1 RO Group: 3

Difficulty Level: 2.0

SRO Tier: 1 SRO Group: 2

Exam Level: BOTH

10CFR Ref: 41.7

Objective: O-RO-02-08-05 EO 4

All Questions Key

Question Number: 34

ID Number: 34

EOP-01 was entered due to a condition being present which required a reactor scram and following the scram reactor power is unknown. You then transition to EOP-02. With Reactor Engineering NOT available, which of the following sets of conditions warrant a complete exiting of EOP-02?

- a. Reactor power is less than 3%
- b. IRMS are on range 7 and the reactor is subcritical
- c. All control rods are fully inserted to or beyond position 00 except one which is at position 48.
- d. 750 gallons of Boron have been injected

All Questions Key

Details for Question Number: 34

ID Number: 34

Answer: c

References:

EOP-02
PNPS 5.3.35, Rev 3, page 25 of 106

Provided References:

EOP-02

Explanation:

3% power will allow feed flow to be re-initiated if it has been stopped. Below heating range and subcritical defines reactor shutdown (not will remain shutdown under all conditions). Reactor being shutdown will allow level to be raised to a normal +20 to +40 band. 750 gallons is the hot shutdown boron weight which will also allow level to be raised to a normal +20 to +40 inch band. All rods in except one is the only condition that CR personnel can determine that the reactor will remain shutdown under all conditions. This is based on the shutdown margin T.S. 4.3.A.1.

Comments:

Modified from TADS 6380 and 1249

K/A:	295037K107	Question Source:	Bank Modified
Importance:	RO 3.4 SRO 3.8	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 1	Difficulty Level:	3.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.6	Objective:	O-RO-03-04-04 EO3

All Questions Key

Question Number: 35

ID Number: 35

Given the following conditions:

- You are the C905 operator.
- You have determined that an ATWS condition exists.
- The Main Turbine is NOT on line.
- Reactor power is 10%.

Which ONE of the following actions would require direction from the CRS or SM prior to executing?

- a. Manually initiate ARI.
- b. Run Reactor Recirc Pumps back to minimum speed.
- c. Trip Reactor Recirc Pumps.
- d. Inject Standby Liquid Control.

All Questions Key

Details for Question Number: 35

ID Number: 35

Answer: d

References:

PNPS 5.3.35, Rev 3, Page 22 of 106

Provided References:

Explanation:

PNPS 5.3.35 directs the operator to complete steps Q-2 through Q-7 of EOP-02 without direction from the CRS or SM. These steps include the actions of a, b, and c. While SBLC injection is required if reactor power is above 3%, there is no direction to do it without direction from CRS or SM.

Comments:

K/A:	295037A104	Question Source:	New
Importance:	RO 4.5 SRO 4.5	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	None Identified

All Questions Key

Question Number: 36

ID Number: 36

Following a leak in the drywell, a Group 2 Isolation occurs.

With the isolation signal still present, the H₂/O₂ supply and return valves may:

- a. be opened at any time.
- b. be opened only after the "PCIS GROUP 2, 3, 6 ISOL RESET" switch on C905 is reset.
- c. be opened only after the "PCIS GROUP 2 ISOL" keylock switches on C904 are taken to "OVERRIDE".
- d. be opened only after the "PCIS GROUP 2 ISOL" keylock switches on C904 are taken to "RESET".

All Questions Key

Details for Question Number: 36

ID Number: 36

Answer: c

References:

PNPS 2.2.133, Rev 26, Pages 26-27 of 59

Provided References:

Explanation:

Per 2.2.133, the Group 2 Isol Override Reset Switches must be placed in Override prior to opening H2/O2 valves with a isolation signal present.

Comments:

TADS #697

K/A:	500000A103	Question Source:	Bank
Importance:	RO 3.4 SRO 3.2	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	O-RO-02-09-10 EO 6

All Questions Key

Question Number: 37

ID Number: 37

Given the following conditions:

A loss of offsite power has occurred.

The 'A' and 'B' EDGs are running and supplying buses A-5 and A-6.

Drywell pressure is 2.3 psig and rising slowly.

Drywell temperature is 204 degrees F and rising slowly.

The Mode Switch is in Shutdown with all control rods fully inserted.

Reactor water level is +20 inches and rising with no evidence of leakage from the RPV.

Which ONE of the following is the correct method to reduce drywell pressure?

- a. Vent the torus/drywell using SBGT per 2.2.70.
- b. Defeat load shed logic and restart drywell cooling fans.
- c. Verify that all drywell cooling fans have automatically started.
- d. Restart drywell cooling fans. No defeat of load shed logic is required.

All Questions Key

Details for Question Number: 37

ID Number: 37

Answer: b

References:

EOP-3

PNPS 2.4.44, Rev 18, page 3 of 7

Provided References:

EOP-03

Explanation:

Load shed logic is required to be defeated prior to restarting drywell coolers.

Comments:

K/A:	295010A206	Question Source:	New
Importance:	RO 3.6 SRO 3.6	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	O-RO-02-08-04 EO 12

All Questions Key

Question Number: 38

ID Number: 38

Given the following conditions:

- Drywell pressure is 10 psig.
- Torus bottom pressure is 15 psig.
- Drywell temperature is 265 degrees F.

Under these conditions, entry to the 'U' leg of EOP-03 is:

- a. allowed by both the Primary Containment Pressure and Drywell Temperature legs of EOP-03.
- b. allowed by NEITHER the Primary Containment Pressure NOR the Drywell Temperature legs of EOP-03.
- c. allowed by the Primary Containment Pressure leg of EOP-03 but not the Drywell Temperature leg of EOP-03.
- d. allowed by the Drywell Temperature leg of EOP-03 but not the Primary Containment Pressure leg of EOP-03.

All Questions Key

Details for Question Number: 38

ID Number: 38

Answer: d

References:

EOP-03

Provided References:

EOP-03

Explanation:

Primary Containment Pressure leg only allows drywell spray ("U" leg) when torus bottom pressure exceeds 16 psig. Drywell temperature leg allows drywell spray before drywell temperature reaches 280 (but after it exceeds 150 degrees F)

Comments:

K/A: 295012A202

Question Source: New

Importance: RO 3.9 SRO 4.1

Cognitive Level: Comprehension-Analysis

RO Tier: 1 RO Group: 2

Difficulty Level: 3.0

SRO Tier: 1 SRO Group: 2

Exam Level: RO

10CFR Ref: 41.10

Objective: O-RO-03-04-05 EO 14.a

All Questions Key

Question Number: 39

ID Number: 39

Which ONE of the following conditions is the Rod Block Monitoring System designed to provide protection against?

- a. A rod insertion error with reactor power at 85% and MCPR at 1.66.
- b. A rod insertion error with reactor power at 95% and MCPR at 1.66.
- c. A rod withdrawal error with reactor power at 85% and MCPR at 1.66.
- d. A rod withdrawal error with reactor power at 95% and MCPR at 1.66.

All Questions Key

Details for Question Number: 39

ID Number: 39

Answer: c

References:

2.2.68, Rev 16, page 6 of 18
TS Table 3.2.C-1, note 5

Provided References:

T.S.

Explanation:

The RBM protects against Rod Withdrawal error when a Limiting Control Rod Pattern exists. With reactor power greater than or equal to 90%, a limiting control rod pattern is defined by MCPR less than 1.41. With reactor power less than 90%, a limiting control rod pattern is defined by MCPR less than 1.72.

Comments:

K/A:	295014K302	Question Source:	New
Importance:	RO 3.7 SRO 3.7	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-07-05 EO 1

All Questions Key

Question Number: 40

ID Number: 40

Which of the following represents the normal method used by RMCS to accomplish continuous rod insertion?

- a. Continuous insert signal supplied by the rod movement control switch is applied directly to the drive in or drive out bus, bypassing the timer circuit.
- b. After the timer initiates the drive in signal, the RMCS logic interrupts power to the timer motor which seals in the drive in signal until the rod movement control switch is released.
- c. By maintaining the rod movement control switch to "in", the timer motor remains energized which provides repetitive timer cycles until the rod movement control switch is released.
- d. The EMERGENCY IN switch is operated immediately after each notch in signal to reset the timer so that the next notch in signal may begin without any delay.

All Questions Key

Details for Question Number: 40

ID Number: 40

Answer: b

References:

Reactor manual control system reference text page 18 of 47

Provided References:

Explanation:

The continuous in cycle mode uses the basic in cycle . It is generated by holding the rod movement switch in the IN position . This interrupts the timer motor power at the beginning of the drive in cycle 0.4 sec stopping the timer at that point in the sequence.

Comments:

TADS # 266

K/A: 201002K408

Question Source: Bank

Importance: RO 3.2 SRO 3.2

Cognitive Level: Memory - Fundamental

RO Tier: 2 RO Group: 1

Difficulty Level: 3.0

SRO Tier: 2 SRO Group: 2

Exam Level: BOTH

10CFR Ref: 41.6

Objective: O-RO-02-06-08 EO5

All Questions Key

Question Number: 41

ID Number: 41

Given the following conditions:

Rod 30-31 is being inserted per the ROD PULL SHEET
The Scram inlet valve (CRD-AOV-126) for control rod 30-31 opens
The Directional Control Valve 121 for rod 30-31 sticks open

Which of the following describes the response of the plant over the next five (5) minutes, and the reason why?

Reactor power will;

- a. remain at 100 percent. NO control rod movement will occur. NO leakage into the scram discharge volume will occur.
- b. lower, but the plant will continue to operate at power. Rod 30-31 will insert. NO leakage into the scram discharge volume will occur.
- c. lower, but the plant will continue to operate at power. Rod 30-31 will insert. Leakage will occur into the scram discharge volume, no scram will occur.
- d. lower until APRM downscale alarms are received. Leakage will occur into the scram discharge volume until a reactor scram occurs.

All Questions Key

Details for Question Number: 41

ID Number: 41

Answer: b

References:

Control Rod Hydraulics lesson plan page 18 of 56

Provided References:

Explanation:

Opening of Scram inlet valve 126 discharges HCU accumulator pressure to the CRDM underpiston area. Opening 127 discharges to the SCRAM discharge volume. The 121 Directional Control Valve will route the water to the exhaust header.

Comments:

TADS # 5718

K/A:	201003K301	Question Source:	Bank
Importance:	RO 3.2 SRO 3.4	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 3	Exam Level:	BOTH
10CFR Ref:	41.6	Objective:	O-RO-02-06-11 EO 10

All Questions Key

Question Number: 42

ID Number: 42

Given the following conditions:

- The plant is operating at 98% power.
- Both Feed Reg Valves are locked up.
- The 'A' Reactor Recirc Pump starts to run away.
- The operator locks the 'A' Recirc MG set scoop tube with reactor power at 100%.
- No other operator action is taken.

The speed of the 'B' Reactor Recirc Pump will remain constant until:

- a. the #1 Limiter lowers speed immediately following the reactor scram..
- b. the #1 Limiter lowers speed after the Reactor Feed Pumps trip on high reactor level following the scram.
- c. the #2 Limiter lowers speed as level lowers past 19 inches.
- d. the 'B' Reactor Recirc Pump trips on low low reactor water level.

All Questions Key

Details for Question Number: 42

ID Number: 42

Answer: b

References:

Recirc Flow Control lesson plan page 6 of 31

Provided References:

Explanation:

Feed flow will remain constant since the FRVs are locked. After the scram level will start to rise since we are still feeding at 98% feed flow. RFPs will trip on hi level. At that point feed flow will be less than 20% and 'B' recirc pump will run back to 26%.

Comments:

K/A:	202002K303	Question Source:	New
Importance:	RO 3.3 SRO 3.4	Cognitive Level:	Comprehension-Analysis
RO Tier:	2	RO Group:	1
SRO Tier:	2	SRO Group:	1
10CFR Ref:	41.7	Difficulty Level:	3.0
		Exam Level:	BOTH
		Objective:	O-RO-02-06-10 EO 8b

All Questions Key

Question Number: 43

ID Number: 43

During a power reduction from 100 percent power the following conditions exist;

"A" Recirc pump speed	77 percent
"B" Recirc pump speed	68 percent
Reactor power	90 percent

In accordance with plant procedures:

- a. no action is required since pumps speeds are within 10% of each other.
- b. action must be taken to bring pump speeds within 8% of each other.
- c. action must be taken to match pump speeds exactly.
- d. no action will be required unless reactor power is reduced to 80 percent.

All Questions Key

Details for Question Number: 43

ID Number: 43

Answer: b

References:

PNPS 2.1.15, Rev 134, Page 63 of 110

Provided References:

Explanation:

2.1.15 requires that recirc pump speeds be matched within 8% when power is above 80%

Comments:

modified from TADS # 367

K/A:	202002A204	Question Source:	Bank Modified
Importance:	RO 3.0 SRO 3.2	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	O-RO-02-06-10 EO 9a

All Questions Key

Question Number: 44

ID Number: 44

Given the following conditions

- Drywell pressure is 20 psig and rising rapidly
- Reactor pressure is 500 psig and dropping rapidly
- Reactor water level is – 100 inches and dropping rapidly
- Suppression pool temperature is 132 degrees and rising
- 480 VAC MCC B-15 has tripped and cannot be restored
- You have been instructed to place LPCI in injection mode with maximized cooling

Which of the following actions are required

- a. Cross-tie the RBCCW loops AND close RBCCW loop “A” non essential isolation valves.
- b. Cross-tie the RBCCW loops AND close RBCCW loop “B” non essential isolation valves.
- c. Do not cross-tie the RBCCW loops but close RBCCW loop “B” non essential isolation valves.
- d. Do not cross-tie the RBCCW loops but close RBCCW loop “A” non essential isolation valves.

All Questions Key

Details for Question Number: 44

ID Number: 44

Answer: c

References:

PNPS 2.2.19.5 rev 8 page 17 of 27

Provided References:

Explanation:

Per PNPS 2.2.19.5 maximizing RBCCW cooling during LPCI injection mode with LOCA in progress and only one loop of RBCCW operable with suppression pool temperature greater than 130 degrees, RBCCW will not be crosstied and only the non-essential loads on the operable loop of RBCCW will be isolated

Comments:

Modied from TADS 5643

K/A:	203000K610	Question Source:	Bank Modified
Importance:	RO 3.0 SRO 3.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	Terminal objective 299-03-01-021 200-05-01-011

All Questions Key

Question Number: 45

ID Number: 45

Given the following conditions

- A LOCA is in progress
- Reactor pressure is 290 psig
- 'B' RHR loop is aligned in the injection mode
- 'A' RHR loop is aligned for torus cooling

Which of the following would be true concerning the discharge pressure of the 'D' RHR pump?

- 'D' RHR pump discharge pressure would be slightly greater than Reactor pressure but less than pump design shutoff head.
- 'D' RHR pump discharge pressure cannot be determined due to the LPCI injection valves being closed.
- 'D' RHR pump discharge pressure would be pump design shutoff head.
- 'D' RHR pump discharge pressure would be torus bottom pressure plus the Tech Spec pump D/P value.

