# Draft Submittal

(Pink Paper)

# Senior Reactor Operator Written Exam

Submitted 08-15-07

ES-401 PWR Examination Outline Form ES-401-2

**Facility:** Sequoyah Printed: 08/14/2007

Date Of Exam: 01/28/2008

| Tier | Group | RO K/A Category Points | | | | | | | | | | | | SRO-Only Points | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G* | Total | A2 | | | G* | Total | | |
| 1. Emergency & Abnormal Plant Evolutions | 1 | 0 | 0 | 0 | N/A | | | 0 | 0 | N/A | | 0 | 0 | 4 ✓ | | | 3 ✓ | 7 ✓ | | |
| | 2 | 0 | 0 | 0 | | | | 0 | 0 | | | 0 | 0 | 3 ✓ | | | 2 ✓ | 5 ✓ | | |
| | Tier Totals | 0 | 0 | 0 | | | | 0 | 0 | | | 0 | 0 | 7 ✓ | | | 5 ✓ | 12 ✓ | | |
| 2. Plant Systems | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 ✓ | | | 2 ✓ | 4 ✓ | | |
| | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 ✓ | | 1 ✓ | 2 ✓ | | |
| | Tier Totals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 3 ✓ | | 3 ✓ | 6 ✓ | | |
| 3. Generic Knowledge And Abilities Categories | | 1 | | 2 | | 3 | | 4 | | 0 | | 1 | 2 | 3 | 4 | 7 ✓ | | | | |
| | | 0 | | 0 | | 0 | | 0 | | | | 2 ✓ | 1 ✓ | 2 ✓ | 2 ✓ | | | | | |

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
7. * The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

# PWR SRO Examination Outline

Printed: 08/14/2007

**Facility:** Sequoyah

**ES - 401** **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

| APE # / Name / Safety Function | K1 | K2 | K3 | A1 | A2 | G | KA Topic | Imp. | Points |
|---|---|---|---|---|---|---|---|---|---|
| 000008 Pressurizer Vapor Space Accident / 3 | | | | | | X | 2.4.49 - Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. | 4.0 | 1 |
| 000029 ATWS / 1 | | | | | X | | EA2.09 - Occurrence of a main turbine/reactor trip | 4.5 | 1 |
| 000054 Loss of Main Feedwater / 4 | | | | | X | | AA2.05 - Status of MFW pumps, regulating and stop valves | 3.7 | 1 |
| 000057 Loss of Vital AC Inst. Bus / 6 | | | | | X | | AA2.17 - System and component status, using local or remote controls | 3.4 | 1 |
| 000065 Loss of Instrument Air / 8 | | | | | X | | AA2.01 - Cause and effect of low-pressure instrument air alarm | 3.2 | 1 |
| W/E11 Loss of Emergency Coolant Recirc. / 4 | | | | | | X | 2.4.48 - Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions. | 3.8 | 1 |
| W/E12 - Steam Line Rupture - Excessive Heat Transfer / 4 | | | | | | X | 2.4.33 - Knowledge of the process used track inoperable alarms. | 2.8 | 1 |
| **K/A Category Totals:** | **0** | **0** | **0** | **0** | **4** | **3** | **Group Point Total:** | | **7** |

# PWR SRO Examination Outline

Printed: 08/14/2007

**Facility:** Sequoyah

**ES - 401** **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-2**

| PE # / Name / Safety Function | K1 | K2 | K3 | A1 | A2 | G | KA Topic | Imp. | Points |
|---|---|---|---|---|---|---|---|---|---|
| 000003 Dropped Control Rod / 1 | | | | | | X | 2.2.26 - Knowledge of refueling administrative requirements. | 3.7 | 1 |
| 000005 Inoperable/Stuck Control Rod / 1 | | | | | X | | AA2.03 - Required actions if more than one rod is stuck or inoperable | 4.4 | 1 |
| 000051 Loss of Condenser Vacuum / 4 | | | | | X | | AA2.02 - Conditions requiring reactor and/or turbine trip | 4.1 | 1 |
| W/E02 SI Termination / 3 | | | | | X | | EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments | 4.0 | 1 |
| W/E16 High Containment Radiation / 9 | | | | | | X | 2.2.31 - Knowledge of procedures and limitations involved in initial core loading. | 2.9* | 1 |
| **K/A Category Totals:** | **0** | **0** | **0** | **0** | **3** | **2** | **Group Point Total:** | | **5** |

# PWR SRO Examination Outline

Printed: 08/14/2007

**Facility:** Sequoyah

**ES - 401** **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

| s/Evol # / Name | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic | Imp. | Points |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 008 Component Cooling Water | | | | | | | | X | | | | A2.09 - Results of excessive exit temperature from the letdown cooler, including the temperature effects on ion-exchange resins | 2.8 | 1 |
| 010 Pressurizer Pressure Control | | | | | | | | | | | X | 2.4.38 - Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator. | 4.0 | 1 |
| 013 Engineered Safety Features Actuation | | | | | | | | X | | | | A2.05 - Loss of dc control power | 4.2 | 1 |
| 103 Containment | | | | | | | | | | | X | 2.2.14 - Knowledge of the process for making configuration changes. | 3.0 | 1 |
| **K/A Category Totals:** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **2** | **Group Point Total:** | | **4** |

# PWR SRO Examination Outline

Printed: 08/14/2007

**Facility:** Sequoyah

**ES - 401** **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

| s/Evol # / Name | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic | Imp. | Points |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 029 Containment Purge | | | | | | | | | | | X | 2.4.38 - Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator. | 4.0 | 1 |
| 034 Fuel Handling Equipment | | | | | | | | X | | | | A2.02 - Dropped cask | 3.9 | 1 |
| **K/A Category Totals:** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **1** | **Group Point Total:** | | **2** |

## Generic Knowledge and Abilities Outline (Tier 3)

## PWR SRO Examination Outline

Printed: 08/14/2007

**Facility:** Sequoyah

**Form ES-401-3**

| Generic Category | KA | KA Topic | Imp. | Points |
|---|---|---|---|---|
| **Conduct of Operations** | 2.1.12 | Ability to apply technical specifications for a system. | 4.0 | 1 |
| | 2.1.33 | Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. | 4.0 | 1 |
| | | **Category Total:** | | **2** |
| **Equipment Control** | 2.2.8 | Knowledge of the process for determining if the proposed change, test, or experiment involves an unreviewed safety question. | 3.3 | 1 |
| | | **Category Total:** | | **1** |
| **Radiation Control** | 2.3.1 | Knowledge of 10 CFR: 20 and related facility radiation control requirements. | 3.0 | 1 |
| | 2.3.6 | Knowledge of the requirements for reviewing and approving release permits. | 3.1 | 1 |
| | | **Category Total:** | | **2** |
| **Emergency Procedures/Plan** | 2.4.9 | Knowledge of low power /shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies. | 3.9 | 1 |
| | 2.4.49 | Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. | 4.0 | 1 |
| | | **Category Total:** | | **2** |
| | | **Generic Total:** | | **7** |

**Facility:** Sequoyah Printed: 08/14/2007

Date Of Exam: 01/28/2008

| Tier | Group | RO K/A Category Points | | | | | | | | | | | | SRO-Only Points | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G* | Total | A2 | | | G* | Total | |
| 1. Emergency & Abnormal Plant Evolutions | 1 | 0 | 0 | 0 | N/A | | | 0 | 0 | N/A | | 0 | 0 | 4 | | | 3 | 7 | |
| | 2 | 0 | 0 | 0 | | | | 0 | 0 | | | 0 | 0 | 3 | | | 2 | 5 | |
| | Tier Totals | 0 | 0 | 0 | | | | 0 | 0 | | | 0 | 0 | 7 | | | 5 | 12 | |
| 2. Plant Systems | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | 2 | 4 | |
| | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | 1 | 2 | |
| | Tier Totals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | | 3 | 6 | |
| 3. Generic Knowledge And Abilities Categories | | 1 | | | 2 | | | 3 | | | 4 | | 0 | 1 | 2 | 3 | 4 | 7 | |
| | | 0 | | | 0 | | | 0 | | | 0 | | | 2 | 1 | 2 | 2 | | |