All Questions Key

Details for Question Number: 45

ID Number: 45

Answer: a

References:

RHR lesos plan page 34 and 35 of 116
GFES components pump laws

Provided References:

Explanation:

LPCI injection valves will open when Reactor pressure drops below 395-405 psig centrifugal pump discharge pressure will be dependent on system pressure pump is discharging into. Pumps laws state as system pressure decreases flow will increase discharge pressure will drop until runout conditions exist.

Comments:

K/A:	203000A410	Question Source:	New
Importance:	RO 3.7 SRO 3.6	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-09-01 EO 15i O-RO-02-09-01 17

All Questions Key

Question Number: 46

ID Number: 46

The plant was operating at 100 percent power with the 'B' CRD pump in service. Subsequently a valid LOCA signal generated a Scram. The plant responds as expected except that the startup transformer feeder breaker to bus A-5 fails to close due to a maintenance error. The A-5 bus has been automatically energized from the shutdown transformer as designed.

Which one of the following describes the status/availability of the CRD pumps?

- a. 'B' CRD pump is running 'A' CRD pump can be started since no load shed signal was generated.
- b. 'B' CRD pump is NOT running 'A' and 'B' CRD pumps cannot be started due to load shed signal.
- c. 'B' CRD pump is NOT running 'A' and 'B' CRD pumps can be started since no load shed signal was generated.
- d. 'B' CRD pump is running 'A' CRD pump cannot be started due to load shed signal.

All Questions Key

Details for Question Number: 46

ID Number: 46

Answer: d

References:

PNPS 2.4.16 rev27 pages 24,25 of 46

Provided References:

Explanation:

A valid LOCA signal and bus A-5 below its degraded voltage setpoint for 9.2 seconds will initiate a Load shed signal. The SDT will energize the A-5 bus after 12 seconds. "A" CRD pump is powered from bus A-5.

Comments:

TADS # 3310 used on 1997 NRC exam

K/A:	295003A103	Question Source:	Bank
Importance:	RO 4.4 SRO 4.4	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-0209-08 EO 11

All Questions Key

Question Number: 47

ID Number: 47

The plant is currently shut down on day 16 of a planned 28 day refueling outage. The electrical system is in the BACKSCUTTLE mode. The "A" RHR pump is aligned for shutdown cooling.

Which of the following describes the power supply flow path to the "A" RHR pump motor?

- a. 345 KV line through the generator output breakers ACB 104,105 through the main transformer disconnect through the main transformer through the UNIT Aux transformer to bus A-5.
- b. 345 KV line through the generator output breakers ACB 104,105 through the main transformer disconnect through the main transformer through the UNIT Aux transformer to bus A-6.
- c. 345 KV line through the generator output breakers ACB 104,105 through the main generator flexible connectors through the main transformer through the UNIT Aux transformer to bus A-6.
- d. 345 KV line through the generator output breakers ACB 104,105 through the main generator flexible connectors through the main transformer through the UNIT Aux transformer to bus A-5.

All Questions Key

Details for Question Number: 47

ID Number: 47

Answer: a

References:

2.2.19 rev 81 page 83 of 129

PNPS 3.M.3-9 rev 16 page 6 of 71

Provided References:

Explanation:

The power supply for A RHR pump is 4160 V Bus A-5. During a backsuttle lineup the main generator disconnect links will be removed and power will be supplied via the grid through the generator output breakers through the main transformer disconnect through the unit Aux transformers and to the 4160volt distribution system.

Comments:

K/A: 205000K201

Question Source: New

Importance: RO 3.1 SRO 3.1

Cognitive Level: Memory - Fundamental

RO Tier: 2 RO Group: 2

Difficulty Level: 2.5

SRO Tier: 2 SRO Group: 2

Exam Level: BOTH

10CFR Ref: 41.7

Objective: O-RO-02-09-01 EO 15 a

All Questions Key

Question Number: 48

ID Number: 48

The plant is operating at 100 percent power when a LOCA and concurrent Loss of Offsite Power occurs. Which of the following describes the effects on the TBCCW and RBCCW systems, assuming no operator actions and all systems function per design.

- a. RBCCW will be aligned for maximum cooling and TBCCW will be aligned for maximum cooling.
- b. RBCCW will be aligned for reduced cooling and TBCCW will be aligned for maximum cooling.
- c. RBCCW will be aligned for maximum cooling and TBCCW will be aligned for reduced cooling.
- d. RBCCW will be aligned for reduced cooling and TBCCW will be aligned for reduced cooling.

All Questions Key

Details for Question Number: 48

ID Number: 48

Answer: **c**

References:

PNPS 2.2.32 rev 61 page 11 of 68

Provided References:

Explanation:

During a LOCA with an LOSP, SSW to RBCCW heat exchanger outlet valves open fully, SSW to TBCCW heat exchanger outlet valves throttle to 10 % position.

Comments:

K/A: 400000K101

Question Source: New

Importance: **RO** 3.2 **SRO** 3.3

Cognitive Level: Comprehension-Analysis

RO Tier: 2 **RO Group:** 2

Difficulty Level: 2.5

SRO Tier: 2 **SRO Group:** 2

Exam Level: BOTH

10CFR Ref: 41.7

Objective: O-RO 02-02-02 EO 5

All Questions Key

Question Number: 49

ID Number: 49

Given the following conditions;

- The plant experienced a spurious SCRAM
- You have been instructed to reset the scram.
- SDIV HI LEVEL SCRAM BYPASS switch has been taken to BYPASS.
- The SCRAM RESET SELECTOR SWITCH has been repositioned to energize all Group Scram Logic Lights.
- The SDIVs have not been drained.

Which of the following describes the status of the Group Scram logic lights on the C905 panel if the MODE SWITCH is placed in the STARTUP position at this time?

- a. "A" RPS Group Scram logic lights will be illuminated. "B" RPS Group Scram logic lights will be extinguished.
- b. "A" RPS Group Scram logic lights will be extinguished. "B" RPS Group Scram logic lights will be illuminated.
- c. "A" RPS Group Scram logic lights will be illuminated. "B" RPS Group Scram logic lights will be illuminated.
- d. "A" RPS Group Scram logic lights will be extinguished. "B" RPS Group Scram logic lights will be extinguished.

All Questions Key

Details for Question Number: 49

ID Number: 49

Answer: d

References:

PNPS 2.1.6 rev 49 page 10,11 of 13

Provided References:

Explanation:

During the process of resetting a scram if any SDIV hi level channel is not cleared a full scram will result when the mode switch is placed in a position other than REFUEL or SHUTDOWN even with the SDIV HI LEVEL SCRAM BYPASS switch is in BYPASS.

Comments:

K/A: 295006A101

Question Source: New

Importance: RO 4.2 SRO 4.2

Cognitive Level: Comprehension-Analysis

RO Tier: 1 RO Group: 1

Difficulty Level: 3.5

SRO Tier: 1 SRO Group: 1

Exam Level: BOTH

10CFR Ref: 41.7

Objective: O-RO-02-07-07 EO 15

All Questions Key

Question Number: 50

ID Number: 50

The Automatic Depressurization System (ADS) is inhibited during an ATWS to prevent:

- a. a power excursion due to the injection of cold water after pressure drops below 400 psig.
- b. a rapid loss of RPV inventory, that would result in a loss of adequate, core cooling.
- c. adding a considerable amount of energy to the suppression pool before necessary.
- d. causing unusable RPV level indication which will require containment flooding.

All Questions Key

Details for Question Number: 50

ID Number: 50

Answer: a

References:

EOP 2 lesson plan RO 03-04-04 page 19
BWROG app B page B-6-67

Provided References:

EOP 2

Explanation:

BWROG EPGs/SAGs appendix B page B-6-67 states;
ADS initiation may result in large amounts of relatively cold unborated water from low-pressure injection systems. With reactor either critical or shutdown on boron the positive reactivity addition may result in a power excursion large enough to cause substantial core damage.

Comments:

INPO bank number 11441 04/21/1997 NRC exam LasSalle

K/A:	295015K102	Question Source:	Bank
Importance:	RO 3.9 SRO 4.1	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.5	Objective:	O-RO-03-04-04 EO 5

All Questions Key

Question Number: 51

ID Number: 51

Following a fuel element failure a high radiation condition is sensed in the Offgas System. The 13-minute timer has initiated. Assuming the high radiation condition cannot be corrected which one of the following describes the automatic actions that occur when 13 minute timer times out?

- a. Only the four main condenser vapor valves would close.
- b. Only the main stack isolation valve would close.
- c. Both the main stack isolation valve and the 30-minute holdup line drain valve would close. No other valves would automatically close.
- d. The main stack isolation valve ^{and} the 30 minute holdup line drain valve would close ~~And~~ ^{and} the four main condenser vapor valves would all close.

All Questions Key

Details for Question Number: 51

ID Number: 51

Answer: c

References:

PNPS 2.2.93, Rev 46, page 9 of 70

Provided References:

Explanation:

If the 13 minute timer is timed out, the Off-gas Stack Isolation Valve 8-AO-3751 and Off-gas Loop Seal 30 Minute Hold Up Line Drain Valve, 8-AO-3750 will both go closed.

Comments:

TADS number 5587

K/A:	295038K202	Question Source:	Bank
Importance:	RO 3.6 SRO 3.8	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.11	Objective:	O-RO-02-04-11 EO 6h

All Questions Key

Question Number: 52

ID Number: 52

Given the following conditions:

- A loss of feedwater heating results in minor fuel damage.
- The 13 minute Off-Gas timer has started but has not timed out.
- The "RECOMBINER TEMP HI/LO" CP-600L-A4 comes in.
- Recombiner Temperature is checked and is determined to be 1020 degrees F and rising.

Which ONE of the following actions are required by plant procedures?

- a. Commence a normal plant shutdown per 2.1.5.
- b. Manually scram the reactor and enter 2.1.6.
- c. Lower power using Reactor Recirc Pumps and Reverse Order of the Pull Sheet (ROPS) rods until Recombiner Temperature lowers below the alarm setpoint.
- d. Lower power using Reactor Recirc Pumps and Rapid Power Reduction Rods (RPR) rods until Recombiner Temperature lowers below the alarm setpoint.

All Questions Key

Details for Question Number: 52

ID Number: 52

Answer: b

References:

PNPS 2.4.141, Rev 18, page 3 of 12

Provided References:

Explanation:

Immediate Action of 2.4.141 requires a scram if recombining temperature is above 1000 degrees F and a scram has not occurred.

Comments:

K/A:	2950172449	Question Source:	New
Importance:	RO 4.0 SRO 4.0	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	1 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	O-RO-02-04-11 EO 9.e

All Questions Key

Question Number: 53

ID Number: 53

The basis for maintaining torus water temperature within the limits of Technical Specification is to ensure that:

- a. NPSH is maintained on pumps taking a suction from the torus.
- b. thermal stresses on the downcomers are maintained within limits.
- c. the torus can accept the heat input to containment from a safety valve lifting.
- d. the torus can accept the heat input to containment from a LOCA.

All Questions Key

Details for Question Number: 53

ID Number: 53

Answer: d

References:

Technical Specification Bases, page B3/4.7-2

Provided References:

Explanation:

Basis for torus water temperature limits is being able to accept heat input from a LOCA.

Comments:

K/A:	2950132225	Question Source:	New
Importance:	RO 2.5 SRO 3.7	Cognitive Level:	Memory - Fundamental
RO Tier:	1 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 1	Exam Level:	SRO
10CFR Ref:	43.2	Objective:	O-RO-06-01-03, EO 4

All Questions Key

Question Number: 54

ID Number: 54

Given the following conditions:

- A fuel bundle has been dropped while refueling.
- Fuel pool level is normal.
- Main Stack Process Radiation Monitors 1705-18A and B are both reading $4.0E4$ cps and stable.
- Dose rates at the site boundary are 1.4 R/hr.
- Wind direction is from 105 degrees.

Which ONE of the following is the required action?

(Utilize the attached EP-IP-400 Attachment 1)

- a. Declare a Site Area Emergency. Evacuate subareas 1, 12, and 3. Shelter all other subareas.
- b. Declare a General Emergency. Evacuate subareas 1, 12, and 3. Shelter all other subareas.
- c. Declare a Site Area Emergency. Evacuate subareas 1, 12, 2, 3, and 4. Shelter all other subareas.
- d. Declare a General Emergency. Evacuate subareas 1, 12, 2, 3, 4, 6, 7, 8, 9, and 11. Shelter all other subareas.

All Questions Key

Details for Question Number: 54

ID Number: 54

Answer: b

References:

EAL Chart
EP-IP-400 Attachment 1, Rev 9

Provided References:

EAL Chart
EP-IP-400 Attachment 1, Rev 9

Explanation:

See EP-IP-400 Attachment 1 for PARS. Declaration of general emergency is based on exceeding a whole body dose rate at the site boundary of 1 R/hr.

Comments:

K/A:	2950232310	Question Source:	New
Importance:	RO 2.9 SRO 3.3	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 3	Difficulty Level:	3.5
SRO Tier:	1 SRO Group: 1	Exam Level:	SRO
10CFR Ref:	43.5	Objective:	O_RO-07-03-03 EO-5

All Questions Key

Question Number: 55

ID Number: 55

EOP-03 directs that drywell spray be terminated if drywell pressure drops to 0 psig.

What of the following is one of the reasons for this requirement?

- a. To prevent air from being drawn into the primary containment causing the atmosphere to be deinerted.
- b. To maintain a negative pressure in the drywell to torus downcomers.
- c. To maximize the convective cooling within the primary containment.
- d. To ensure that the heated liquid water inside the primary containment will not flash to steam.

All Questions Key

Details for Question Number: 55

ID Number: 55

Answer: a

References:

O-RO-03-04-05 page 13

O-RO-03-04-02, page 76

Provided References:

Explanation:

Basis for securing drywell spray at 0 psig is to not draw air into containment and cause deinertion.

Comments:

INPO Bank Question 7132, Duane Arnold 1996 Exam

K/A:	2950242418	Question Source:	Bank
Importance:	RO 2.7 SRO 3.7	Cognitive Level:	Comprehension-Analysis
RO Tier:	1	RO Group:	1
RO Tier:	1	Difficulty Level:	3.0
SRO Tier:	1	Exam Level:	SRO
SRO Tier:	1	Exam Level:	SRO
10CFR Ref:	43.5	Objective:	O-RO-03-04-05 EO 5

All Questions Key

Question Number: 56

ID Number: 56

Given the following conditions:

- Several fuel bundles have failed as a result of a plant transient.
- An unisolable steam leak in the RCIC Quad then occurs.
- SBGT has automatically started and an RBIS has occurred.
- A malfunction in the SBGT system has resulted in the inability to maintain a negative reactor building differential pressure.
- Reactor pressure is currently 500 psig.
- A team has been dispatched to determine dose rates at the site boundary.