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

**Facility:** yah

**PWR SRO Examination Outline** Printed: 08/14/2007

**ES - 401** **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

| E/APE # / Name / Safety Function | KA | KA Topic | Comment |
|---|---|---|---|
| 000008 Pressurizer Vapor Space Accident / 3 | 2.4.49 | Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. | |
| 000029 ATWS / 1 | EA2.09 | Occurrence of a main turbine/reactor trip | |
| 000054 Loss of Main Feedwater / 4 | AA2.05 | Status of MFW pumps, regulating and stop valves | |
| 000057 Loss of Vital AC Inst. Bus / 6 | AA2.17 | System and component status, using local or remote controls | |
| 000065 Loss of Instrument Air / 8 | AA2.01 | Cause and effect of low-pressure instrument air alarm | |
| W/E11 Loss of Emergency Coolant Recirc. / 4 | 2.4.48 | Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions. | |
| W/E12 - Steam Line Rupture - Excessive Heat Transfer / 4 | 2.4.33 | Knowledge of the process used track inoperable alarms. | |

**Facility:** yah

**PWR SRO Examination Outline** Printed: 08/14/2007

**ES - 401** **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-2**

| E/APE # / Name / Safety Function | KA | KA Topic | Comment |
|---|---|---|---|
| 000003 Dropped Control Rod / 1 | 2.2.26 | Knowledge of refueling administrative requirements. | |
| 000005 Inoperable/Stuck Control Rod / 1 | AA2.03 | Required actions if more than one rod is stuck or inoperable | |
| 000051 Loss of Condenser Vacuum / 4 | AA2.02 | Conditions requiring reactor and/or turbine trip | |
| W/E02 SI Termination / 3 | EA2.2 | Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments | |
| W/E16 High Containment Radiation / 9 | 2.2.31 | Knowledge of procedures and limitations involved in initial core loading. | |

**Facility:** Koyah

**ES - 401** **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

| Sys/Evol # / Name | KA | KA Topic | Comment |
|---|---|---|---|
| 008 Component Cooling Water | A2.09 | Results of excessive exit temperature from the letdown cooler, including the temperature effects on ion-exchange resins | |
| 010 Pressurizer Pressure Control | 2.4.38 | Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator. | |
| 013 Engineered Safety Features Actuation | A2.05 | Loss of dc control power | |
| 103 Containment | 2.2.14 | Knowledge of the process for making configuration changes. | |

# PWR SRO Examination Outline

Printed: 08/14/2007

**Facility:** Loyah

**ES - 401** **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

| Sys/Evol # / Name | KA | KA Topic | Comment |
|---|---|---|---|
| 029 Containment Purge | 2.4.38 | Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator. | |
| 034 Fuel Handling Equipment | A2.02 | Dropped cask | |

## Generic Knowledge Abilities Outline (Tier 3)

Printed: 08/14/20(

## PWR SRO Examination Outline

**Form ES-401-3**

**Facility:** Sequoyah

| Generic Category | KA | KA Topic | Comment |
|---|---|---|---|
| **Conduct of Operations** | 2.1.12 | Ability to apply technical specifications for a system. | |
| | 2.1.33 | Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. | |
| | | **Category Total:** | **2** |
| **Equipment Control** | 2.2.8 | Knowledge of the process for determining if the proposed change, test, or experiment involves an unreviewed safety question. | |
| | | **Category Total:** | **1** |
| **Radiation Control** | 2.3.1 | Knowledge of 10 CFR: 20 and related facility radiation control requirements. | |
| | 2.3.6 | Knowledge of the requirements for reviewing and approving release permits. | |
| | | **Category Total:** | **2** |
| **Emergency Procedures/Plan** | 2.4.9 | Knowledge of low power /shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies. | |
| | 2.4.49 | Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. | |
| | | **Category Total:** | **2** |
| | | **Generic Total:** | **7** |

| Tier / Group | Randomly Selected K/A | Reason for Rejection |
|---|---|---|
| | | No K/As rejected from SRO Outline submittal |
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**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

1. 003 G2.2.22 083

A Control Bank D Rod has dropped to the bottom of the core from 100% power.

Which ONE (1) of the following statements describes the BASES for restricting thermal power to less than or equal to 75%?

A. ✓ Ensures Fuel Rod Integrity is maintained.

B. Minimize AFD swings due to xenon redistribution.

C. Removes requirement to determine QPTR using incore probes.

D. Accident analysis remains valid at this power level for continued operation.

*A. Correct, Basis states restriction of thermal power provides assurance of fuel rod integrity during continued operation.*

*B. Incorrect, Not part of basis and lowering RX power can cause AFD swings. Plausible due to AFD being affected during a dropped rod event but power reduction is not to minimize AFD swings.*

*C. Incorrect, Not part of actions/basis for dropped rod. This action is from TS 3.2.4 QPTR. Plausible due to QPTR being affected by a dropped rod, and this is a restriction placed on determining QPTR with power above 75% power with an NI out of service.*

*D. Incorrect, Accident analysis must be performed to ensure analysis remains valid per Tech Spec action. Plausible due to Accident analysis being a TS action which must be performed.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 83

Tier 1 Group 2

K/A 000003 G2.2.22
Dropped Control Rod: Knowledge of limiting conditions for operations and safety limits.

Importance Rating: 3.4 / 4.1

Technical Reference: TS 3.1.3.1 and Basis

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271AOP-C.01 B6, B9

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

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: (CFR 43.2 / 45.2)

10CFR55.43.b (2)

Comments:

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCS | Time: | 1 | Points: | 1.00 | Version: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | | | | Answer: | A | A | A | A | A | A | A | A | A | A |

Items Not Scrambled

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | LOWER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

2. 005 AA2.03 084

Given the following:

- Unit 1 operating at 86% power when MFP 1A trips causing a Runback.
- As the rods are inserting the OATC observes in Bank D Group 1 remaining at 190 steps while the Bank D Group 2 rods are inserting as indicated by RPI and step counters.
- The OATC places the rod control to MANUAL stopping rod motion with Bank D Group 2 rods at 148 steps.

Which ONE of the following identifies the correct response to the rod misalignment per AOP-C.01, Rod Control System Malfunction?

A. Realign the Group 1 rods to the Group 2 rods per AOP-C.01.

B. Realign the Group 2 rods to the Group 1 rods per AOP-C.01.

C. Remove the Unit From Service within 6 hours using GOs

D✓ Trip the Reactor and Go to E-0, Reactor Trip or Safety Injection.

*A. Incorrect, Plausible due to AOP-C.01 contains steps to realign a misaligned rod to the bank,but not with the conditions stated in the question.*

*B. Incorrect, Plausible due to AOP-C.01 contains steps to realign a misaligned rod to the bank,but not with the conditions stated in the question.*

*C. Incorrect, with the rods >12 and <50 steps out of alignment, Plausible due to this could be correct if the rods were in a bank other than D.*

*D. Correct, AOP- C.01 directs - If multiple rods misaligned greater than 12 steps but no more than 50 steps each from respective banks (with the misaligned rods in Control Bank D) then TRIP the reactor and GO TO E-0, Reactor Trip or Safety Injection.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 84

Tier 1 Group 2

K/A 000005 AA2.03
Ability to determine and interpret the following as they apply to the Inoperable / Stuck Control Rod: Required actions if more than one rod is stuck or inoperable

Importance Rating: 3.5 / 4.4

Technical Reference: AOP-C.1, Rod control System Malfunction

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271AOP-C.01 B8

Question Source:
Bank # _____
Modified Bank # _____
New __X_____

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis __X_____

10 CFR Part 55 Content: 43.5 / 45.13

10CFR55.43.b (5)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D B C D B D A B D D Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

3. 008 A2.09 088

Given the following:

- Unit 1 is operating at 100% power.
- The RO has swapped from 120 gpm letdown to 75 gpm letdown.
- Shortly after the evolution, Letdown Hx temperature element 1-TE -62-78, begins to oscillate and then fails downscale low with 1-TCV-70-192 in automatic.
- The crew enters AOP-C.02, Uncontrolled RCS Boron Concentration Changes.

Which ONE (1) of the following correctly describes the INITIAL plant response to this malfunction AND which procedure section would you enter?

A. Actual Letdown temperature would increase, and after several minutes Tave would slowly decrease.
Section 2.2, Uncontrolled or Unplanned dilution in modes 1 or 2.

B. ✔ Actual Letdown temperature would increase, and after several minutes Tave would slowly decrease.
Section 2.1, Uncontrolled or Unplanned boration in modes 1 or 2.

C. Actual Letdown temperature would decrease, and after several minutes Tave would slowly increase.
Section 2.2, Uncontrolled or Unplanned dilution in modes 1 or 2.

D. Actual Letdown temperature would decrease, and after several minutesT ave would slowly increase.
Section 2.1, Uncontrolled or Unplanned boration in modes 1 or 2.

*A. Incorrect. The first part would be correct, Ltdn temp would increase resulting in Boration and Tave lowers. AOP-C.02 section 2.1, Uncontrolled or Unplanned dilution would be correct due to Boration. Plausible if student does not know which procedure would be applicable for given conditions.*

*B. Correct. Ltdn temp would increase. resulting in Boration and Tave lowers. AOP-C.02 section 2.1, Uncontrolled or Unplanned dilution would be correct due to Boration.*

*C. Incorrect.Ltdn temp would increase. resulting in Boration and Tave lowers. AOP-C.02 section 2.1, Uncontrolled or Unplanned dilution would be correct due to Boration. Plausible if student believes letdown temp would decrease causing a positive reactivity addition this would be a correct procedure to implement for students error in effect on reactivity.*

*D. Incorrect. Ltdn temp would increase. resulting in Boration and Tave lowers. AOP-C.02 section 2.1, Uncontrolled or Unplanned dilution would be correct due to Boration which is the correct procedure. Plausible if student believes letdown temp would decrease for this condition.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 88

Tier 2 Group 1

K/A 008 A2.09
Component Cooling Water: Ability to (a) predict the impacts of the following malfunctions or operations on the CCWS, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Results of excessive exit temperature from the letdown cooler, including the temperature effects on ion-exchange resins.

Importance Rating: 2.3 / 2.8

Technical Reference: CCS Mech Logic Diagram 1,2-47W611-70-2.
AOP-C.02.

Proposed references to be provided to applicants during examination: none

Learning Objective: OPT200.CVCS B.5.d

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

Question History: SQN NRC Exam 1/2008,Votgle draft 2006 Exam question #3 Modified

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: (CFR 41.5 / 43.5 / 45.3 / 45.13)

10CFR55.43.b (6) (5)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: B D D C B A B D B C Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | BANK MOD | Source If Bank: | VOGTLE |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

4. 008 G2.4.49 076

Given the following:

- Unit 1 was operating at 100% RTP with CCP 1B-B tagged for maintenance
- A Reactor trip/Safety injection occurred due to a LOCA
- The operating crew entered E-0, Reactor Trip or Safety Injection and currently are performing Step 6,
  DETERMINE if secondary heat sink available.
- The OATC reports the following conditions are:
  - Pressurizer level 100%
  - RCS pressure 1370 psig and dropping
  - Containment pressure is 3 psig and rising
- The CRO reports the following:
  - DIESEL GEN 1A-A UNIT LOCKOUT AUTO START RDY FAILURE annunciator is LIT.

Which ONE (1) of the following is the correct SRO direction to the operators and procedure flow path to be taken?

A. Manually start Diesel Gen 1A-A and immediately transition to E-1, Loss of Reactor or Secondary Coolant

B. Manually start Diesel Gen 1A-A and continue in E-0, Reactor Trip or Safety Injection

C. Stop the Reactor Coolant Pumps and immediately transition to E-1, Loss of Reactor or Secondary Coolant

D. Stop the Reactor Coolant Pumps and continue in E-0, Reactor Trip or Safety Injection

*A. Incorrect, Plausible due to EG should have started due to SI signal but is not required given current plant conditions with power available. (Stopping the RCPs is). The transition to E-1 will be made but not until the Step is reached in the procedure.*

*B. Incorrect, Plausible due to EG should have started due to SI signal but is not required given current plant conditions with power available. (Stopping the RCPs is). Continuing in E-0 is the correct procedure flow path.*

*C. Incorrect, Stopping the RCPs is the required action at this point in the procedure (even though the step to stop the pumps has not been reached in E-0) due to the RCP trip criteria being on the Fold Out page. Plausible due to transition to E-1 will be made but not until the Step is reached in the procedure.*

*D. Correct, Stopping the RCPs is the required action at this point in the procedure (even though the step to stop the pumps has not been reached in E-0) due to the RCP trip criteria being on the Fold Out page. Continuing in E-0 is the correct procedure flow path.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 76

Tier 1 Group 1

K/A 000008 G2.4.49
Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.

Importance Rating: 4.0 / 4.0

Technical Reference: E-0, Reactor Trip or safety Injection

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271E-0 B5, B6

Question Source:
Bank # _____
Modified Bank # _____
New __X_____

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis __X_____

10 CFR Part 55 Content: 41.10 / 43.2 / 45.6

10CFR55.43.b (5)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D D A C A C D A C C Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

5. 010 G 2.4.38 089

If the Reactor Cooling System pressure exceeded the Technical Specification Safety Limit, which ONE (1) of the following identifies the maximum time allowed for each of the following?

1. Pressure restored to less than Safety Limit
2. REP declaration

| | **Pressure Restored** | **REP Declaration** |
|---|---|---|
| A. | 5 minutes | 5 minutes |
| B.✔ | 5 minutes | 15 minutes |
| C. | 15 minutes | 15 minutes |
| D. | 15 minutes | 5 minutes |

*A. Incorrect, The time to restore pressure is 5 minutes per T/S 2.1.2. The time for the REP declaration is 15 minutes. Plausible because there is a 5 minute notification requirement to the ODS after the event is declared.*

*B. Correct, The time to restore pressure is 5 minutes per T/S 2.1.2. The time for the REP declaration is 15 minutes.*

*C. Incorrect, The time to restore pressure is 5 minutes per T/S 2.1.2 not 15 as stated in the distractor. Plausible because the time for the REP declaration is 15 minutes as stated in the distractor and the candidate could mistake the time to be the time to restore an inoperable RCS safety valve in accordance with LCO 3.4.3.1 whcih is 15 minutes.*

*D. Incorrect, The time to restore pressure is 5 minutes per T/S 2.1.2 not 15 as stated in the distractor. The time for the REP declaration is 15 minutes versus 5 minutes in distractor. Plausible because there is a 5 minute notification notification requirement to the ODS after the event is declared.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 89

Tier 2 Group 1

K/A 010 Pressurizer Pressure Control System G 2.4.38
Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator

Importance Rating: 2.2 / 4.0

Technical Reference: Technical Specifications 2.1.2
Radiological Emergency Plan EPIP-1

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271REP 2, OPT200.PZRPCS B6

Question Source:
Bank # _____
Modified Bank # _____
New __X_____

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge __X_____
Comprehension or Analysis _____

10 CFR Part 55 Content: 43.5 / 45.11

10CFR55.43.b (1, 2)

Comments:
MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: B D B D C C A A B A Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | LOWER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

6. 013 A2.05 090

Given the following:

- Unit 1 at 100% power
- Following a Reactor Trip/Safety Injection, the OATC observes the following:
  - Annunciator "125V DC VITAL CHARGER II FAILURE OR VITAL BAT II DISCHARGE" ON 1-M-1 panel LIT
  - Train B ECCS pumps NOT running

Which ONE (1) of the following identifies the reason the Train B ECCS pumps may not be running **AND** the direction the US should provide the operator to restore the pumps to running?

A. Loss of control power to SSPS Train B slave relays.
Manually start the Train B pumps from the MCR switches per EPM-4, User' Guide, Prudent Operator Actions.

B. Loss of control power to SSPS Train B slave relays.
Manually align control power to Channel IV per 0-SO-250-10, 6900V Shutdown Board DC Control Bus Transfer.

C. Loss of control power to the 6900v Shutdown Board.
Manually start the Train B pumps from the MCR switches per EPM-4, User's Guide Prudent Operator Actions.

D✓ Loss of control power to the 6900v Shutdown Board.
Manually align control power to Channel IV per 0-SO-250-10, 6900V Shutdown Board DC Control Bus Transfer.