Based on the information available, the current emergency plan classification is ____ (1) ____ and the classification should be upgraded at the point that the whole body dose rate at the site boundary exceeds ____ (2) ____.

- a. (1) Alert
(2) 1000 mrem
- b. (1) Site Area Emergency
(2) 1000 mrem
- c. (1) Alert
(2) 100 mrem
- d. (1) Site Area Emergency
(2) 100 mrem

All Questions Key

Details for Question Number: 56

ID Number: 56

Answer: **b**

References:

EAL Chart

Provided References:

EAL Chart

Explanation:

Site Area Emergency on EAL 6.2.2.3 Steam Leak Outside Primary Containment and temperature above 212 degrees F.

Upgrade to General Emergency on EAL 5.2.2.4 dose rate measurements in excess of 1000 mrem whole body.

Comments:

K/A: 2950352441

Question Source: New

Importance: **RO** 2.3 **SRO** 4.1

Cognitive Level: Comprehension-Analysis

RO Tier: 1 **RO Group:** 3

Difficulty Level: 3.0

SRO Tier: 1 **SRO Group:** 2

Exam Level: SRO

10CFR Ref: 43.5

Objective: O-RO-07-02-01 EO 2

All Questions Key

Question Number: 57

ID Number: 57

The 'A' and 'C' RHR pumps are operating in the Shutdown Cooling Mode. RBCCW flow to the RHR 'A' Heat Exchanger has been established by throttling open on MO-4060A RHR Heat Exchanger 'A' Inlet Valve to a mid-position. It is desired to increase cooldown rate.

Which of the following actions are appropriate in order to increase cooldown rate?

- (1) Throttle closed MO-1001-16A RHR Heat Exchanger Bypass Valve
- (2) Throttle open MO- 4060A RHR Heat Exchanger 'A' Inlet Valve
- (3) Throttle open MO-1001-16A RHR Heat Exchanger Bypass Valve
- (4) Throttle closed MO- 4060A RHR Heat Exchanger 'A' Inlet Valve

- a. Action 1 only
- b. Action 2 only
- c. Action 1 OR Action 2
- d. Action 3 OR Action 4

All Questions Key

Details for Question Number: 57

ID Number: 57

Answer: b

References:

PNPS 2.2.19.1 Rev 5 page 12 of 83 and page 42 of 83

Provided References:

Explanation:

MO-1001-16A must be full open with two RHR pumps running in the A loop. Throttling closed on the MO-4060A will lower cooldown rate. Only option is to Throttle open on MO-4060A.

Comments:

K/A:	205000K503	Question Source:	New
Importance:	RO 2.8 SRO 3.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.4	Objective:	O-RO-02-09-01 EO 15.b

All Questions Key

Question Number: 58

ID Number: 58

Given the following conditions:

- The HPCI system is operating for a system checkout test per PNPS 8.5.4.1.
- During the surveillance a HPCI initiation signal is received.

With no operator action, which ONE of the following valves will reposition as a direct result of the initiation signal?

- a) MO-2301-3 Turbine Supply Valve
- b) MO-2301-8 HPCI Injection Valve #1
- c) MO-2301-9 HPCI Injection Valve #2
- d) MO-2301-36 Torus Suction Valve

All Questions Key

Details for Question Number: 58

ID Number: 58

Answer: b

References:

HPCI Ref Text Page 18

Provided References:

Explanation:

MO-2301-3 opens on initiation but is already open.

MO-2301-8 is closed and gets an open signal on an initiation.

MO-2301-9 receives an open signal on initiation but is already open.

MO-2301-36 is closed. It does not get an open signal on initiation. It will open on a low CST level however which is possible if you are pumping the CST to the vessel. Therefore the questions asks about "direct" result of initiation.

Comments:

K/A:	206000K410	Question Source:	New
Importance:	RO 3.7 SRO 3.8	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-09-03 EO 4

All Questions Key

Question Number: 59

ID Number: 59

The HPCI system is in full flow test. The flow controller is in AUTO. If the MO-2301-10 HPCI Full Flow Test Valve is jogged open for 5 seconds, pump discharge pressure would ____ 1 ____ and turbine RPM would ____ 2 ____.

- a. (1) Increase
(2) Increase
- b. (1) Decrease
(2) Decrease
- c. (1) Increase
(2) Decrease
- d. (1) Decrease
(2) Increase

All Questions Key

Details for Question Number: 59

ID Number: 59

Answer: b

References:

HPCI Reference Text, page 23

Provided References:

Explanation:

Opening the valve in the discharge line will result in less resistance to flow, a lower discharge pressure and lower turbine RPM for a given flow rate.

Comments:

TADS 3788

K/A:	206000K505	Question Source:	Bank
Importance:	RO 3.3 SRO 3.3	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-09-03 EO-14

All Questions Key

Question Number: 60

ID Number: 60

The plant is operating at 100% power when an ATWS occurs concurrent with a loss of both RPS buses and bus A-5. Following are plant conditions:

- RPV Pressure is being maintained by keeping three (3) SRVs open and cycling the 4th SRV
- Suppression Pool Temperature is 110 degrees F and rising
- APRM Downscale Lights are ON.
- The C905 operator has completed his immediate actions steps in EOP-02 as directed by 5.3.35.

Based on plant conditions, boron injection is _____ (1) _____ and _____ (2) _____ available to perform boron injection.

- a. (1) required
(2) only SBLC train 'B' is
- b. (1) not required
(2) both SBLC trains 'A' and 'B' are
- c. (1) required
(2) only SBLC train 'A' is
- d. (1) not required
(2) only SBLC train 'B' is

All Questions Key

Details for Question Number: 60

ID Number: 60

Answer: a

References:

EOP-02

Provided References:

EOP-02

Explanation:

Boron injection is required based on reactor power being above 3%. Each SRV is approximately 10% power. Only SBLC train B is available based on the loss of bus A-5

Comments:

May 2000 NRC Exam

K/A: 211000K201

Question Source: Bank

Importance: RO 2.9 SRO 3.1

Cognitive Level: Comprehension-Analysis

RO Tier: 2 RO Group: 1

Difficulty Level: 3.5

SRO Tier: 2 SRO Group: 1

Exam Level: BOTH

10CFR Ref: 41.6

Objective: O-RO-03-04-04 EO-25

All Questions Key

Question Number: 61

ID Number: 61

The plant was operating at 100% power when a transient occurred resulting in an ATWS. Following are the operator actions taken and plant conditions:

- The SBLC control switch on C905 was taken to the SYS 'A' position, then through OFF to SYS 'B', then through OFF to SYS 'A'.
- The piping just downstream of the 'A' SBLC squib valve is completely obstructed.

Based on plant conditions, which ONE of the following describes the response of the 'A' SBLC pump?

- a. SBLC pump 'A' never injected to the RPV.
- b. SBLC pump 'A' did not inject to the RPV the first time the control switch was placed in SYS 'A' but did inject to the RPV the second time the control switch was placed in SYS 'A'.
- c. SBLC pump 'A' did inject to the RPV the first time the control switch was placed in SYS 'A' but did not inject to the RPV the second time the control switch was placed in SYS 'A'.
- d. SBLC pump 'A' injected to the RPV the first time the control switch was placed in SYS 'A' and also injected to the RPV the second time the control switch was placed in SYS 'A'.

All Questions Key

Details for Question Number: 61

ID Number: 61

Answer: b

References:

SBLC Reference Text Figure 1

Provided References:

Explanation:

SBLC train A will not inject the first time the switch is taken to SYS A since the 'A' squib valve line is obstructed. When the switch is taken to SYS B the 'B' squib will fire. Since the 'A' pump can discharge through the 'B' squib valve, the 'A' pump will inject the second time the control switch is taken to SYS 'A'.

Comments:

May 2000 NRC Exam

K/A:	211000A109	Question Source:	Bank
Importance:	RO 4.0 SRO 4.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	RO
10CFR Ref:	41.6	Objective:	O-RO-02-06-06 EO-8

All Questions Key

Question Number: 62

ID Number: 62

Which ONE of the following is supplied by the Reactor Protection System?

- a. Analog Trip System Cabinets
- b. ADS System Logic Power
- c. Core Spray System Logic Power
- d. SBLC Squib Valves

All Questions Key

Details for Question Number: 62

ID Number: 62

Answer: a

References:

RPS Ref Text Pag 11 of 56

Provided References:

Explanation:

RPS Supplies ATS Logic Cabinets
Squib Valves are off B-17/B-18.
CS Logic and ADS Logic are DC

Comments:

K/A:	212000K202	Question Source:	New
Importance:	RO 2.7 SRO 2.9	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 1	Difficulty Level:	2.0
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-07-07 EO-22g

All Questions Key

Question Number: 63

ID Number: 63

With all shorting links removed 'A' SRM fails upscale. All other SRMs are reading 100 cps.

Which of the following trip systems will trip?

- a. Auto Scram Channel A-1 relays only
- b. Auto Scram Channel A-2 relays only
- c. Manual Scram Channel A-3 relays only
- d. Manual Scram Channel A-3 relays and Manual Scram Channel B-3 relays

All Questions Key

Details for Question Number: 63

ID Number: 63

Answer: d

References:

P&ID M1N19-7, 20-7, 17-8, 18-8

Provided References:

Explanation:

With the shorting links removed, any SRM hi hi will give a full reactor scram by tripping the manual scram channels A-3 and B-3

Comments:

K/A:	212000A302	Question Source:	New
Importance:	RO 3.2 SRO 3.5	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-07-07 EO 22.b

All Questions Key

Question Number: 64

ID Number: 64

A TIP trace is being performed when a High Drywell Pressure signal occurs. Select the expected automatic action.

- a. The shear valve fires with the detector still in the core.
- b. The ball valve closes with the detector still in the core.
- c. The detector withdraws into its shield and the ball valve closes.
- d. The detector withdraws into its shield and the shear valve fires.

All Questions Key

Details for Question Number: 64

ID Number: 64

Answer: c

References:

TIP Reference Text, page 20

Provided References:

Explanation:

On any Group II signal (2.2 psig DW pressure of +12 Reactor Water Level) the detector will withdraw, then the ball valve will close.

Comments:

November 2000 NRC Exam

K/A:	215001A202	Question Source:	Bank
Importance:	RO 2.9 SRO 3.0	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 3	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 3	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-07-08 EO-04

All Questions Key

Question Number: 65

ID Number: 65

Given the following conditions:

- The Mode Switch is in STARTUP.
- IRM 'A' detector is being withdrawn and has just left its full in position.

The result will be a ____ (1) ____ which can be bypassed by ____ (2) ____.

- a. (1) Half scram
(2) placing the Mode Switch in RUN
- b. (1) Half scram
(2) clearing the downscale trip on APRM Channel 'A'
- c. (1) Control rod withdrawal block
(2) placing the Mode Switch in RUN
- d. (1) Control rod withdrawal block
(2) clearing the downscale trip on APRM Channel 'A'

All Questions Key

Details for Question Number: 65

ID Number: 65

Answer: c

References:

2.2.65, Rev 16, page 7 of 17

Provided References:

Explanation:

IRM Detector Not in Startup Position gives a rod block if the detector is not fully inserted and the mode switch is in any position other than RUN.

Comments:

K/A:	215003A405	Question Source:	New
Importance:	RO 3.4 SRO 3.4	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-07-02, EO 10

All Questions Key

Question Number: 66

ID Number: 66

Given the following conditions:

- A reactor startup is being performed.
- 'G' IRM Detector Drive Motor has failed with the detector fully inserted.
- Power ascension continues per PNPS 2.1.1.
- IRM Channel 'G' is NOT bypassed with the joystick.
- All other equipment is operating normally.

With the plant at 100% power, the IRM Hi Hi trip:

- a. will be present causing a half scram.
- b. will be present causing a rod block but.
- c. will be bypassed since the Mode Switch is in RUN and APRM Channel 'E' is not downscale.
- d. will be bypassed since the Mode Switch is in RUN and APRM Channel 'C' is not downscale.

All Questions Key

Details for Question Number: 66

ID Number: 66

Answer: c

References:

2.2.65, Rev 16, page 7 of 17

Provided References:

Explanation:

IRM Hi Hi trip (120/125 of full scale) is bypassed with the Mode Switch in Run and the companion APRM (Channel E) NOT downscale.

Comments:

K/A:	215003A203	Question Source:	New
Importance:	RO 2.9 SRO 3.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 2	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-07-02 EO-10

All Questions Key

Question Number: 67

ID Number: 67

Given the following conditions:

- A plant startup is in progress.
- A second licensed RO is stationed to verify compliance with Banked Position Withdrawal Sequence (BPWS).
- The IRMs are reading 12 on Range 9 (0-40 scale).
- At this point the RWM fails.

Under these conditions, the RWM:

- a. is not required to be operable.
- b. is required to be operable. The reactor must be scrammed.
- c. is required to be operable. A normal shutdown must be conducted.
- d. is required to be operable. Startup may continue provided startup with the RWM inoperable has not been conducted within the preceding 12 month.

All Questions Key

Details for Question Number: 67

ID Number: 67

Answer: d

References:

TS 3.3.F

PNPS 2.2.65 Rev 16, page 6 of 17

Provided References:

TS 3.3.F

Explanation:

A reading of 100 on IRM range 10 is 640 MW. A reading of 12 on range 10 (which is also 12 on range 9) will by calculation give a power level of approximately 4% power. The RWM is required to be operable below 20% power. Startup may continue provided a second operator verifies compliance with BPWS (second operator normally stationed during startup) and a startup with RWM inoperable has not been conducted within the previous 12 months.

Comments:

Amendment 186 to TS was a complete rewrite of this section of TS and allows the startup to continue under these conditions. Previously, this would not have been allowed.

K/A:	2150032233	Question Source:	New
Importance:	RO 2.5 SRO 2.9	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.5
SRO Tier:	2 SRO Group: 2	Exam Level:	SRO
10CFR Ref:	43.6	Objective:	O-RO-02-07-02 EO-16

All Questions Key

Question Number: 68

ID Number: 68

Which of the following is independent of the Reactor Mode Switch position?

- a. SRM Upscale Scram
- b. SRM Downscale Rod Block
- c. SRM Upscale Rod Block
- d. SRM Detector NOT Full In Rod Block

All Questions Key

Details for Question Number: 68

ID Number: 68

Answer: a

References:

2.2.64, Rev 19, Page 7 of 19

Provided References:

Explanation:

All SRM rod blocks are bypassed if the mode switch is in run. SRM Hi Hi Scram is bypassed only by RPS shorting links.

Comments:

INPO Exam Bank Question ID 11882, NMP-1, 7/8/96

K/A:	215004K101	Question Source:	Bank
Importance:	RO 3.6 SRO 3.7	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-07-01 EO-6

All Questions Key

Question Number: 69

ID Number: 69

Which ONE of the following describes the response of the SRM system to a gamma flux?