*A. Incorrect, Loss of Control Power for the slave relay would prevent the pump from starting. Control power to SSPS Train B slave relays is from Channel II 120v AC Vital and not from the Channel II 125v DC. Candidate could confuse the 2 power supplies. If the failure had been due to slave relays, then the Prudent Operator Action would have been correct.*

*B. Incorrect, Loss of Control Power for the slave relay would prevent the pump from starting. Control power to SSPS Train B slave relays is from Channel II 120v AC Vital and not from the Channel II 125v DC. Candidate could confuse the 2 power supplies. While 125v DC control Power to the board can be transferred, the control power to the slave relays cannot be transferred.*

*C. Incorrect, Loss of control power to the 6900v Shutdown Board would bring in the alarm and without the control power the pumps would not start. without control power to the board, the Prudent Operator Action attempt would have no effect on starting the pumps.*

*D. Correct, Loss of control power to the 6900v Shutdown Board would bring in the alarm and without the control power the pumps would not start. Control Power can be manually transferred to Alternate Channel IV using the SO*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 90

Tier 2 Group 1

K/A 013 A2.05
Ability to (a) predict the impacts of the following malfunctions or operations on the ESFAS; and (b) based Ability on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations; Loss of dc control power

Importance Rating: 3.7 / 4.2

Technical Reference: AOP-P.02, and 0-SO-250-10, 6900V Shutdown Board DC Control Bus Transfer, 1-AR-M1-C (B-4)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271AOP-P.02 B2 & 8

Question Source:
Bank # _____
Modified Bank # _____
New __X_____

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis __X_____

10 CFR Part 55 Content: 41.5 / 43.5 / 45.3 / 45.13

10CFR55.43.b (5)

Comments:
MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D D C A B C C C B B Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

7. 029 EA2.09 077

Given the following:

- Unit 1 operating at 100% power when an ATWS occurred following the trip of both MFPTs.
- The crew entered the EOP network and transitioned to FR-S.1, Nuclear Power Generation / ATWS.
- All S/G water levels are approximately 4% narrow range and dropping with ONLY the AFW pump 1A-A in service supplying 455 gpm to S/Gs.
- At the time of transition the OATC determines that the following occur in rapid succession:
  - RCS temperature and pressure increasing rapidly
  - Both Pressurizer PORVs open
  - PRT temperature and pressure increasing

Which ONE (1) of the following identifies BOTH the current status of the turbine and the correct procedure transition when FR-S.1 actions are complete?

A. ✔ The turbine is tripped;
Return to E-0, Reactor Trip or Safety Injection

B. The turbine is tripped;
Implement FR-H.1, Loss of Secondary Heat Sink

C. The turbine is NOT tripped, but must be tripped within 30 seconds;
Return to E-0, Reactor Trip or Safety Injection

D. The turbine is NOT tripped, but must be tripped within 30 seconds;
Implement FR-H.1, Loss of Secondary Heat Sink

*A. Correct, The trip of both MFPs is a turbine trip signal and the turbine is tripped as indicated by the heatup and pressurization of the RCS (if the turbine was not tripped, the RCS would be cooling down and depressurizing) Heat Sink requirement are met even though the S/G level is less than 10%, the AFW flow is above the requirement of 440 gpm.*

*B. Incorrect, Plausible is student believes Heat Sink requirements are not met with S/G level is less than 10%, the AFW flow is above the requirement of 440 gpm for heat removal.*

*C. Incorrect, Plausible is student believes turbine is not tripped and knows that 30 seconds is the time requirement to trip the turbine following an ATWS event to prevent the loss of steam generator inventory if the initiating event is a loss of feed water (the condition identified in the stem). E-0 is the correct transition for the conditions identified in the stem.*

*D. Incorrect, Plausible is student believes turbine is not tripped and knows that 30 seconds is the time requirement to trip the turbine following an ATWS event to prevent the loss of steam generator inventory if the initiating event is a loss of feed water (the condition identified in the stem). Heat Sink requirements are met even though the S/G level is less than 10%, the AFW flow is above the requirement of 440 gpm.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 77

Tier 1 Group 1

K/A 000029 EA2.09
ATWS: Ability to determine or interpret the following as they apply to a ATWS:
Occurrence of a main turbine/reactor trip

Importance Rating: 4.4 / 4.5

Technical Reference: FR-S.1, Nuclear Power Generation / ATWS
EPM-3-FR-S.1,Basis Document for FR-S.1, Nuclear Power Generation / ATWS
FR-0, Status Trees

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271FR-S.1 B5, B7

Question Source:
Bank # _____
Modified Bank # ___X_____
New _____

Question History: SQN NRC Exam 1/2008, INPO Bank S029EA2.09 1Robinson 9/27/04

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis __X_____

10 CFR Part 55 Content: 43.5 / 45.13

10CFR55.43.b (5)

Comments:

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCS | Time: | 1 | Points: | 1.00 | Version: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | | | | Answer: | A | A | B | D | C | D | C | D | A | C |

Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | BANK MOD | Source If Bank: | ROBINSON |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

8. 029 G2.4.46 092

Given the following:

- Unit 1 is in MODE 4 with Heatup in Progress
- Unit 2 is in MODE 6 with core reload in progress

Which ONE (1) of the following identifies a condition where the associated Unit's Containment Purge would be required to be shutdown, **but** would continue to run until an Operator MANUALLY shutdown the purge?

A. Annunciator, 1-RA-90-131A CNMT PURGE AIR EXH MON HIGH RAD, alarms with Unit 1 Upper Containment Purge in progress.

B. Annunciator, 0-RA-90-101A AUX BLDG VENT MONITOR HIGH RAD, alarms with Unit 1 Lower Containment Purge in progress.

C. Annunciator, 2-RA-90-131A CNMT PURGE AIR EXH MON HIGH RAD, alarms with Unit 2 Lower Containment Purge in progress.

D✓ Annunciator, 0-RA-90-101A AUX BLDG VENT MONITOR HIGH RAD, alarms with Unit 2 Upper Containment Purge in progress.

*A. Incorrect, Plausible if student does not remember that 1-RM-90-131 would automatically shutdown the U-1 purge and manual shutdown is not required.*

*B. Incorrect, Plausible due to 0-RM-90-101 will initiate an ABI, however, Manual shutdown of purge is NOT required due to the ABI if U-1 is in Mode 4.*

*C. Incorrect, Plausible if student does not remember that 2-RM-90-131 would automatically shutdown the U-2 purge and manual shutdown is not required.*

*D. Correct, 0-RM-90-101 will initiate an ABI and if the Unit is in MODE 5, 6, or defueled, an operator must manually shutdown the U-2 purge.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 92

Tier 2 Category 2

K/A 029 G 2.4.46
Ability to verify that the alarms are consistent with the plant conditions.

Importance Rating: 3.5 / 3.6

Technical Reference: 0-SO-30-3, 1,2-47W611-30-6, 0-AR-M12-B (B-1 and B-2)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPT200.CONTPURGE B5

Question Source: New

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level: Higher

10 CFR Part 55 Content: 43.5 / 45.3 / 45.12

10CFR55.43.b (7) (4)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D A A D B D D C C A Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

9. 034 A2.02 093

You are the Fuel Handling SRO for receiving new fuel. As a new fuel cask is being lifted from the transport truck, the lifting slings break and the cask drops to the ground. Initial inspections indicate extensive damage to one fuel assembly.

Per AOP-M.04, Refueling Malfunctions, which of the following actions is correct concerning movement of the damaged fuel assembly?

A. May begin with Fuel Handling SRO and Shift Manager approval.

B. May begin with Fuel Handling SRO and Rad Protection Manager approval.

C. Must be suspended until recovery instructions are approved by the Operations Manager.

D✔ Must be suspended until recovery instructions are approved by the Plant Manager.

*A. Incorrect, Plausible if student does not know recovery instructions are required. Fuel Handling SRO approval for fuel movement is normally required. Also since damage occured SM approval would be a good distractor.*

*B. Incorrect, Plausible if student does not know recovery instructions are required. Fuel Handling SRO approval for fuel movement is normally required. Also since damage occured* Rad Protection Manager *approval would be a good distractor.*

*C. Incorrect, Plausible if student knows recovery instructions are required prior to moving damaged fuel assembly, and since operations is in charge of the movement the Operations Manager is a good distractor.*

*D. Correct,* Must be suspended until recovery instructions are approved by the Plant Manager.

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 93

Tier 2 Group 2

K/A 034 A2.02
Fuel Handling Equipment: Ability to (a) predict the impacts of the following malfunctions or operations on the Fuel Handling System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Dropped cask.