The gamma flux will:

- a. not cause any response in the detector since it is a fission chamber.
- b. cause a smaller response that can be amplified then removed by a pulse height discriminator.
- c. cause a response that will cause indicated source range counts to rise but will be insignificant when compared with neutron flux.
- d. not reach the detector due to the shielding around the detector.

All Questions Key

Details for Question Number: 69

ID Number: 69

Answer: b

References:

PNPS 2.2.64, Rev 19, Page 6 of 19

Provided References:

Explanation:

SRM detectors will generate a pulse from a gamma, however this pulse is much smaller than a neutron pulse. After going through a pre-amplifier, the signal goes to a pulse height discriminator which filters out the gamma pulse.

Comments:

TADS 5465

K/A:	215004K501	Question Source:	Bank
Importance:	RO 2.6 SRO 2.6	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.2	Objective:	O-RO-02-7-01 EO 3.d

All Questions Key

Question Number: 70

ID Number: 70

The plant is operating at 100% power when a trip of the 'A' Reactor Recirc Pump occurs.

Which ONE of the following states the expected response of the APRM flow converters?

- a. Both flow converters will be downscale.
- b. The 'A' flow converter output will be lower than the 'B' flow converter output.
- c. The 'B' flow converter output will be lower than the 'A' flow converter output.
- d. Both flow converters will have an approximately equal output which will be approximately half the original output value.

All Questions Key

Details for Question Number: 70

ID Number: 70

Answer: d

References:

APRM Ref Text pages 8-9

Provided References:

Explanation:

Both recirc loops provide input to both flow converters, therefore the response of both flow converters will be identical. A trip of one pump reduces output by approximately half.

Comments:

TADS 5822

K/A: 215005K116

Question Source: Bank

Importance: RO 3.3 SRO 3.4

Cognitive Level: Memory - Fundamental

RO Tier: 2 **RO Group:** 1

Difficulty Level: 2.5

SRO Tier: 2 **SRO Group:** 1

Exam Level: BOTH

10CFR Ref: 41.6

Objective: O-RO-02-07-04 EO 5.d

All Questions Key

Question Number: 71

ID Number: 71

An SRV has stuck open. In accordance with station procedures, breaker 1 on Panel D-4 and breaker 1 on Panel D-5 is ordered opened.

With these breakers open:

- a. all SRVs could still be operated manually from C903.
- b. only the 'A' and 'C' SRVs could be operated manually from C903.
- c. no SRVs could be operated manually from C903.
- d. Only the 'B' and 'D' SRVs could be operated manually from C903.

All Questions Key

Details for Question Number: 71

ID Number: 71

Answer: c

References:

ADS Reference Text Page 20

Provided References:

Explanation:

The solenoid valves which are energized when the switches on C903 are taken to open are powered normally from panel D-4 with backup from D-5. If breaker 1 on both D-4 and D-5 are opened, the SRVs cannot be opened manually from C903.

Comments:

TADS 5634

K/A: 218000K302

Question Source: Bank

Importance: RO 4.5 SRO 4.6

Cognitive Level: Memory - Fundamental

RO Tier: 2 **RO Group:** 1

Difficulty Level: 3.0

SRO Tier: 2 **SRO Group:** 1

Exam Level: BOTH

10CFR Ref: 41.7

Objective: O-RO-02-09-05 EO 17

All Questions Key

Question Number: 72

ID Number: 72

Which ONE of the following describes the effect on the Suppression Pool Cooling Mode of RHR if ECCS Keep Full is lost?

- a. The RHR pumps may become air bound and overheat.
- b. Damage to the discharge piping due to water hammer may occur when RHR pumps are started.
- c. Damage to the RHR pumps due to a loss of cooling and lubrication to the pump seals.
- d. The RHR Heat Exchanger Bypass Valves MO-1001-16A(B) will have longer than normal stroke time due to excessive differential pressure.

All Questions Key

Details for Question Number: 72

ID Number: 72

Answer: **b**

References:

TS Bases for 3/4.5.H

Provided References:

Explanation:

Per TS Bases, the discharge line is kept filled in order to minimize damage to piping when pumps are started.

Comments:

K/A: 219000K604

Question Source: New

Importance: **RO** 2.9 **SRO** 3.0

Cognitive Level: Memory - Fundamental

RO Tier: 2 **RO Group:** 2

Difficulty Level: 3.0

SRO Tier: 2 **SRO Group:** 2

Exam Level: BOTH

10CFR Ref: 41.7

Objective: O-RO-02-09-01 EO-15.h

All Questions Key

Question Number: 73

ID Number: 73

The 'A' RHR pump is operating in the Shutdown Cooling Mode. The flow limit for this RHR pump is _____ (1) _____ GPM which is based on _____ (2) _____.

- a. (1) 5100 GPM
(2) preventing vibrational damage to MO-1001-34A, A Torus Cooling/Spray Block Vlv
- b. (1) 5100 GPM
(2) preventing runout of the RHR pump
- c. (1) 5600 GPM
(2) preventing vibrational damage to MO-1001-34A, A Torus Cooling/Spray Block Vlv
- d. (1) 5600 GPM
(2) preventing runout of the RHR pump

All Questions Key

Details for Question Number: 73

ID Number: 73

Answer: d

References:

PNPS 2.2.19.1, Rev 5, page 15 of 83

Provided References:

Explanation:

5600 GPM is the limit for pump flow rate in order to protect the pump. 5100 GPM is the required flow rate through one heat exchanger to supply design requirements.

Comments:

TADS #3105 modified

K/A:	219000K104	Question Source:	Bank Modified
Importance:	RO 3.9 SRO 3.9	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 2	Exam Level:	RO
10CFR Ref:	41.10	Objective:	O-RO-02-09-01 EO 7

All Questions Key

Question Number: 74

ID Number: 74

Testing is being performed on the Drywell to Torus Vacuum Breakers when a loss of Y-1 occurs. One vacuum breaker is currently open.

Which ONE of the following describes the response of the Drywell to Torus Vacuum Breakers as a result of the loss of Y-1?

- a. The open vacuum breaker will remain open and cannot be closed. The other vacuum breakers will be unaffected and will respond normally to a high differential pressure condition occur should one occur.
- b. The open vacuum breaker will remain open and cannot be closed. The other vacuum breakers will remain closed and will not respond to a high differential pressure should one occur.
- c. The open vacuum breaker will go closed. All vacuum breakers will respond normally to a high differential pressure condition should one occur.
- d. The open vacuum breaker will go closed. None of the vacuum breakers will respond to a high differential pressure condition should one occur.

All Questions Key

Details for Question Number: 74

ID Number: 74

Answer: c

References:

Primary Containment Structure Ref Text page 12 and 21

Provided References:

Explanation:

Y-1 supplies the solenoid to test the drywell to torus vacuum breakers. The solenoid energizes to test the vacuum breakers. On loss of Y-1 the solenoid will de-energize and the vacuum breaker will go closed. All vacuum breakers will then respond normally to a high differential pressure condition.

Comments:

K/A:	223001K611	Question Source:	New
Importance:	RO 3.0 SRO 3.2	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	

All Questions Key

Question Number: 75

ID Number: 75

An error by an I&C Technician results in HPCI receiving a spurious start signal. When flow reaches 400 GPM, the operator inhibits HPCI operation by holding the trip pushbutton until turbine speed reaches 0 RPM and then places the Aux Oil Pump in Pull-to-lock. The operator takes no other action.

Which ONE of the following explains whether the CST will drain to the Suppression Pool via the MO-2301-14 HPCI PUMP MIN FLOW Valve?

- a. The CST will NOT drain to the torus since the MO-2301-14 Valve will receive a close signal as a direct result of the turbine trip.
- b. The CST will drain to the torus since the MO-2301-14 Valve will have an open signal before the turbine trip and will remain open until the CST low level condition causes it to close.
- c. The CST will drain to the torus since the MO-2301-14 Valve will have an open signal before the turbine trip and will remain open until the Torus Hi level condition causes it to close.
- d. The CST will NOT drain to the torus since the MO-2301-14 has no automatic opening feature.

All Questions Key

Details for Question Number: 75

ID Number: 75

Answer: a

References:

HPCI Reference Text Page 30

Provided References:

Explanation:

MO-2301-14 gets an auto open signal upon initiation signal. It will close when flow goes above 800 GPM. MO-2301-14 auto closes on a turbine trip to prevent draining the CST to the suppression pool.

Comments:

K/A:	223001A301	Question Source:	New
Importance:	RO 3.4 SRO 3.5	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-09-03 EO 7

All Questions Key

Question Number: 76

ID Number: 76

Given the following conditions:

- A loss of feed has occurred.
- Reactor water level dropped to -49 inches and is slowly recovering with HPCI and RCIC.
- Reactor pressure is 900 psig.
- You are directed to verify initiations and isolations per EOP-01.

Which ONE of the following valves is out of position for the given plant conditions and should be repositioned?

- a. MO-1001-28A LOOP 'A' LPCI INJECTION THROTTLE VALVE #1 is closed.
- b. MO-1401-25A LOOP 'A' CORE SPRAY INJECTION VALVE #2 is closed.
- c. AO-203-1A MAIN STEAM LINE 'A' INBD ISOL VLV is open.
- d. MO-1301-16 RCIC INBD ISOL VLV is open.

All Questions Key

Details for Question Number: 76

ID Number: 76

Answer: c

References:

PNPS 2.2.125.1 Rev 11, page 7 and 32 of 34

Provided References:

Explanation:

MO-1001-28A would originally be open but should have closed on LPCI loop select at -46 inches. MO-1401-25B will be closed until you reached 400 psig. MO-1301-16 should have opened due to RCIC initiation at -46 inches. AO-203-1A should have closed on Group I isolation signal at -46 inches.

Comments:

K/A:	223002K403	Question Source:	New
Importance:	RO 3.5 SRO 3.6	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 1	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.0	Objective:	O-RO-02-08-10 EO 3 and 4

All Questions Key

Question Number: 77

ID Number: 77

A Group I isolation signal was generated and the inboard MSIVs failed to close. The MSIV INBD Logic light on C905 is illuminated. Which ONE of the following would be effective in closing the inboard MSIVs?

- a. Opening the breaker on panel Y-3 for MSIV solenoid power. The breaker on panel D-6 for MSIV solenoid power need not be opened.
- b. Opening the breaker on panel D-6 for MSIV solenoid power. The breaker on panel Y-3 for MSIV solenoid power need not be opened.
- c. Opening the breaker on panel D-6 for MSIV solenoid power and opening the breaker on panel Y-3 for MSIV solenoid power.
- d. Opening the breaker on panel D-5 for MSIV solenoid power and opening the breaker on panel Y-4 for MSIV solenoid power.

All Questions Key

Details for Question Number: 77

ID Number: 77

Answer: c

References:

PCIS Reference Text pages 11, 37, and 42

Provided References:

Explanation:

Both AC and DC solenoids must be de-energized to close MSIVs. AC Solenoids on Inboard MSIVs are powered from Y-3. DC Solenoids on Inboard MSIVs are powered from D-6. AC Solenoids on Outboard MSIVs are powered from Y-4. DC Solenoids on Outboard MSIVs are powered from D-5.

Comments:

K/A:	223002A402	Question Source:	New
Importance:	RO 3.9 SRO 3.8	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-08-10 EO 12.j and 12.k

All Questions Key

Question Number: 78

ID Number: 78

Given the following conditions:

- A small break LOCA occurs in the drywell.
- 'A' Loop of RHR is aligned for drywell spray.
- Drywell pressure is currently 6 psig and slowly lowering.
- Reactor pressure is 410 psig and slowly lowering.
- RPV level is -44 inches and slowly lowering.

Without further operator action, RHR pump flow will be aligned for drywell spray until:

- a. reactor pressure reaches 400 psig.
- b. RPV level reaches -46 inches.
- c. RPV level reaches -150 inches.
- d. eleven (11) minutes elapse after reactor pressure reaches 400 psig.

All Questions Key

Details for Question Number: 78

ID Number: 78

Answer: c

References:

2.2.19.5 Rev 8, Page 20 of 27
RHR Ref Text page 44 and 45

Provided References:

Explanation:

Drywell Spray Valves MO-1001-23 and 26 will close when 2/3 core coverage is reached (-150 inches) unless the 2/3 Core Coverage Override is operated. Since level was not less than 2/3 core coverage when drywell spray was initiated the 2/3 Core Coverage Override has not been operated. Therefore, the drywell spray valves will close when -150 inches is reached.

Comments:

K/A:	226001K403	Question Source:	New
Importance:	RO 2.9 SRO 3.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2	RO Group:	2
		Difficulty Level:	3.0
SRO Tier:	2	Exam Level:	RO
		Objective:	O-RO-02-09-01 EO 14
10CFR Ref:	41.7		

All Questions Key

Question Number: 79

ID Number: 79

Given the following conditions:

- Fuel is being moved between the vessel and the fuel pool.
- Water clarity in the fuel pool/reactor cavity is becoming a problem.

In order to improve the clarity of the fuel pool/reactor cavity water the Fuel Pool Cooling Demineralizer should be _____(1)_____ and the Fuel Pool Cooling Filter should be _____(2)_____.

- a. (1) bypassed
(2) bypassed
- b. (1) bypassed
(2) in service
- c. (1) in service
(2) bypassed
- d. (1) in service
(2) in service

All Questions Key

Details for Question Number: 79

ID Number: 79

Answer: d

References:

PNPS 2.2.85Rev 58, page 7 of 108

Provided References:

Explanation:

Clarity is maintained by removing fission and corrosion products through use of the filter and demineralizer.

Comments:

K/A: 233000K303

Question Source: New

Importance: RO 2.6 SRO 2.8

Cognitive Level: Memory - Fundamental

RO Tier: 2 **RO Group:** 3

Difficulty Level: 2.5

SRO Tier: 2 **SRO Group:** 3

Exam Level: RO

10CFR Ref: 41.4

Objective: None listed

All Questions Key

Question Number: 80

ID Number: 80

The Reactor Flow Limit limits total steam flow from the reactor vessel by limiting the:

- a. control valve relay position only.
- b. bypass valve relay position only.
- c. output from the pressure control unit (output from EPR, MPR, and BVOJ).
- d. output from the speed control unit (output from speed/load and load limit).

All Questions Key

Details for Question Number: 80

ID Number: 80

Answer: c

References:

MHC Reference Text page 24 and Figure 8

Provided References:

Explanation:

The EPR, MPR and BVOJ make up the pressure control unit. The output of this unit is limited by the Reactor Flow Limit.

Comments:

TADS #5209

K/A:	241000A105	Question Source:	Bank
Importance:	RO 3.5 SRO 3.6	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-05-04 EO 13.o

All Questions Key

Question Number: 81

ID Number: 81

Given the following conditions:

- A loss of vacuum is in progress.
- The turbine has tripped and the reactor has scrammed.
- Pressure control is on the Bypass Valves.
- At 7" of Hg vacuum, the Bypass Valves fail to go closed.

Which ONE of the following would result as pressure continues to rise in the Main Condenser?

- a. MSIVs would go closed on positive pressure in the Main Condenser.
- b. Rupture disks on the Low Pressure Exhaust Hood would relieve releasing steam to the turbine building.
- c. Gland Seal Condenser Drain Tank discharge would be re-routed to radwaste.
- d. MO-1201-78 REJECT TO CONDENSER BLOCK VALVE will be interlocked closed.

All Questions Key

Details for Question Number: 81

ID Number: 81

Answer: b

References:

Main Turbine Reference Text, page 17

Provided References:

Explanation:

Main Condenser rupture disk will blow and release steam to the turbine building.

Comments:

K/A:	2410002311	Question Source:	New
Importance:	RO 2.7 SRO 3.2	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	RO
10CFR Ref:	41.4	Objective:	O-RO-02-05-01 EO 4

All Questions Key

Question Number: 82

ID Number: 82

A reactor scram will result in starting a 30 second timer to trip the Main Turbine. The signal to start this timer comes from:

- a. the Mode Switch.
- b. the 'A' backup scram valve.
- c. the scram pilot valve air header.
- d. the Main Generator reverse power relays.

All Questions Key

Details for Question Number: 82

ID Number: 82

Answer: **b**

References:

RPS Reference Text page 11

Provided References:

Explanation:

The 30 second timer comes off energizing the 'A' Backup Scram Valve. This will trip the turbine. Pilgrim has no reverse power trips on the turbine or generator.

Comments:

K/A:	245000A204	Question Source:	New
Importance:	RO 3.7 SRO 3.8	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-07-07 EO 3.f

All Questions Key

Question Number: 83

ID Number: 83

During rated power operation, a loss of 125 VDC panel D-6 occurs resulting in a reactor scram.

Under these conditions the main turbine:

- a. will automatically trip as a direct result of the loss of D-6.
- b. must be manually tripped at the Front Standard.
- c. may be manually tripped from Panel C-2 using the Master Trip Pushbuttons.
- d. may be manually tripped from Panel C-2 using the Vacuum #2 Pushbutton.

All Questions Key

Details for Question Number: 83

ID Number: 83

Answer: **b**

References:

PNPS 5.3.13, Rev 20, page 5 of 8

Provided References:

Explanation:

D-6 supplies Main turbine controls. Loss of D-6 means that the turbine must be tripped from the front standard.

Comments:

TADS #5866 Modified

K/A: 245000K109

Question Source: Bank Modified

Importance: **RO** 2.7 **SRO** 2.7

Cognitive Level: Comprehension-Analysis

RO Tier: 2 **RO Group:** 2

Difficulty Level: 3.0

SRO Tier: 2 **SRO Group:** 2

Exam Level: RO

10CFR Ref: 41.7

Objective: O-RO-02-05-01 EO 15.e

All Questions Key

Question Number: 84

ID Number: 84

Given the following conditions:

- The plant is operating at 100% power.
- The Startup Transformer Breaker to Bus A-2 152-204 has been taken out of service.
- The RFP Trip Sequence Enable Switch is ON.
- The RFP Trip Sequence Select Switch is in the ABC position.
- A manual reactor scram is then initiated.
- No other operator action is taken

Assuming reactor water level stays in a 0 inch to +40 inch band, which Condensate Pumps and Reactor Feed Pumps will be running one minute after the reactor scram?

- a. 'B' Condensate Pump and 'C' Reactor Feed Pump
- b. 'C' Condensate Pump and 'B' Reactor Feed Pump
- c. 'A' and 'C' Condensate Pumps and 'B' Reactor Feed Pump
- d. 'B' Condensate Pump and 'A' and 'C' Reactor Feed Pumps

All Questions Key

Details for Question Number: 84

ID Number: 84

Answer: a

References:

2.2.96 Rev 69 pages 12 and 58 of 218

Provided References:

Explanation:

Loss of A-2 will occur due to the UAT to A-2 breaker being OOS. 30 seconds after the scram, the turbine will trip and A-2 will lose power. Bus A-2 powers 'A' and 'C' Condensate Pump and 'B' RFP. Since the trip selector is on and in the ABC position, the RFPs will trip in the A then B then C sequence as you lose Condensate Pumps. You lost two condensate pumps, therefore A and B RFPs should trip. A RFP had power but tripped because you lost two Condensate Pumps. B RFP lost power since A-2 was lost.

Comments:

K/A:	256000A210	Question Source:	New
Importance:	RO 3.1 SRO 3.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2	RO Group:	2
		Difficulty Level:	3.5
SRO Tier:	2	Exam Level:	BOTH
		SRO Group:	3
10CFR Ref:	41.7	Objective:	O-RO-02-04-02 EO 9.a and 9.b

All Questions Key

Question Number: 85

ID Number: 85

The plant is operating at 100% power when a loss of feedwater heating occurs.

Which of the following explains the effect on MFLCPR?

- a. Inlet subcooling decreases. This causes critical power to increase and reactor power to decrease which results in MFLCPR decreasing.
- b. Inlet subcooling decreases. This causes critical power and reactor power to increase. However critical power increases more than reactor power increases, therefore MFLCPR will increase.
- c. Inlet subcooling increases. This causes critical power to decrease and reactor power to increase which results in MFLCPR increasing.
- d. Inlet subcooling increases. This causes critical power and reactor power to increase. However critical power increases less than reactor power increases, therefore MFLCPR will increase.

All Questions Key

Details for Question Number: 85

ID Number: 85

Answer: d

References:

O-RO-01-03-09, pages 33-37 of 64

Provided References:

Explanation:

A loss of feedwater heating will cause critical power and bundle power to increase. However the bundle power is the dominant change. This will cause CPR to decrease. A decrease in CPR will cause an increase in MFLCPR.

Comments:

TADS #6138 Modified

K/A:	259001A102	Question Source:	Bank Modified
Importance:	RO 3.2 SRO 3.3	Cognitive Level:	Comprehension-Analysis
RO Tier:	2	RO Group:	1
SRO Tier:	2	Difficulty Level:	3.5
SRO Group:	2	Exam Level:	RO
10CFR Ref:	41.2	Objective:	O-RO-02-04-09 EO 3

All Questions Key

Question Number: 86

ID Number: 86

It is desired to operate the Canal Station Line 342 Terminal Disconnect (T900). Which ONE of the following sets of breakers are required to be open before operating this disconnect?

- a. ACB 103 and ACB 104
- b. ACB 102 and ACB 105
- c. ACB 104 and ACB 105
- d. ACB 102 and ACB 103

All Questions Key

Details for Question Number: 86

ID Number: 86

Answer: a

References:

PNPS 2.2.1, Rev 20, Page 12 of 43

Provided References:

Explanation:

Canal Station Line 342 comes off between ACBs 103 and 104

Comments:

K/A:	262001A208	Question Source:	New
Importance:	RO 3.3 SRO 3.6	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	None listed

All Questions Key

Question Number: 87

ID Number: 87

The plant is operating at power when a loss of B-6 occurs. Which ONE of the following describes the effect on panel Y-2?

- a. Y-2 will be de-energized until B-6 is repowered.
- b. Y-2 will be de-energized until manual action is taken to start the Vital MG Set DC Motor.
- c. The Vital MG Set DC Motor will maintain the Vital MG Set running and powering Y-2.
- d. Y-12 will switch Y-2 to B-15.

All Questions Key

Details for Question Number: 87

ID Number: 87

Answer: c

References:

5.3.32, Rev 8, Page 2 of 11

Provided References:

Explanation:

The Vital MG set DC motor cannot start the MG set but can keep it running. No manual action is necessary. Y-12 only transfers Y-2 if the Vital MG set is not available.

Comments:

K/A:	263000A301	Question Source:	New
Importance:	RO 3.2 SRO 3.3	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-01-07 EO 5.a

All Questions Key

Question Number: 88

ID Number: 88

Given the following plant conditions:

- A loss of Bus D-5 occurs.
- The reactor is subsequently scrammed.
- No other operator action is taken.

One minute after the scram the status of 4KV Emergency Buses will be:

- a. A-5 and A-6 de-energized.
- b. A-5 energized and A-6 de-energized.
- c. A-5 de-energized and A-6 energized.
- d. A-5 and A-6 energized.

All Questions Key

Details for Question Number: 88

ID Number: 88

Answer: b

References:

5.3.12, Rev 26, page 5 of 18

Provided References:

Explanation:

D-5 supplies DC control power to the breakers to bus A-6 rendering them unable to close or trip. The A-6 will stay powered from the UAT as long as it is supplying power. The will continue for 30 seconds until the turbine trip at which time the A-6 bus will be de-energized.

Comments:

K/A:	263000K201	Question Source:	New
Importance:	RO 3.1 SRO 3.4	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 2	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-01-02 EO 8

All Questions Key

Question Number: 89

ID Number: 89

Given the following conditions:

- The plant is shutdown.
- Buses A-5 and A-6 are being powered by the Startup Transformer.
- The Startup Transformer is then lost.
- The 'B' EDG output breaker closes 8.5 seconds after the loss of the SUT.
- The 'A' EDG output breaker closes 11 seconds after the loss of the SUT.

Under these conditions, B-6 was de-energized when the Startup Transformer was lost and:

- a. was re-energized by the closure of the 'A' EDG output breaker.
- b. will remain de-energized until manual action is taken to re-energize B-6.
- c. was re-energized by the closure of the 'B' EDG output breaker. It then auto transferred to B-1 when the 'A' EDG output breaker closed.
- d. was re-energized by the closure of the 'B' EDG output breaker. Manual operation would be required to transfer B-6 back to B-1.

All Questions Key

Details for Question Number: 89

ID Number: 89

Answer: d

References:

PNPS 2.2.7, Rev 22, Page 10 of 29

Provided References:

Explanation:

B-1 is powered from A-5 which is powered from the SUT and 'A' EDG. B-2 is powered from A-6 which is powered from the SUT and 'B' EDG. B-6 is normally powered from B-1, with B-2 as the alternate. If power is lost to both B-1 and B-2 (such as would happen on a loss of A-5 and A-6 due to a loss of the SUT) all breakers to B-6 from B-1 and B-2 will open. When power is regained from either source, B-6 will transfer to that source automatically. Manual action is then required to place B-6 on the other power source if it returns.

Comments:

K/A:	264000K303	Question Source:	New
Importance:	RO 4.1 SRO 4.2	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-01-06 EO 6

All Questions Key

Question Number: 90

ID Number: 90

With the 'A' EDG in a normal standby lineup, a loss of D-16 occurs. Which ONE of the following describes the effect on the 'A' EDG?

- a. The 'A' EDG would automatically start.
- b. The 'A' EDG would not respond to any auto start signals that may be generated but could be manually started from C-3.
- c. The 'A' EDG would not respond to any auto start signals that may be generated and if the EDG is needed it must be started locally.
- d. The 'A' EDG would not respond to any auto start signals that may be generated and cannot be manually started.

All Questions Key

Details for Question Number: 90

ID Number: 90

Answer: c

References:

PNPS 5.3.11, Rev 29, Page 3 of 19

PNPS 2.4.16, Rev 27, Page 14 of 46

Provided References:

Explanation:

A loss of D-16 will result in the diesel not responding to auto start signals if shutdown and a loss of the ability to shutdown remotely if running. The diesel must be started by locally manipulating the air start motors and field flash.

Comments:

K/A:	264000K609	Question Source:	New
Importance:	RO 3.3 SRO 3.5	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-09-06 EO 26

All Questions Key

Question Number: 91

ID Number: 91

The Extended Test System is designed to prevent ____ (1) _____. When this system is injecting hydrogen, radiation levels will increase by a factor of ____ (2) ____ in the associated areas at 100 percent power and full gas flow.

- a. (1) Intergranular stress corrosion cracking
(2) five
- b. (1) Intergranular stress corrosion cracking
(2) two
- c. (1) chloride stress corrosion
(2) five
- d. (1) chloride stress corrosion
(2) two

All Questions Key

Details for Question Number: 91

ID Number: 91

Answer: a

References:

PNPS 10.2.4 rev 20 page 9 of 72

Hydrogen water Chemistry Control System page 31

Provided References:

Explanation:

Hydrogen injection via the Extended test system is designed to mitigate Intergranular stress corrosion cracking. Dose rates will increase approximately five times normal levels in associated areas at 100 % and full gas flow.

Comments:

K/A:	272000K501	Question Source:	New
Importance:	RO 3.2 SRO 3.5	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.11	Objective:	O-RO-02-04-05 EO 6d

All Questions Key

Question Number: 92

ID Number: 92

Given the following conditions:

- A LOCA is in progress.
- Fire Water has been crosstied with RHR Loop 'A'.
- RHR Loop 'B' has been isolated from RHR Loop 'A'.
- RHR Pumps 'A' and 'C' are unavailable.
- RHR Valves have been aligned to allow Fire Water to inject via the LPCI Injection Header. All other RHR Valves are in a normal standby lineup.
- RPV pressure has just dropped below the shutoff head of the Motor Driven Fire Water Pump and the pump is just starting to inject.

Under these conditions, the flow of fire water through the 'A' Loop of RHR

_____ (1) _____ be indicated on the RHR TOTAL FLOW Indicator for the 'A' RHR Loop on C903 and _____ (2) _____ be indicated on CNTMT SPRAY FLOW Indicator for the 'A' RHR Loop on C903.

- a. (1) will
(2) will
- b. (1) will not
(2) will
- c. (1) will
(2) will not
- d. (1) will not
(2) will not

All Questions Key

Details for Question Number: 92

ID Number: 92

Answer: c

References:

M-241

Provided References:

Explanation:

Flow from Fire Water comes in through the RHR Cross tie header. It will then go through the LPCI injection header. It will show up as RHR total flow but not as Containment Spray Flow.

Comments:

K/A:	286000A105	Question Source:	New
Importance:	RO 3.2 SRO 3.2	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.4	Objective:	O-RO-02-09-01 EO 15.1

All Questions Key

Question Number: 93

ID Number: 93

Given the following conditions:

- The Jockey Fire Pump has been taken out of service.
- As a result, the Electric Motor Driven Fire Pump Control Switch is taken to the MANUAL/STOP position.

Which ONE of the following describes the Electric Motor Driven Fire Pump response to a lowering system pressure and subsequent increase in pressure?

- a. The Electric Motor Driven Fire Pump will start when system pressure lowers to 95 psig and will automatically stop 10 minutes later.
- b. The Electric Motor Driven Fire Pump will start when system pressure lowers to 110 psig and will automatically stop 10 minutes later.
- c. The Electric Motor Driven Fire Pump will start when system pressure lowers to 95 psig and must be manually stopped.
- d. The Electric Motor Driven Fire Pump will start when system pressure lowers to 110 psig and must be manually stopped.

All Questions Key

Details for Question Number: 93

ID Number: 93

Answer: c

References:

2.2.25 Rev 43, Page 11 of 55

Provided References:

Explanation:

In Manual/Stop, the Electric Fire Pump will auto start at 95 psig system pressure and must be manually shutdown.