Importance Rating: 3.4 / 3.9

Technical Reference: AOP-M.04 Refuleing Malfunctions

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271AOP-M.04 B5 and 8

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

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: (CFR 41.5 / 43.5 / 45.3 / 45.13)

10CFR55.43.b (7)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D B B B C D A A B C Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | LOWER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

10. 051 AA2.02 085

Given the following:

- Unit 1 turbine load is at 40%
- A condenser vacuum is being loss due to air in leakage
- Operators have entered AOP-S.02, Loss of Condenser Vacuum, and are decreasing turbine load in an attempt to maintain vacuum
- Condenser pressure is 1.9 psia and increasing at 0.1 psia/minute

Which ONE (1) of the following is the correct action(s) for the current conditions?

A. Trip the turbine and GO TO AOP-S.06, Turbine Trip, due to condenser pressure being >1.72 psia.

B. Trip the Reactor and GO TO E-0, Reactor Trip or Safety Injection, due to condenser pressure being >1.72 psia.

C. Continue in AOP-S.02, if condenser pressure exceeds 2.7 psia and can NOT be restored within 5 min, Trip the turbine and GO TO AOP-S.06, Turbine Trip.

D✓ Continue in AOP-S.02 if condenser pressure exceeds 2.7 psia and can NOT be restored within 5 min, Trip the Reactor and GO TO E-0, Reactor Trip or Safety Injection.

*A. Incorrect, Plausible due to Turbine trip would be required if the load were less than 30% with pressure >1.72 psia.*

*B. Incorrect, Plausible due to Reactor trip would be required if the condenser pressure exceeded 2.7 psia and could not be restored to less than 2.7 psia within 5 minutes. The 1.72 setpoint is associated with turbine trip at less than 30% load.*

*C. Incorrect, Plausible due to with load greater than 30%, if the condenser pressure exceeds 2.7 psia and cannot be restored within 5 minutes, then a Reactor trip is required, NOT a Turbine trip.*

*D. Correct. With load greater than 30%, if the condenser pressure exceeds 2.7 psia and cannot be restored within 5 minutes, then a Reactor trip is required,*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 85

Tier 1 Group 2

K/A 051 AA2.02
Ability to determine and interpret the following as they apply to the Loss of Condenser Vacuum:Conditions requiring reactor and/or turbine trip

Importance Rating: 3.9 / 4.1

Technical Reference: AOP-S.02, Loss of Condenser Vacuum

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271AOP-S.02 B2, B8

Question Source:
Bank # _____
Modified Bank # _____X____
New _____

Question History: SQN NRC Exam 1/2008, SQN Bank Mod AOP-S.02-B.2 014

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis ___X_____

10 CFR Part 55 Content: 43.5 / 45.13

10CFR55.43.b (5)

Comments:

MCS Time: 3 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D D D D D D D D D D Items Not Scrambled

| | | | |
|---|---|---|---|
| Source: | BANK MOD | Source If Bank: | SQN |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

11. 054 AA2.05 078

Given the following:

- Unit 1 at 2% power, startup in progress in accordance with GO-3, Power Ascension from Reactor Critical to Less than 5 Percent Reactor Power.
- The TD AFW pump is out if service for the past 1 hour and LCO 3.7.1.2. is the only T/S action statement in effect.
- The MFW Bypass Reg valves are controlling steam generator levels in AUTO.
- Main Feed Pump (MFP) 1A in service.
- Motor Driven Auxiliary Feedwater Pumps have been stopped and placed in A-P AUTO

If all 4 SG levels were at 28% and dropping following an inadvertent Feedwater Isolation, which ONE (1) of the following identifies the status of the MFW Bypass Reg Valves and the procedure to be implemented to stabilize the unit?
(assuming NO operator action and all equipment works as designed)

A. MFW Bypass Reg Valves would be closed ;
AOP-S.01, Loss of Normal Feedwater, would be used to stabilize the unit.

B. MFW Bypass Reg Valves would be closed;
E-0, Reactor Trip or Safety Injection, would be used to stabilize the unit.

C. MFW Bypass Reg Valves would be opening;
AOP-S.01, Loss of Normal Feedwater, would be used to stabilize the unit.

D. MFW Bypass Reg Valves would be opening;
E-0, Reactor Trip or Safety Injection, would be used to stabilize the unit.

*A. Correct, The valve would be closed due to the FWI, even with the SG levels dropping and Bypass reg valve controllers sending signal to open the valves. The power level is within the capability of AFW and the AFW pumps would start due MFP 1B having control power on its trip bus and be in the tripped state resulting in both MFPTs tripped which starts AFW pumps and controlling SG levels.*

*B. Incorrect, The valve would be closed due to the FWI, even with the SG levels dropping and Bypass reg valve controllers sending signal to open the valves. AFW water would automatically start and SG levels would be restored therefore the reactor would not trip. Plausible because with both MFPs tripped at higher power levels, the result is either a turbine trip reactor trip or low S/G level reactor trip thus making E-0 the correct procedure.*

*C. Incorrect, Due to SG levels dropping, Bypass reg valve controllers would be sending signal to open the valves but the FWI would have the valves closed.The valve would be closed due to the FWI, even with the SG levels dropping and Bypass reg valve controllers sending signal to open the valves. The power level is within the capability of AFW and the AFW pumps would start due MFP 1B having control power on its trip bus and be in the tripped state resulting in both MFPTs tripped which starts AFW pumps and controlling SG levels. Plausible because the reg valve would normally be responding to the low S/G levels by modulating opening.*

*D. Incorrect, Due to SG levels dropping, Bypass reg valve controllers would be sending signal to open the valves but the FWI would have the valves closed. AFW water would automatically start and SG levels would be restored therefore the reactor would not trip. Plausible because the reg valve would normally be responding to the low S/G levels by modulating opening and because with both MFPs tripped at higher power levels, the result is either a turbine trip/reactor trip or low S/G level reactor trip thus making E-0 the correct procedure.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 78

Tier 1 Group 1

K/A 054 AA2.05
Ability to determine and interpret the following as they apply to the Loss of Main Feedwater (MFW): Status of MFW pumps, regulating and stop valves

Importance Rating: 3.5 / 3.7

Technical Reference: AOP-S.1, Loss of Normal Feedwater

Proposed references to be provided to applicants during examination: None

Learning Objective: OPT200.MFW B4, OPL271AOP-S.01 B2

Question Source:
Bank # _____
Modified Bank # _____
New ___X_____

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis __X_____

10 CFR Part 55 Content: 43.5 / 43.13

10CFR55.43.b (5)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A D C D B D B A C A Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

12. 057 AA2.17 079

Given the following:

- Unit 2 is operating at 100% RTP when a transient causes a reactor trip
- The Operating Crew implements E-0. Reactor Trip or Safety Injection, Transitions to ES-0.1, Reactor Trip Response and stabilizes the plant
- The operating crew observes the following:
  - Steam dump valves CLOSED
  - S/G Atmospheric Relief Valves Operating
  - First Out annunciators DARK
  - All SSPS status lights DARK

Which ONE (1) of the following identifies the correct section of AOP-P.04, Loss of Unit 2 Vital Instrument Power Board, the crew should implement, and the current status of the T/D AFW pump?

A. Section for loss of Vital Instrument Power Board 2-I;
T/D AFW pump turbine Trip&Throttle valve would remain closed until control was transferred locally.

B. ✓ Section for loss of Vital Instrument Power Board 2-1;
T/D AFW pump would be running at minimum speed until control was transferred locally.

C. Section for loss of Vital Instrument Power Board 2-III;
T/D AFW pump turbine Trip&Throttle valve would remain closed until control was transferred locally.

D. Section for loss of Vital Instrument Power Board 2-III;
T/D AFW pump would be running at minimum speed until control was transferred locally.