Comments:

TADS 3577 Modified

K/A:	286000A405	Question Source:	Bank Modified
Importance:	RO 3.3 SRO 3.3	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 2	Exam Level:	RO
10CFR Ref:	41.4	Objective:	O-NL-03-07-03 EO 5

All Questions Key

Question Number: 94

ID Number: 94

A temperature of 37 degrees F is sensed downstream of the heating coil for a Reactor Building Supply Fan.

Which ONE of the following describes the effect on Reactor Building Ventilation?

- a. The affected Reactor Building Supply Fan trips and cannot be restarted until the freeze alarm is locally reset. The associated Reactor Building Exhaust Fan for that zone will remain running.
- b. The affected Reactor Building Supply Fan and the associated Reactor Building Exhaust Fan for that zone will trip. The Reactor Building Supply Fan cannot be restarted until the freeze alarm is locally reset and the associated Reactor Building Exhaust Fan for that zone is restarted.
- c. The affected Reactor Building Supply Fan trips and will automatically restart when temperature downstream of the heating coil reaches 45 degrees F. The associated Reactor Building Exhaust Fan for that zone will remain running.
- d. The affected Reactor Building Supply Fan and the associated Reactor Building Exhaust Fan for that zone will trip. The Reactor Building Supply Fan and the associated Reactor Building Exhaust Fan for that zone will automatically restart when temperature downstream of the heating coil reaches 45 degrees F.

All Questions Key

Details for Question Number: 94

ID Number: 94

Answer: a

References:

PNPS 2.2.40, Rev 20, page 12 of 43

Provided References:

Explanation:

Low temperature below 40 degrees F will trip supply fans but not affect exhaust fans. The freeze alarm must be locally reset in order to restart the tripped supply fans.

Comments:

K/A:	288000K503	Question Source:	New
Importance:	RO 2.5 SRO 2.6	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 3	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 3	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-08-05 EO 5

All Questions Key

Question Number: 95

ID Number: 95

With the SBTG Exhaust Fan 'A' Control Switch in the OFF position and the remainder of SBTG in the normal lineup, a valid Reactor Building Ventilation Isolation and Standby Gas Auto Start signal occurs. Thirty (30) seconds after this signal the 'B' Train of SBTG will be _____(1)_____ and ninety (90) seconds after the initiation signal the 'B' Train of SBTG will _____(2)_____.

- a. (1) running
(2) running
- b. (1) running
(2) shutdown
- c. (1) shutdown
(2) running
- d. (1) shutdown
(2) shutdown

All Questions Key

Details for Question Number: 95

ID Number: 95

Answer: a

References:

2.2.50, Rev 52, Page 10 of 56

Provided References:

Explanation:

On and RBIS the 'B' Train of SBGT will auto start if its control switch is in Auto. After 65 seconds the 'B' Train of SBGT will shutdown. If it then senses low flow it will then restart. It will sense low flow since the A Train Control Switch was in OFF. Therefore 'B' Train will restart after the shutdown at 65 seconds results in a low flow condition.

Comments:

K/A:	288000A301	Question Source:	New
Importance:	RO 3.8 SRO 3.8	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 3	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 3	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-08-03 EO 10

All Questions Key

Question Number: 96

ID Number: 96

Given the following conditions:

- The Reactor Building Equipment Drain Sump Pump local hand switches for both pumps are in the AUTO position.
- Both the 'A' and the 'B' Reactor Building Equipment Drain Sump Pumps are presently NOT running.
- Level in the Reactor Building Equipment Drain Sump is slowly rising and reaches the Hi setpoint.
- Level in the Reactor Building Equipment Drain Sump then starts to lower.

Under these conditions, _____(1)_____ pump(s) would be running to lower sump level.
The running pump(s) will trip on _____(2)_____.

- a. (1) one
(2) either a low level condition in the Reactor Building Equipment Drain Sump OR a high level condition in the Clean Waste Receiver Tanks.
- b. (1) two
(2) either a low level condition in the Reactor Building Equipment Drain Sump OR a high level condition in the Clean Waste Receiver Tanks.
- c. (1) one
(2) on a low level condition in the Reactor Building Equipment Drain Sump but will NOT trip on a high level condition in the Clean Waste Receiver Tanks.
- d. (1) two
(2) on a high level condition in the Clean Waste Receiver Tanks but will NOT trip on a low level condition in the Reactor Building Equipment Drain Sump.

All Questions Key

Details for Question Number: 96

ID Number: 96

Answer: a

References:

PNPS 2.5.2.72, Rev 10, Page 9 of 81

Clean Radwaste Reference Text Page 9 of 38

Provided References:

Explanation:

A Hi level in the RBEDS will start one pump. The second pump will not start until a Hi Hi Level is reached. A Hi level in the Clean Waste Receiver Tank OR a low level in the RBEDS will trip the running Equipment Sump Pump.

Comments:

K/A:	290001K403	Question Source:	New
Importance:	RO 2.8 SRO 2.9	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	3.5
SRO Tier:	2 SRO Group: 1	Exam Level:	BOTH
10CFR Ref:	41.4	Objective:	O-NL-04-01-04 EO 3.b

All Questions Key

Question Number: 97

ID Number: 97

All Reactor Building Ventilation Exhaust Radiation Monitors have increased and are now reading at the Hi Hi Setpoint.

Under these conditions:

- a. SBGT should have automatically started but may be shutdown based on the conditions given.
- b. SGBT should have automatically started and may not be shutdown based on the conditions given.
- c. SBGT should not have automatically started but should be manually started. SBGT may then be shutdown after verifying that substantial core damage does not exist.
- d. SBGT should not have automatically started but should be manually started and may not be shutdown based on the conditions given.

All Questions Key

Details for Question Number: 97

ID Number: 97

Answer: d

References:

EOP-04

PNPS 2.2.50, Rev 52, Page 16 of 56

Provided References:

EOP-04

Explanation:

Hi Hi Reactor Building Ventilation Rad Monitor readings require entry to EOP-04. Hi Hi Reactor Building Ventilation Rad Monitor readings require that SBTG be started/verified started. SBTG will start on Hi Refuel Floor Radiation but not on Hi or Hi Hi Reactor Building Ventilation Rad Monitor readings.

Comments:

K/A:	290001A101	Question Source:	New
Importance:	RO 3.1 SRO 3.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2	RO Group:	2
SRO Tier:	2	Difficulty Level:	3.0
SRO Group:	1	Exam Level:	BOTH
10CFR Ref:	41.10	Objective:	O-RO-02-08-03 EO 4

All Questions Key

Question Number: 98

ID Number: 98

Given the following conditions:

- The plant is operating at full power.
- A loss of Essential DC Bus D-17 occurs.
- The operator observes that neither Recirc Pump 'B' MG Set AC Oil Pumps are running.

Under these conditions, the 'B' Recirc MG Set:

- a. will trip on low oil pressure.
- b. will trip on overcurrent because relay logic power is lost.
- c. will not trip because control power is lost to the drive motor breaker.
- d. will not trip because the DC Oil Pump starts and maintains oil pressure.

All Questions Key

Details for Question Number: 98

ID Number: 98

Answer: c

References:

PNPS 5.3.12, Rev 26, Page 5 of 18

Provided References:

Explanation:

With both AC Lube Oil Pumps secured, a low lube oil trip signal will be generated. However due to a loss of DC control power the trip will not occur.

Comments:

TADS #82

K/A:	263000K302	Question Source:	Bank
Importance:	RO 3.5 SRO 3.8	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 2	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-02-01-02 EO 8

All Questions Key

Question Number: 99

ID Number: 99

Given the following conditions:

- The plant is operating at 100% power.
- You are informed that the High Flux Scrams on APRM 'A', 'C', 'E', 'B' and 'D' are all inoperable.

In order to prevent having to reduce power, which ONE of the following actions would be required within one hour?

- a. Restore RPS trip capability
- b. Trip RPS Channel 'A'
- c. Trip RPS Channel 'B'
- d. Take APRM 'B' Mode Switch out of the OPERATE position.

All Questions Key

Details for Question Number: 99

ID Number: 99

Answer: a

References:

TS Table 3.1.1 and notes

Provided References:

TS

Explanation:

With RPS trip capability lost for the APRM Hi Flux scram on APRMs A, C, E, B, and D you are below the minimum operable channel in both RPS channels. The action for this it to place one trip system in trip within 6 hours then place the other system in trip within 12 hour. Placing the second trip system in trip will cause a full scram which is not required. However, if you did not do this you would have to start reducing power. In addition you have lost full scram capability for the APRM Hi Flux trip because RPS A has no operable APRM Hi Flux trips. This requires that full scram capability be restored within 1 hour or you must start shutting down per actions A or B of Table 3.1.1.

Comments:

K/A:	2940012111	Question Source:	New
Importance:	RO 3.0 SRO 3.8	Cognitive Level:	Comprehension-Analysis
RO Tier:	3 RO Group:	Difficulty Level:	3.0
SRO Tier:	3 SRO Group:	Exam Level:	BOTH
10CFR Ref:	41.7	Objective:	O-RO-06-01-03 EO 3

All Questions Key

Question Number: 100

ID Number: 100

Given the following conditions:

- The plant is starting up per PNPS 2.1.1 with reactor power at 55%.
- A transient then causes feedwater temperature to lower by 10 degrees F.
- Reactor power peaked at 60%.
- The current load line is approximately 60%.
- Core flow is approximately 65 Mlbm/hr.

In taking the immediate action of 2.4.150, you would lower core flow until either _____(1)_____ or until reactor power reaches _____(2)_____.

- a. (1) Core flow reaches 39 Mlbm/hr
(2) 35%
- b. (1) Core flow reaches 39 Mlbm/hr
(2) 30%
- c. (1) Reactor Recirc Pumps reach minimum speed
(2) 35%
- d. (1) Reactor Recirc Pumps reach minimum speed
(2) 30%

All Questions Key

Details for Question Number: 100

ID Number: 100

Answer: d

References:

PNPS 2.4.150, Rev 15, Page 2 of 12

PNPS 2.1.14, Rev 59, Page 40 of 50

Provided References:

Explanation:

If less than 67% load line, you are required to lower core flow until recirc pumps reach minimum speed OR reactor power lowers to 25% below pretransient level. If above the 67% load line, you will lower flow to not less than 39 Mlbm.hr

Comments:

K/A: 2940012120

Question Source: New

Importance: RO 4.3 SRO 4.2

Cognitive Level: Comprehension-Analysis

RO Tier: 3 RO Group:

Difficulty Level: 3.5

SRO Tier: 3 SRO Group:

Exam Level: BOTH

10CFR Ref: 41.10

Objective: O-RO-02-04-09 EO 12

All Questions Key

Question Number: 101

ID Number: 101

The ATWS logic system has automatically initiated due to low-low level reactor water level. Which ONE of the following ATWS actuations will be delayed by 9 seconds?

- a. Rod insertion.
- b. Reactor Recirc Pump Field Breaker Trip.
- c. Reactor Recirc Pump Drive Motor Breaker Trip.
- d. Reactor Feed Pump Trip.

All Questions Key

Details for Question Number: 101

ID Number: 101

Answer: b

References:

PNPS 2.2.126 rev 11 page 6 of 11

Provided References:

Explanation:

ATWS logic Recirc pump field breaker trip is delayed 9 seconds from initiation

Comments:

TADS# 3273 used on 1997 NRC exam

K/A:	2940012128	Question Source:	Bank
Importance:	RO 3.2 SRO 3.3	Cognitive Level:	Memory - Fundamental
RO Tier:	3	RO Group:	Difficulty Level: 2.5
SRO Tier:	3	SRO Group:	Exam Level: BOTH
10CFR Ref:	41.6	Objective:	O-RO-02-07-09 EO2d

All Questions Key

Question Number: 102

ID Number: 102

Given the following conditions:

- The plant is operating at 100% power.
- An SRV then spuriously opens.

The plant may continue to operate until _____ but must then be scrammed.

- a. five minutes have elapsed.
- b. ten minutes have elapsed.
- c. torus bulk temperature reaches 80degrees F.
- d. torus bulk temperature reaches 90 degrees F.

All Questions Key

Details for Question Number: 102

ID Number: 102

Answer: **a**

References:

PNPS 2.4.29, Rev 18, Page 2 of 7

Provided References:

Explanation:

Conditions requiring a scram on a stuck open SRV are 1) Torus temp at 110 degrees F or 2) Five minutes have elapsed or 3) It is determined that the SRV cannot be closed.

Comments:

K/A:	2940012107	Question Source:	New
Importance:	RO 3.7 SRO 4.4	Cognitive Level:	Memory - Fundamental
RO Tier:	3	RO Group:	
		Difficulty Level:	2.5
SRO Tier:	3	Exam Level:	RO
		SRO Group:	
10CFR Ref:	41.10	Objective:	None Listed

All Questions Key

Question Number: 103

ID Number: 103

Given the following conditions:

- Control rods are being withdrawn for a reactor startup.
- RWM Step 1 requires twelve control rods to be withdrawn from position 00 to 24.
- Eleven of the rods are withdrawn to position 24.
- The last rod in the step is withdrawn to position 26.
- RWM Step 2 contains no rods in common with RWM step 1.
- A control rod in the next step is then selected.

Under the given conditions, the RWM will display:

- a. one withdraw error, a select error but no withdraw block.
- b. one withdraw error, a select error, and a withdraw block.
- c. one insert error and further rod withdrawal will be blocked except for the control rod with the insert error.
- d. one insert error and if two more insert errors are made further control rod withdrawal will be blocked except for the three rods with insert errors.

All Questions Key

Details for Question Number: 103

ID Number: 103

Answer: b

References:

RWM Ref Text, Pages 7 and 8
PNPS 2.2.90, Rev 16, page 23 of 34

Provided References:

Explanation:

One withdraw error or three insert errors will result in a select error except for the rods causing the error. If a withdraw error is present, a withdraw block and insert block is applied to all rods except the one causing the error.

Comments:

TADS #6119 Modified

K/A:	2940012233	Question Source:	Bank Modified
Importance:	RO 2.5 SRO 2.9	Cognitive Level:	Comprehension-Analysis
RO Tier:	3 RO Group:	Difficulty Level:	3.0
SRO Tier:	3 SRO Group:	Exam Level:	BOTH
10CFR Ref:	41.0	Objective:	O-RO-02-07-06 EO 6

All Questions Key

Question Number: 104

ID Number: 104

It is desired to isolate the makeup to the TBCCW head tank to allow maintenance inside the tank during an outage. Which ONE of the following would allow the use of LV-4141 as an isolation point when preparing this DANGER tagout?

Note: Refer to attached P&ID M-216, Sheet 1

- a. Setting LV-4141 at the minimum level position.
- b. DANGER tagging the air supply to LV-4141 in the open position.
- c. DANGER tagging the air supply to LV-4142 in the closed position.
- d. Applying a gag to LV-4141 to prevent it from opening.

All Questions Key

Details for Question Number: 104

ID Number: 104

Answer: d

References:

P&ID M-216

PNPS 1.4.5, Rev 56, Page 28 of 113

Provided References:

P&ID M-216

Explanation:

LV-4141 is a fail open air operated valve. Therefore in order to use it as a boundary isolation for a tagout it must be gagged in the closed position.

Comments:

May 2000 NRC Exam

K/A: 2940012213

Question Source: Bank

Importance: RO 3.6 SRO 3.8

Cognitive Level: Comprehension-Analysis

RO Tier: 3 RO Group:

Difficulty Level: 2.5

SRO Tier: 3 SRO Group:

Exam Level: BOTH

10CFR Ref: 41.10

Objective: O-RO-06-06-01 EO 12.d

All Questions Key

Question Number: 105

ID Number: 105

Given the following conditions:

- A job must be performed in a high radiation area.
- The worker who will perform the job has 1150 mRem TEDE to date this year which was all received at Pilgrim Station.
- The normal method of doing the job is in a field of 400 mRem/hr and takes one hour.
- Shielding can be hung by this worker that will lower dose rates by 50% in all areas surrounding the source of radiation but 100 mRem total will be required to install and remove the shielding.
- A special tool is available for use that will allow the job to be performed further from the source of radiation in an area that is 200 mRem/hr without any shielding.
- Using the special tool will extend the job time to 1.5 hours.

Select from the Options below the one that would minimize this workers dose and determine whether the workers administrative TEDE limit would be exceeded if this Option is used.

Option 1—Use no shielding and use the special tool.

Option 2—Use both the shielding and the special tool.

- a. Option 1 would result in the lowest dose and the worker would remain below his/her administrative TEDE limit.
- b. Option 2 would result in the lowest dose and the worker would remain below his/her administrative TEDE limit.
- c. Option 1 would result in the lowest dose but the worker would exceed his/her administrative TEDE limit.
- d. Option 2 would result in the lowest dose but the worker would exceed his/her administrative TEDE limit.

All Questions Key

Details for Question Number: 105

ID Number: 105

Answer: **b**

References:

NOP 83RC2, Rev 8, Page 10 of 10

Provided References:

Explanation:

The administrative limit for TEDE is 1500 mRem. Using the special tool but no shielding will give a dose of 300 mRem. Using both shielding and the special tool will give a dose of 250 mRem. Therefore the admin limit will not be exceeded (total of 1400 mRem).

Comments:

K/A: 2940012302

Question Source: New

Importance: **RO** 2.5 **SRO** 2.9

Cognitive Level: Comprehension-Analysis

RO Tier: 3 **RO Group:**

Difficulty Level: 4.0

SRO Tier: 3 **SRO Group:**

Exam Level: BOTH

10CFR Ref: 41.12

Objective: C-GT-01-01-28, EO 14

All Questions Key

Question Number: 106

ID Number: 106

Which of the following is the maximum release rate when discharging a Miscellaneous Tank?

- a. 200 GPM
- b. 100 GPM
- c. 50 GPM
- d. 25 GPM

All Questions Key

Details for Question Number: 106

ID Number: 106

Answer: d

References:

PNPS 7.9.2 rev 42 page 7 of 55

Provided References:

Explanation:

The maximum discharge rate for any miscellaneous tanks shall not exceed 25 gpm. Treated water tanks and neutralizing sumps discharge rate shall not exceed 200 gpm.

Comments:

TADS #5999

K/A:	2940012311	Question Source:	Bank
Importance:	RO 2.7 SRO 3.2	Cognitive Level:	Memory - Fundamental
RO Tier:	3	RO Group:	
		Difficulty Level:	2.5
SRO Tier:	3	SRO Group:	
		Exam Level:	BOTH
10CFR Ref:	41.13	Objective:	O-NL-04-02-01 EO-3

All Questions Key

Question Number: 107

ID Number: 107

The reactor is at rated pressure when inerting of the torus is initiated.

Per 2.2.70, Primary Containment Atmosphere Control System, what is the consequence if the Drywell Purge Supply Isolation Valve (AO-5035A) is inadvertently left open during the torus inerting?

- a. If a LOCA occurs without isolation, a direct flow path from the drywell to torus air space would occur.
- b. If torus N2 flow is too high, chugging at the downcomers would occur.
- c. If torus N2 flow is too high, excessive cycling of the torus to drywell vacuum breakers would occur.
- d. If the SBGT fan tripped, drywell pressure would reach 2.2 psig prior to being able to secure N2 flow.

All Questions Key

Details for Question Number: 107

ID Number: 107

Answer: **a**

References:

PNPS 2.2.70, Rev 76, Page 18 of 125

Provided References:

Explanation:

Per PNPS 2.2.70, leaving the 5035A open during inerting of the torus would allow a direct path from drywell to torus air space during a LOCA.

Comments:

TADS #6061

K/A:	2940012309	Question Source:	Bank
Importance:	RO 2.5 SRO 3.4	Cognitive Level:	Memory - Fundamental
RO Tier:	3 RO Group:	Difficulty Level:	2.5
SRO Tier:	3 SRO Group:	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-08-02, EO 15

All Questions Key

Question Number: 108

ID Number: 108

During LOCA/ATWS conditions, which ONE of the following conditions will ensure that you avoid entry to the Q-leg of EOP-02?

- a. Reactor water level is -100 inches.
- b. The plant is in the safe region of the Boron Injection Initiation Curve.
- c. Reactor power is 2%.
- d. All SRVs are closed.

All Questions Key

Details for Question Number: 108

ID Number: 108

Answer: c

References:

EOP-02

Provided References:

Explanation:

Any of these four conditions relate to whether the Q-leg will be entered to protect containment of prevent oscillations. The only condition given that will prevent entry to the Q-leg on the protect containment and prevent oscillations override is reactor power below 3%. This is a recent EOP-02 change.

Comments:

K/A:	2940012409	Question Source:	New
Importance:	RO 3.3 SRO 3.9	Cognitive Level:	Comprehension-Analysis
RO Tier:	3	RO Group:	Difficulty Level: 3.0
SRO Tier:	3	SRO Group:	Exam Level: BOTH
10CFR Ref:	41.10	Objective:	O-RO-03-04-04, EO 25.b

All Questions Key

Question Number: 109

ID Number: 109

The plant was operating at 100% power when a DBA LOCA occurred and panel Y-4 de-energized.

Which ONE of the following describes the operability and use of the suppression pool water temperature recorder on panel C170 under current plant conditions?

- a. Operable and qualified for use as a Post Accident Monitor.
- b. Not operable and not qualified for use as a Post Accident Monitor.
- c. Operable but not qualified for use as a Post Accident Monitor.
- d. Not operable but qualified for use as a Post Accident Monitor.

All Questions Key

Details for Question Number: 109

ID Number: 109

Answer: a

References:

5.3.18, Rev 17, Page 5 of 7

Provided References:

Explanation:

The torus temperature recorder on panel C-170 is powered from Y-3 and is a PAM qualified instrument. The loss of Y-4 affects the torus temperature recorder on panel C-171.

Comments:

May 2000 NRC Exam

K/A:	2940012403	Question Source:	Bank
Importance:	RO 3.5 SRO 3.8	Cognitive Level:	Memory - Fundamental
RO Tier:	3	RO Group:	Difficulty Level: 2.5
SRO Tier:	3	SRO Group:	Exam Level: BOTH
10CFR Ref:	41.7	Objective:	None Identified

All Questions Key

Question Number: 110

ID Number: 110

A fire brigade of ____ (1) ____ members including the brigade leader must be on site at all times. These fire brigade members ____ (2) ____ be the same personnel that are necessary for safe shutdown of the plant.

- a. (1) four
(2) may
- b. (1) five
(2) may
- c. (1) four
(2) may not
- d. (1) five
(2) may not

All Questions Key

Details for Question Number: 110

ID Number: 110

Answer: d

References:

NOP 83FP1, Rev 6, Page 12 of 18

Provided References:

Explanation:

NOP 83FP1, Fire Protection Plan requires a fire brigade of five personnel including the brigade leader, four plus the leader. The procedure prohibits these people being the same personnel used for safe shutdown.

Comments:

K/A:	2940012425	Question Source:	New
Importance:	RO 2.9 SRO 3.4	Cognitive Level:	Memory - Fundamental
RO Tier:	3	RO Group:	Difficulty Level: 2.5
SRO Tier:	3	SRO Group:	Exam Level: BOTH
10CFR Ref:	41.10	Objective:	O-RO-06-06-01, EO 7.c

All Questions Key

Question Number: 111

ID Number: 111

Given the following conditions:

- The plant is operating in a refueling outage.
- The surveillance to manually initiate SBLC control has just been completed on the 'A' Train.
- There are replacement squib valves available from three separate batches:
 - Batch A is the same batch as the squib valve that was just fired.
 - Batch B is a batch that has been certified by having one valve from the batch fired.
 - Batch C is from the same vendor as Batch A but has no valves from the batch that have been fired.

The 'A' SBLC Squib Valve could be replaced from:

- a. Batch A only
- b. Batch A or B only
- c. Batch A or C only
- d. Batch A or B or C

All Questions Key

Details for Question Number: 111

ID Number: 111

Answer: b

References:

TS Bases for 4.4.2, Page B3/4.4-4

Provided References:

Explanation:

The replacement squib can be from the same batch just fired or from another batch that is certified by having one valve in the batch fired.

Comments:

K/A:	2110002218	Question Source:	New
Importance:	RO 2.3 SRO 3.6	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 1	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 1	Exam Level:	SRO
10CFR Ref:	43.2	Objective:	O-RO-06-01-03 EO 4

All Questions Key

Question Number: 112

ID Number: 112

Given the following conditions:

- The plant is nearing the end of a refueling outage.
- As an SRO working in the Control Room Annex you have been directed to ensure that the Containment Spray Mode of RHR meets its Technical Specification LCO.

Which ONE of the following describes the operability requirements for the RHR Pumps and Heat Exchangers to meet this LCO?

- a. All 4 RHR pumps and both RHR Heat Exchangers must be operable
- b. One RHR pump per loop and both RHR Heat Exchangers must be operable. The other two RHR Pumps may be INOPERABLE.
- c. All 4 RHR pumps must be operable. Both RHR Heat Exchangers may be INOPERABLE.
- d. One RHR pump per loop must be operable. The other two RHR Pumps and both RHR Heat Exchangers may be INOPERABLE.

All Questions Key

Details for Question Number: 112

ID Number: 112

Answer: b

References:

TS Bases Page B3/4.5-8

Provided References:

Explanation:

Per the TS Bases, an RHR Containment Spray Subsystem is Operable when one pump, the heat exchanger, associated piping, valves, instrumentation and controls are Operable.

Comments:

K/A:	2260012227	Question Source:	New
Importance:	RO 2.6 SRO 3.5	Cognitive Level:	Memory - Fundamental
RO Tier:	2 RO Group: 2	Difficulty Level:	2.5
SRO Tier:	2 SRO Group: 1	Exam Level:	SRO
10CFR Ref:	43.2	Objective:	O-RO-02-09-01 EO 22

All Questions Key

Question Number: 113

ID Number: 113

Given the following conditions:

- The plant is operating at power when a leak occurs from the shell side of the Fuel Pool Cooling Heat Exchanger resulting in a high temperature alarm in the Fuel Pool Cooling Heat Exchanger Room.
- Isolating this leak will require completely securing the Fuel Pool Cooling System.
- EOP-04 is entered.
- No other area high temperature alarms are in.
- Secondary containment water levels are all less than 1 inch
- You direct surveys to be conducted per PNPS 5.3.33, "Secondary Containment Radiation Surveys for EOP-04."
- You are awaiting the results of the radiation surveys.

Under these conditions, the isolation of the leak from Fuel Pool Cooling:

- a. should not be performed until survey results indicate a rising area radiation level resulting from the leak.
- b. should not be performed until survey results indicate that at least one area is above its Max Normal Radiation Level.
- c. should be performed now. If the leak cannot be isolated and radiation surveys indicate that both the Fuel Pool Cooling Pump/Heat Exchanger area AND the North Storage and Laydown Area are above 1 R/hr a manual scram is required.
- d. should be performed now. If the leak cannot be isolated and radiation surveys indicate that both the Fuel Pool Cooling Pump/Heat Exchanger area AND the North Storage and Laydown Area are above 1 R/hr a reactor shutdown is required.

All Questions Key

Details for Question Number: 113

ID Number: 113

Answer: d

References:

EOP-04

Provided References:

EOP-04

Explanation:

Since the Hi Temperature Alarm is already in you would already have direction to isolate all systems not needed for fire fighting or directed to be used by EOPs. You would not need to await survey results to isolate the leak. Since the system is not a primary system, a reactor shutdown and not a scram would be required.

Comments:

K/A: 2330002416

Question Source: New

Importance: RO 3.0 SRO 4.0

Cognitive Level: Comprehension-Analysis

RO Tier: 2 RO Group: 3

Difficulty Level: 3.5

SRO Tier: 2 SRO Group: 3

Exam Level: SRO

10CFR Ref: 43.5

Objective: O-RO-03-04-06 EO 6

All Questions Key

Question Number: 114

ID Number: 114

Given the following conditions:

- The Cable Spreading Room cannot be accessed due to a fire burning out of control in the Cable Spreading Room.
- The Main Control Room has been abandoned.
- The only system malfunction that has been attributed to the fire is the Bypass Valves failing open.

Under these conditions the outboard MSIVS should _____(1)_____ and an _____(2)_____ should be declared.

- a. (1) be left open
(2) unusual event
- b. (1) be left open
(2) alert
- c. (1) be closed by pulling fuses in Panel C942
(2) unusual event
- d. (1) be closed by bleeding air pressure from the accumulators in the steam tunnel.
(2) alert

All Questions Key

Details for Question Number: 114

ID Number: 114

Answer: d

References:

EAL Chart
PNPS 2.4.143, Rev 25, Pages 7 and 84 of 101

Provided References:

EAL Chart

Explanation:

With the Control Room evacuated, the MSIVs should normally be left open. However a fire in the MCR or CSR may cause pressure control to be lost. In this case, the MSIVs should be closed. The first option is by pulling fuses in the C942 panel however these panels are in the CSR. The next option is to go in the steam tunnel and bleed air off the accumulators. Two conditions are met which require an alert, fire burning out of control in a vital area and the MCR has been evacuated.

Comments:

K/A:	2620012435	Question Source:	New
Importance:	RO 3.3 SRO 3.5	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	3.5
SRO Tier:	2 SRO Group: 1	Exam Level:	SRO
10CFR Ref:	43.5	Objective:	O-RO-07-02-01 EO 2

All Questions Key

Question Number: 115

ID Number: 115

Given the following conditions:

- You are the shift manager.
- The on-shift radiation protection technician becomes ill and must be taken to the hospital.
- The only radiation protection technician that can be reached consumed two beers one hour ago.
- This person indicates they feel comfortable driving and you direct them to report to work.
- A breathalyzer test administered when the individual reported to the station indicates a BAC of 0.045.