*A. Incorrect, 2-I board has failed as identified by the Status light and first out annunciators. The pump would start due to having DC power but the speed controller would be deengerized until the supply was transferred locally. Plausible if the candidate mistakenly thinks that the effect on the AFWPT would be not stating instead of the real effect of the loss of the speed control circuit.*

*B. Correct, Section 2-I details the loss of all SSPS channel status lights, TDAFW pump running at minimum speed, and the failure of the first out annunciators.*

*C. Incorrect, Identified condition of Status light and first out identify the failure as 2-I board, NOT 2-III TD AFW pump speed control Normal feed is from Channel III on Unit 1, but is from Channel I on Unit 2. Plausible if the candidate confuses the power supplies between the units or mistakenly thinks that the effect on the AFWPT would be not stating instead of the real effect of the loss of the speed control circuit.*

*D. Incorrect, Identified condition of Status light and first out identify the failure as 2-I board, NOT 2-III. The status of the TD AFW pump would be with the pump running at minimum speed. Plausible if the candidate confuses the power supplies between the units but correctly identifies to effect on the speed control circuit.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 79

Tier 1 Group 1

K/A 000057 AA2.17
Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: System and component status, using local or remote controls

Importance Rating: 3.1/ 3.4

Technical Reference: AOP-P.04, Loss of Unit 2 Vital Instrument Power Board

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271AOP-P.03 & P.04 B2, B6

Question Source:
Bank # _____
Modified Bank # _____
New ___X_____

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis __X_____

10 CFR Part 55 Content: 43.5 / 45.13

10CFR55.43.b (5)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: B C B A B A B C A C Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

13. 065 AA2.01 080

Given the following:

- Unit 1 is in MODE 4 following a Refuel Outage.
- Fuel shuffle is being performed in the Spent Fuel Pit
- ABGTS Train B is tagged for heater bank inspection.
- Annunciator PS-32-104 TRAIN A AUX CONTROL AIR PRESSURE LOW alarms
- AUO reports the Train A Aux air is isolated from station air, Train A Aux Air Compressor running and the Train A header is 67 psig and slowly dropping.

Which ONE (1) of the following identifies the action required per Unit 1 Technical Specifications regarding the status of ABGTS?

A. ABGTS Train A remains OPERABLE until the Train A Containment Air Isolation valve automatically closes, at which time operations involving fuel movement in the Spent Fuel Pit must be suspended. LCO 3.0.3 would NOT be applicable

B. ABGTS Train A remains OPERABLE until the Train A Containment Air Isolation valve automatically closes, at which time operations involving fuel movement in the Spent Fuel Pit must be suspended and LCO 3.0.3 would be applicable.

C. Both ABGTS Trains are INOPERABLE, suspend operations involving fuel movement in the Spent Fuel Pit. LCO 3.0.3 is NOT applicable

D. Both ABGTS Trains are INOPERABLE, suspend operations involving fuel movement in the Spent Fuel Pit and comply with LCO 3.0.3.

*Question requires the knowledge of when the air system can not support the systems that require air and the application of 2 Technical Specifications for ABGTS. Plant Systems LCO 3.7.8 Auxiliary Building Gas Treatment System and Refueling Operations LCO 3.9.12 Auxiliary Building Gas Treatment System.*

A. *Incorrect, per the ARI for the alarm identified in the stem (and AOP-M.2, Loss of Control Air) if the air pressure is less than 70 psig then control air is inoperable (and it is not covered by a T/S of its own.) The ABGTS is one the systems affected by the loss of air. Thus, the Train A ABGTS must be declared Inoperable. The Train A Containment Air Isolation valve automatically closing is plausible due to it occuring at a pressure setting air on decreasing air pressure. The suspension of tuel movement is a required action in LCO -3.9.12 if no ABGTS train is operable making the distractor more plausible.*

B. *Incorrect, per the ARI for the alarm identified in the stem (and AOP-M.2, Loss of Control Air) if the air pressure is less than 70 psig then control air is inoperable (and it is not covered by a T/S of its own.) The ABGTS is one the systems affected by the loss of air. Thus, the Train A ABGTS must be declared Inoperable. The Train A Containment Air Isolation valve automatically closing is plausible due to it occurring at a pressure setting air on decreasing air pressure. The suspension of fuel movement is a required action in LCO -3.9.12 if no ABGTS train is operable making the distractor more plausible and the distractor also has the correct application of LCO 3.30.3 as required by LCO -3.7.8 due to being in Mode 4.*

C. *Incorrect, Both trains of ABGTS are Inoperable (B- tagged and A-due to low air pressure as identified in the ARI and in AOP-M.2, Loss of Control Air) Plausible if the candidate remembers that LCO-3.0.3 is identified as not being applicable in LCO 3.9.12 which is applicable due to the movement of irradiated fuel in the storage pool, but does not remember LCO 3.7.8 is also applicable due to the plant being in Mode 4. LCO 3.0.3 is applicable for not meeting 3.7.8 and not having an identified action statement that can be applied.*

D. *Correct,Both trains of ABGTS are Inoperable (B- tagged and A-due to low air pressure as identified in the ARI and in AOP-M.2, Loss of Control Air) LCO 3.9.12 is applicable due to having irradiated fuel in the pit and requires the movement of irradiated fuel in the storage pool be stopped. while not applicable for LCO 3.9.12, LCO 3.0.3 is applicable for not meeting 3.7.8 due to not having an identified action statement that can be applied.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 80

Tier 1 Group 1

K/A 065 AA2.01
Ability to determine and interpret the following as they apply to the Loss of Instrument Air: Cause and effect of low-pressure instrument air alarm

Importance Rating: 2.9 / 3.2

Technical Reference: 1-AR-M15-B (A-4)
AOP-M.2, Loss of Control Air
Plant Systems T/S 3.7.8, Auxiliary Building Gas Treatment System
Refueling Operations T/S 3.9.12, Auxiliary Building Gas Treatment System
1,2-47W611-32-2

Proposed references to be provided to applicants during examination: None

Learning Objective: OPT200.ABGTS B6

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

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: **43.5 / 45.13**

10CFR55.43.b (2)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D B B A A C A A B D Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

14. 103 G 2.2.14 091

Given the following:

- Unit 1 is being shutdown for a refueling outage.
- Operating crew is performing 0-GO-7, Unit Shutdown From Hot Standby To Cold Shutdown.

Which ONE (1) of the following identifies when Containment Closure Control is required to be implemented in accordance with 0-GO-15, Containment Closure Control, **AND** who will maintain the listing of Containment Closure Exceptions in effect?

| | **Required When** | **Containment Closure Exceptions Maintained by** |
|---|---|---|
| A. | When Unit enters Mode 5 | Operations Work Control Center(WCC) US |
| B. | When Unit enters Mode 5 | Unit 1 SRO |
| C. | When RHR is placed in service | Operations Work Control Center(WCC) US |
| D. | When RHR is placed in service | Unit 1 SRO |

*A. Correct, 0-GO-7 states that 0-GO-15 , Containment Closure Control, is to be implemented to track containment configuration changes when the unit enters Mode 5. 0-GO-7 identifies the WCC US as maintaining the Appendix tracking containment closure exceptions.*

*B. Incorrect, 0-GO-7 states that 0-GO-15 , Containment Closure Control, is to be implemented to track containment configuration changes when the unit enters Mode 5. 0-GO-7 identifies the WCC US as maintaining the Appendix tracking containment closure exceptions. Plausible because the GO requires the unit SRO to maintain awareness of the exceptions and to inform the WCC US of changes on the unit that could affect allowable closure times.*

*C. Incorrect, 0-GO-15 purpose statement says the GO provides the requirements for Containment Closure Control in the event of a loss of RHR shutdown cooling, making the implementation fo the GO when RHR is placed in service plausible, however, the correct implementation is when the Unit enters Mode 5.*

*D. Incorrect, 0-GO-15 purpose statement says the GO provides the requirements for Containment Closure Control in the event of a loss of RHR shutdown cooling, making the implementation fo the GO when RHR is placed in service plausible, however, the correct implementation is when the Unit enters Mode 5. Plausible because the GO requires the unit SRO to maintain awareness of the exceptions and to inform the WCC US of changes on the unit that could affect allowable closure times.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 91

Tier 2 Group 1

K/A 103 Containment Systems G 2.2.14
Knowledge of the process for making configuration changes.

Importance Rating: 2.1 / 3.0

Technical Reference: 0-GO-15, *Containment Closure Control*

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271GO-15 B.1 and B.4

Question Source:
Bank # _____
Modified Bank # _____
New ___X_____

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge ___X_____
Comprehension or Analysis _____

10 CFR Part 55 Content: 43.3 / 45.13

10CFR55.43.b (4, 5)

Comments:

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCS | Time: | 1 | Points: | 1.00 | Version: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | | | | Answer: | A | A | A | A | C | D | C | C | B | C |

Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | LOWER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

15. G 2.1.12 094

Given the following:

- Both units in MODE 1.
- The following data resulted from the **weekly** testing of on 125v DC Vital Battery III.
  - Battery on float charge.
  - Battery Terminal Voltage 133v dc.
  - Battery charging current is 2.2 amps.
  - Battery Room and Electrolyte temperature is 68°F
  - Cell electrolyte level is between minimum and maximum marks.
  - Cell voltage is 2.11v dc.
  - Corrected Specific Gravity is 1.197.