Under these conditions you would:

- a. be required by station procedures to tell the person to drive himself home.
- b. be required by station procedures to provide the worker transportation home.
- c. assign work commensurate with his or her fitness.
- d. contact the on-call medical representative for help in evaluating the worker's fitness for duty.

All Questions Key

Details for Question Number: 115

ID Number: 115

Answer: b

References:

1.3.61-1, Rev 3, Page 6 of 7

Provided References:

Explanation:

Above a BAC of 0.04 you cannot assign work and don't need Medical to evaluate. You must have the person driven home.

Comments:

K/A:	2940012104	Question Source:	New
Importance:	RO 2.3 SRO 3.4	Cognitive Level:	Memory - Fundamental
RO Tier:	3	RO Group:	Difficulty Level: 2.5
SRO Tier:	3	SRO Group:	Exam Level: SRO
10CFR Ref:	43.5	Objective:	O-RO-06-06-01 EO 9

All Questions Key

Question Number: 116

ID Number: 116

Given the following conditions:

- You are the shift manager.
- A reactor startup is in progress.

Which ONE of the following individuals would require your permission to enter the Control Room?

- a. The NRC Senior Resident Inspector
- b. An INPO evaluator
- c. A QA Auditor
- d. The SCRE

All Questions Key

Details for Question Number: 116

ID Number: 116

Answer: **b**

References:

PNPS 1.3.34, Rev 73, page 37 of 117

Provided References:

Explanation:

NRC personnel. QA personnel and the SCRE can all enter the Control Room (but not necessarily the ATC areas) without permission. All other personnel (such as INPO) require permission from the Shift Manager to enter.

Comments:

K/A:	2940012113	Question Source:	New
Importance:	RO 2.0 SRO 2.9	Cognitive Level:	Memory - Fundamental
RO Tier:	3 RO Group:	Difficulty Level:	2.5
SRO Tier:	3 SRO Group:	Exam Level:	SRO
10CFR Ref:	43.5	Objective:	O-RO-06-06-01 EO 7.f

All Questions Key

Question Number: 117

ID Number: 117

Given the following conditions:

- A system engineer completes a 10CFR50.59 Safety Evaluation for a modification to the plant.
- The 10CFR50.59 Review identifies an unreviewed safety question.

Under these conditions, this modification:

- a. cannot be processed as a temporary modification because it involves an unreviewed safety question which requires a license amendment.
- b. cannot be processed as a temporary modification because it is expected to be in place longer than 6 months
- c. can be processed as a temporary modification since the 10CFR50.59 Safety Evaluation is complete and identified an unreviewed safety question.
- d. can be processed as a temporary modification provided the NRC Resident Inspector has granted permission for the modification.

All Questions Key

Details for Question Number: 117

ID Number: 117

Answer: **a**

References:

PNPS 1.5.9, Rev 31, Page 15 of 31

Provided References:

Explanation:

A license amendment is required in order to implement a change that would introduce an unreviewed safety question.

Comments:

K/A:	2940012205	Question Source:	New
Importance:	RO 1.6 SRO 2.7	Cognitive Level:	Memory - Fundamental
RO Tier:	3	RO Group:	Difficulty Level: 2.5
SRO Tier:	3	SRO Group:	Exam Level: SRO
10CFR Ref:	43.3	Objective:	O-RO-06-06-01 EO 34.b

All Questions Key

Question Number: 118

ID Number: 118

Given the following conditions:

- You are the Shift Manager with the plant in a refueling outage and a fuel shuffle in progress.
- Fuel is currently being removed around control rod 30-07.
- SRM 'B' is currently inoperable.
- SRMs 'A' and 'C' are functioning properly.
- I&C would like to tag out SRM 'D' and remove the detector.

NOTE: Refer to the attached SRM Quadrant Definition

Under these conditions, removing SRM 'D' detector _____(1)_____ be a core alteration and _____(2)_____ be allowed as long as fuel movement in the vessel is in progress.

- a. (1) would
(2) would
- b. (1) would not
(2) would
- c. (1) would
(2) would not
- d. (1) would not
(2) would not

All Questions Key

Details for Question Number: 118

ID Number: 118

Answer: d

References:

TS Definitions

TS Section 3.10.B

PNPS 4.3, Rev 86, Page 45 of 45

Provided References:

TS (No definitions)

PNPS 4.3, Rev 86, Page 45 of 45

Explanation:

Moving an SRM detector including undervessel replacement is an exception to the definition of Core Alt. You must also have an operable SRM in the quadrant where fuel is being moved along with one SRM in an adjacent quadrant.

Comments:

K/A: 2940012232

Question Source: New

Importance: RO 2.3 SRO 3.3

Cognitive Level: Comprehension-Analysis

RO Tier: 3 **RO Group:**

Difficulty Level: 3.0

SRO Tier: 3 **SRO Group:**

Exam Level: SRO

10CFR Ref: 43.6

Objective: O-RO-02-08-06 EO 2.a.1

All Questions Key

Question Number: 119

ID Number: 119

Given the following conditions:

- The plant is in cold shutdown.
- The RWCU System is scheduled to be removed from service during your shift to allow the RWCU Non-Regenerative Heat Exchanger to be isolated, drained and removed.
- You are the 3rd SRO and have been assigned to prepare for and conduct a brief on this evolution.

Which of the following conditions would you brief personnel to expect?

Condition 1: Reactor water conductivity will increase.

Condition 2: Dose rates may increase when the Heat Exchanger is drained.

Condition 3: Hot water may flash to steam when draining the shell side of the heat exchanger.

Condition 4: Radioactively contaminated water will be encountered when draining the tube side of the heat exchanger.

- a. Conditions 1 and 4 only
- b. Conditions 1, 2 and 3 only
- c. Conditions 1, 2 and 4 only
- d. Conditions 2, 3 and 4 only

All Questions Key

Details for Question Number: 119

ID Number: 119

Answer: c

References:

2.2.83, Rev 65, Page 12 of 93
TS 3.6.B.

Provided References:

Explanation:

Reactor water conductivity will increase if RWCU is removed from service. Dose rates will increase when a RWCU heat exchanger is drained. Shell side contains RBCCW and should not be hot enough to flash. Tube side is reactor water and will be contaminated.

Comments:

K/A:	2940012310	Question Source:	New
Importance:	RO 2.9 SRO 3.3	Cognitive Level:	Comprehension-Analysis
RO Tier:	3	RO Group:	
SRO Tier:	3	Difficulty Level:	3.0
SRO Group:		Exam Level:	SRO
10CFR Ref:	43.4	Objective:	None listed

All Questions Key

Question Number: 120

ID Number: 120

The primary containment is required to be vented regardless of radioactive release rate:

- a. if drywell hydrogen concentration reaches 6% with drywell oxygen concentration of 3%.
- b. if more than two general areas in the reactor building reach their Max Safe Temperature.
- c. before torus bottom pressure reaches the pressure suppression pressure limit.
- d. before torus bottom pressure reaches the primary containment pressure limit.

All Questions Key

Details for Question Number: 120

ID Number: 120

Answer: d

References:

EOP 3 and EOP 4

Provided References:

EOP 3 and EOP 4

Explanation:

Hydrogen and oxygen must both be above combustible limits in order to vent without regard to offsite release rate. Only hydrogen concentration is above combustible limit. Two areas above max safe will require Emergency Depress but not venting primary containment. Emergency Depress is required when you cannot maintain below the pressure suppression pressure. Must vent without regard to offsite release rate before exceeding primary containment pressure limit.

Comments:

May 2000 NRC Exam

K/A: 2940012308

Question Source: Bank

Importance: RO 2.3 SRO 3.2

Cognitive Level: Comprehension-Analysis

RO Tier: 3 **RO Group:**

Difficulty Level: 3.0

SRO Tier: 3 **SRO Group:**

Exam Level: SRO

10CFR Ref: 43.5

Objective: O-RO-03-04-05 EO 13

All Questions Key

Question Number: 121

ID Number: 121

Which ONE of the following is the bases for maintaining the Turbine Building Ventilation System in operation while executing EOP-05?

- a. Prevents Reactor Building Ventilation from entering the Turbine Building.
- b. Prevents a direct reactor scram due to high temperature in the Main Steam Tunnel.
- c. Prevents having an unmonitored ground release from the Turbine Building.
- d. Ensures adequate dilution of the gases discharged through the stack.

All Questions Key

Details for Question Number: 121

ID Number: 121

Answer: c

References:

O-RO-03-04-07, page 7

Provided References:

Explanation:

Maintaining secondary containment integrity prevents Reactor Building Ventilation from entering the Turbine Building. MSL hi temp is not a direct reactor scram but is a Group I isolation. Restarting TB ventilation preserves TB accessibility and helps minimize potential for ground release. Area of concern is ground release.

Comments:

May 2000 NRC Exam

K/A:	2940012406	Question Source:	Bank
Importance:	RO 3.1 SRO 4.0	Cognitive Level:	Memory - Fundamental
RO Tier:	3	RO Group:	
SRO Tier:	3	Difficulty Level:	2.5
10CFR Ref:	43.4	Exam Level:	SRO
		Objective:	None identified

All Questions Key

Question Number: 122

ID Number: 122

Given the following conditions;

The Reactor was manually scrammed
Drywell pressure is 2.0 psig and lowering slowly
RPV pressure is 850 psig and lowering slowly
RPV level is +53 inches and rising slowly
Mode switch is in SHUTDOWN

Based on these conditions, which of the following describes the response of the GROUP 1 isolation logic?

- a. A GROUP 1 isolation will occur when the main Steam line pressure reaches 810 psig, but may be averted by placing the mode switch in REFUELING prior to reaching 810 psig.
- b. A GROUP 1 isolation should have already occurred.
- c. A GROUP 1 isolation will occur when Main Steam Line pressure reaches 810 psig regardless of the mode switch position.
- d. A GROUP 1 isolation will occur will occur when main steam line pressure reaches 810 psig if RPV level is greater than +55 inches

All Questions Key

Details for Question Number: 122

ID Number: 122

Answer: d

References:

PNPS 2.2.125 rev21 page 35 of 36

Provided References:

Explanation:

MSIV isolation will occur when main steam line pressure reaches 810 psig concurrent with RPV level of +55 inches or greater with mode switch not in RUN.

Comments:

Modified from TADS number 5467

K/A:	239001A301	Question Source:	Bank Modified
Importance:	RO 4.2 SRO 4.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	2 SRO Group: 3	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-08-10 EO 3

All Questions Key

Question Number: 123

ID Number: 123

Which of the following conditions would require the Safety Relief Valve(s) / Safety Valve(s) to be considered inoperable?

During a review of the calibration procedures for the Safety/Relief valves it is determined that due to calibration instrument errors, the:

- a. 'B' safety valve lift setpoint is determined to be 1228 psig. With Reactor pressure 100 psig and Reactor temperature 330 degrees Fahrenheit.
- b. 'B' safety valve lift setpoint is determined to be 1242 psig. With Reactor pressure 150 psig and Reactor temperature 365 degrees Fahrenheit.
- c. 'A' Safety Relief Valve lift setpoint is determined to be 1100 psig. With Reactor pressure 100 psig and Reactor temperature 330 degrees Fahrenheit.
- d. 'A' Safety Relief Valve lift setpoint is determined to be 1240 psig. With Reactor pressure 150 psig and Reactor temperature 365 degrees Fahrenheit.

All Questions Key

Details for Question Number: 123

ID Number: 123

Answer: d

References:

Technical Specifications 3.6.D.1

Provided References:

Technical Specifications

Explanation:

Tech Specs require that the Safety valves have a lift setpoint of 1240 psig plus or minus 13 psig when reactor pressure is 104 psig and temperature is 340 degrees Fahrenheit. Safety relief valves setpoints are required to be between 1095 and 1115 with a tolerance of plus or minus 11 psig when reactor pressure is 104 psig and temperature is 340 degrees Fahrenheit

Comments:

K/A:	2390022222	Question Source:	New
Importance:	RO 3.4 SRO 4.1	Cognitive Level:	Comprehension-Analysis
RO Tier:	2	RO Group:	1
		Difficulty Level:	3.0
SRO Tier:	2	Exam Level:	RO
		Objective:	O-RO 06-01-03 EO 3
10CFR Ref:	41.7		

All Questions Key

Question Number: 124

ID Number: 124

With the Reactor operating at rated power and pressure, an attempt is made to open Core Spray Injection valve MO-25B from C-153 (alternate shutdown panel). The response of the Core Spray System is?

- a. MO-25B opens.
- b. MO-25B does not open because MO-24B is open.
- c. MO-25B does not open because there is no initiation signal and Reactor pressure is above 400 psig.
- d. MO-25B opens, when it leaves the full closed position MO-24B closes.

All Questions Key

Details for Question Number: 124

ID Number: 124

Answer: a

References:

Core Spray reference text page 13

Provided References:

Explanation:

Operation from the alternate shutdown panel C-153 bypasses all interlocks associated with MO-25B

Comments:

TADS # 6152

K/A:	2940012202	Question Source:	Bank
Importance:	RO 4.0 SRO 3.5	Cognitive Level:	Memory - Fundamental
RO Tier:	3 RO Group:	Difficulty Level:	2.5
SRO Tier:	3 SRO Group:	Exam Level:	RO
10CFR Ref:	41.7	Objective:	O-RO-02-09-02 EO 5

All Questions Key

Question Number: 125

ID Number: 125

Given the following conditions:

- The reactor is operating at 100% power.
- The selected FWLC Level Instrument fails downscale.
- No operator action is taken, actual level starts to rise and reaches +60 inches.

Under these conditions, the status of the Reactor Feed Pumps and the Main Turbine would be:

- a. The Reactor Feed Pumps tripped and the Main Turbine tripped.
- b. The Reactor Feed Pumps tripped and the Main Turbine operating.
- c. The Reactor Feed Pumps operating and the Main Turbine tripped.
- d. The Reactor Feed Pumps operating and the Main Turbine operating.

All Questions Key

Details for Question Number: 125

ID Number: 125

Answer: c

References:

Nuclear Boiler Inst Reference Text, Page 35

Provided References:

Explanation:

Reactor Feed Pump Hi Level Trip comes off the FWLC Instrument and require two out of two channel to trip. Therefore with a channel failed downscale the high level trip would never come in. The turbine trip comes off the NR instrument therefore the turbine trip would occur at 45 inches reactor water level.

Comments:

K/A:	2950082411	Question Source:	New
Importance:	RO 3.4 SRO 3.6	Cognitive Level:	Comprehension-Analysis
RO Tier:	1 RO Group: 2	Difficulty Level:	3.0
SRO Tier:	1 SRO Group: 2	Exam Level:	RO
10CFR Ref:	41.10	Objective:	O-RO-02-04-10 EO 25