Which ONE (1) of the following identifies the Unit 1 T/S required actions regarding the 125v DC Vital Battery III?

**REFERENCE PROVIDED**

A. Immediately declare INOPERABLE due to Category A criteria, restore to OPERABLE status within the next 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

B. Immediately declare INOPERABLE due to Category B criteria, restore to OPERABLE status within the next 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

C. May be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all parameter(s) are restored to within limits within the next 6 days.

D. May be considered OPERABLE provided all Category B measurements are within their allowable values and provided the parameter(s) are restored to within limits within the next 7 days.

*A. Incorrect, The conditions stated do not require declaring INOPERABLE even though the cell Float Voltage limit and Specific Gravity limit are NOT met due to the weekly test are to verify that the pilot cell parameters meet Category A limits and if they do not, then footnote (1) provides for considering the battery operable provided Category B measurements are taken within 24 hours and found to be within their allowable values. Plausible because if the footnote (1) is not used correctly, the candidate could choose this response. The actions stated are the actions for not meeting the LCO.*

*B. Incorrect, The conditions stated do not require declaring INOPERABLE even though the Float Voltage is below the Category B limit, there has been no correction for temperature as identified by (c) and the voltage is above the Category B allowable value . The weekly test are to verify that the pilot cell parameters meet Category A limits and do not measure to verify all Category B criteria. Plausible because if the footnotes (1), (2), and (c) are not used correctly, the candidate could choose this response. The actions stated are the actions for not meeting the LCO.*

*C. Correct, The weekly test measure to verify the pilot cell meets the Category A limits and if as in this case the Float voltage and the Specific Gravity limit are not met, then footnote (1) contains the required actions which are as stated in the answer.*

*D. Incorrect, This choice which is footnote (2) would result in a failure to meet the 24 hour requirement to perform the Category B measurements and also could extend the time to restore the parameters to within allowable values. Plausible if the candidate applies footnote (2) due to the Float Voltage being below the Category B limit listed.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 94

Tier 3

K/A G 2.1.12
Ability to apply technical specifications for a system

Importance Rating: 2.9 / 4.0

Technical Reference: T/S, Electrical Power Systems D.C. Distribution - Operating, LCO 3.8.2.3

Proposed references to be provided to applicants during examination:**T/S 3.8.2.3 (4 pages)**

Learning Objective: OPT200.DC B6

Question Source:

Bank # _____
Modified Bank # _____
New X

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:

Memory or fundamental knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 43.2 / 43.5 / 45.3

10CFR55.43.b (2)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C B D C C D D B C B Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

16. G 2.1.33 095

Given the following:

- Unit 2 is in Mode 5 making preparations to enter Mode 4.
- At 0130 the Control Room Emergency Ventilation system (CREVS) Train B was started and placed in the recirculation mode.
- At 0200 the CREVS Train A was removed from service for heater repair, with repairs expected to be completed in 12 hours.
- At 0530 the CREVS Train B breaker tripped on overload.

Which ONE (1) of the following describes the correct Tech Spec application for this condition AND the basis for this Tech Spec?

A. Mode 4 can be entered as long as one train of CREVS is restored to operable status and running in recirculation mode, without requiring a risk assessment.

   Limits the radiation exposure to personnel in the control room to 5 rem or less whole body following all credible accident conditions.

B. Mode 4 can be entered as long as one train of CREVS is restored to operable status and running in recirculation mode, without requiring a risk assessment.

   Limits the radiation exposure to personnel in the control room to 0.5 rem or less whole body following all credible accident conditions.

C✓ Suspend movement of all irradiated fuel assemblies.

   Limits the radiation exposure to personnel in the control room to 5 rem or less whole body following all credible accident conditions.

D. Suspend movement of all irradiated fuel assemblies.

   Limits the radiation exposure to personnel in the control room to 0.5 rem or less whole body following all credible accident conditions.

*A. Incorrect, Plausible due to action is consistant with actions within the Tech Spec however TS 3.0.4b would require a risk assessment to be performed to shift modes. Limiting control room personnel to 5 rem or less whole body following all credible accident conditions is correct per the basis.*

*B. Incorrect, Plausible due to action is consistant with actions within the Tech Spec however TS 3.0.4b would require a risk assessment to be performed to shift modes. Limiting control room personnel to 0.5 rem or less whole body following all credible accident conditions is incorrect however plausible due to 0.5 is a limit, but based on limits for curie content of gas decay tanks (Total body exposure to an individual at the nearest exclusion area boundary will not exceed 0.5 rem).*

*C. Correct, Per Tech Spec 3.7.7 suspend movement of all irradiated fuel assemblies is correct, and per the basis Limits the radiation exposure to personnel in the control room to 5 rem or less whole body following all credible accident conditions.*

*D. Incorrect, Per Tech Spec 3.7.7 suspend movement of all irradiated fuel*

*assemblies is correct. Limiting control room personnel to 0.5 rem or less whole body following all credible accident conditions is incorrect however*

*plausible due to 0.5 is a limit, but based on limits for curie content of gas decay tanks (Total body exposure to an individual at the nearest exclusion*

*area boundary will not exceed 0.5 rem).*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 95

Tier 3

K/A G 2.1.33
Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.

Importance Rating: 3.4 / 4.0

Technical Reference: Tech Spec 3.7.7 and basis, Tech Spec 3.0.4

Proposed references to be provided to applicants during examination: None

Learning Objective: OPT200.CBVENT B2, 5, 6

Question Source:
Bank # _____
Modified Bank # _____
New ____X_____

Question History: New for SQN NRC Exam 1/2008

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis ___X____

10 CFR Part 55 Content: (CFR 43.2 / 43.3 / 45.3)

10CFR55.43.b (2)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C C C C C C C C C C Items Not Scrambled

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

17. G 2.2.8 096

An engineer has submitted a design change request to replace the controller for FCV-62-93, "Charging Flow Control," with a different type of controller to improve pressurizer level control at low power.

Which ONE (1) of the following describes the **MINIMUM** required qualifications of the person PREPARING the safety evaluation paperwork?

A. ✓ 50.59 qualified **ONLY**.

B. SRO Licensed Operator **ONLY**.

C. Degreed Engineer **AND** 50.59 qualified.

D. SRO Licensed Operator **AND** 50.59 qualified.

*A. Correct. 10CFR50.59 qualified individuals shall (1) be technically qualified managers, supervisors, engineering specialists, TVA personnel who are degreed engineers with a minimum of four years nuclear experience or equivalent per BP-105, licensed (or formerly licensed) operators or equivalent contract personnel, or recognized subject matter experts approved by the site 10CFR50.59 Program Manager and (2) have completed the required 10CFR50.59 training.*

*B. Incorrect. Not required to be licensed and required to be 50.59 qualified. Plausible if student thinks having an SRO License is the minimum required due to what it takes to get a license.*

*C. Incorrect. Not required to be a licensed engineer. Plausible if student thinks having a Degree and knowing individual must be 50.59 qualified. Student may think a degreed Engineer may be required due to Engineering being involved with plant design.*

*D. Incorrect. Not required to be a licensed SRO. Plausible if student knows the individual must be 50.59 qualified and may think having an SRO License is also required due to what it takes to get a license.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 96

Tier 3

K/A 2.2.8
Knowledge of the process for determining if the proposed change, test, or experiment involves an unreviewed safety question.

Importance Rating: 1.8 / 3.3

Technical Reference: SPP-9.4

Proposed references to be provided to applicants during examination: None

Learning Objective: No Lesson Objective identified

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

Question History: SQN Bank SPP-9.4 9

Question Cognitive Level:
Memory or fundamental knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: (CFR 43.3 / 45.13)

10CFR55.43.b (3)

Comments:

MCS Time: 3 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A A A A A A A A A A Items Not Scrambled

| | | | |
|---|---|---|---|
| Source: | BANK | Source If Bank: | SQN |
| Cognitive Level: | LOWER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

18. G 2.3.1 097

Plant conditions are as follows:

- A LOCA occurred.
- A Site Area Emergency was declared due to loss of the Fuel Clad Barrier and loss of the RCS Barrier.
- The Containment Barrier is intact (i.e. no loss or potential loss of containment).
- The Containment Critical Safety Function Status Tree (FR-Z) is Yellow due to high radiation in containment.
- Containment pressure is 2.1 psig and decreasing.
- There is no release to the environment in progress.
- The "A" train of containment spray is operating normally for plant conditions.
- The "B" containment spray pump tripped after pump amps were observed to be oscillating.
- Authorization has been given for an emergency responder to receive an emergency exposure of 11 Rem TEDE in order to restore "B" train containment spray.

Which one of the following is correct regarding the decision for authorization?

The decision _____ the requirements of EPIP-15, Emergency Exposure Guidelines because _____.

| Met/Violated | Why |
|---|---|
| A. met | emergency exposure is necessary to maintain critical safety functions |
| B. violated | emergency exposure is NOT necessary to maintain critical safety functions |
| C. met | emergency exposure limits apply during any REP classification |
| D. violated | emergency exposure limits only apply during a General Emergency |

*A Incorrect. "B" train CS is not necessary to maintaining critical safety functions or to protect the public. Per EPM-4 Yellow paths are OPTIONAL to the operator therefore not required to maintain critical safety functions. The REP does not recognize yellow paths for REP criteria to protect public health. Plausible if applicant believes that B train CS is necessary to prevent a release or to maintain FR-Z yellow or restore to green.*

*B Correct. Does not meet requirement for emergency exposures to maintain critical safety functions per EPIP-15.*

*C Incorrect. "B" train CS is not necessary to maintaining critical safety functions or to protect the public. Per EPM-4 Yellow paths are OPTIONAL to the operator therefore not required to maintain critical safety functions. The REP does not recognize yellow paths for REP criteria to protect public health. Plausible if applicant believes that B train CS is necessary to prevent a release and emergency exposure limits always apply during REP to correct any situation.*

*D Incorrect. Correct action. Incorrect reason. Plausible because there are different restrictions depending on REP classifications.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 97

Tier 3

K/A 2.3.1
Knowledge of 10 CFR:20 and related facility radiation control requirements.

Importance Rating: 2.6 / 3.0

Technical Reference: EPIP-15

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271REP B1, 4
Question Source:
Bank # X
Modified Bank # _____
New _____

Question History: SQN NRC Exam 1/2008, SQN Bank REP-B.1.F 015

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: (CFR 41.12 / 43.4 / 45.9 / 45.10)

10CFR55.43.b (4)

Comments: Removed SED from stem of question.

MCS Time: 4 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: B B B B B B B B B B Items Not Scrambled

| | | | |
|---|---|---|---|
| Source: | BANK | Source If Bank: | SQN |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

19. G 2.3.6 098

Given the following conditions on Unit 1:

- You are the Unit Supervisor.
- Rad Waste water inventory is approaching storage capacity.
- A release of the Monitor Tank is planned.
- Sample results indicate non gaseous activity in the tank is slightly higher than the 3.0E-5 uci/ml value listed in 0-SI-CEM-077-400.1, Liquid Waste Effluent Batch Release, for opening a Batch Release Permit.
- The source check on 0-RM-90-122, Liquid Radwaste Release Monitor has failed.
- The Shift Manager has declared 0-RM-90-122, Liquid Radwaste Release Monitor Inoperable.

Which ONE (1) of the following statements is correct regarding approving/disapproving the permit for releasing the Monitor Tank?

A. Disapprove. Cannot release Monitor Tank until contents is reprocessed to lower activity.

B. Disapprove. Cannot release Monitor Tank until 0-RM-90-122 has to be returned to Operable status due to activity level.

C✔ Approve. Provided 2 Independent samples of tank contents are analyzed, 2 Independent release rate calculations are verified, and 2 Independent discharge valve alignments are completed. Shift Manager approval is required for release due to activity level.

D. Approve. Provided 2 Independent samples of tank contents are analyzed, 2 Independent release rate calculations are verified, and 2 Independent discharge valve alignments are completed. Shift Manager approval is NOT required for release at this activity level, but dilution flow requirements are raised due to the higher activity.

*A. Incorrect, RM does not required to be operable as long as 2 Independent samples of tank contents are analyzed, 2 Independent discharge valve alignment, 2 Independent release rate calculations are verified per ODCM 1.1.1. High activity level requires SM approval for release. Plausible if student knows high activity limit but does not know that the SM can authorize the release.*

*B. Incorrect, 2 Independent samples of tank contents are analyzed, 2 Independent discharge valve alignment, 2 Independent release rate calculations are verified per ODCM 1.1.1. High activity level requires SM approval for release. Plausible if student believes that to release a tank with high activity it would require active monitoring during the release.*

*C. Correct, 2 Independent samples of tank contents are analyzed, 2 Independent discharge valve alignment, 2 Independent release rate calculations are verified per ODCM 1.1.1. The high activity level requires SM approval for release.*

*D. Incorrect, 2 Independent samples of tank contents are analyzed, 2 Independent discharge valve alignment, 2 Independent release rate calculations are verified per ODCM 1.1.1. The high activity level requires SM approval for release. Plausible is student does not know requirement to have SM approval for releasing tank with high activity levels. Raising dilution flow adds to the plausibility of being able to release with a higher activity versus getting additional approvals.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 98

Tier 3

K/A 2.3.6
Knowledge of the requirements for reviewing and approving release permits.

Importance Rating: 2.1 / 3.1

Technical Reference: 0-SI-CEM-077-400.1 Liquid Waste Effluent Batch Release.
ODCM 1.1.1 and Table 1.1.1.
0-SO-77-1, Waste Dispoal System, Rev 46

Proposed references to be provided to applicants during examination: None

Learning Objective: OPT200.LRW B0, B6

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

Question History: Draft Vogtle 2006 Exam (Unknown if used on exam)

Question Cognitive Level:
Memory or fundamental knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: (CFR 43.4 / 45.10)

10CFR55.43.b (2)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C D B D B C D A C D Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | BANK MOD | Source If Bank: | VOGTLE |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

20. G 2.4.49 100

Given the following conditions on Unit 2:

- Plant was operating at 96% power when a loss of offsite power occurred.
- All Diesel generators start except for 2A.
- B reactor trip breaker failed to open and remains closed.
- Reactor power is about 1.5% on all Power Range channels, and decreasing.
- Both Intermediate Range channels indicate negative (-0.5 dpm) SUR.

Which ONE (1) of the following identifies the Immediate Operator Actions that the initial procedure to be entered requires, and the correct procedure to be entered when the first transition is made?

| **Immediate Operator Actions** | **First Transition** |
|---|---|
| A. Trip Reactor<br>Trip Turbine | ES-0.1, Reactor Trip Response |
| B. Trip Reactor<br>Trip Turbine | E-0, Reactor Trip or Safety Injection |
| C. Trip Reactor<br>Trip Turbine<br>Shutdown Boards Energized<br>Safety Injection Actuated | E-0, Reactor Trip or Safety Injection |
| D. Trip Reactor<br>Trip Turbine<br>Shutdown Boards Energized<br>Safety Injection Actuated | ES-0.1, Reactor Trip Response |

*A. Incorrect, E-O is the correct procedure and it contains 4 immediate operator actions that must be performed. Plausible because the candidate may incorrectly determine with the B Reactor trip breaker closed that the reactor is not tripped and FR-S.1 would be the first procedure entered. If this determination were correct then the 2 immediate operator actions listed are the immediate operator actions in FR-S.1.*

*B. Incorrect, E-O is the correct procedure and it contains 4 immediate operator actions that must be performed. Plausible because the candidate may incorrectly determine with the B Reactor trip breaker closed that the reactor is not tripped and FR-S.1 would be the first procedure entered. If this determination were correct then the 2 immediate operator actions listed are the immediate operator actions in FR-S.1 and the first transition for the stated conditions would be to E-0.*

*C. Incorrect, the immediate operator actions listed are correct for the procedure to be first entered, however the correct transition would be to ES-0.1. Plausible if the candidate confuses the immediate operator actions in E-0 with the immediate operator actions in FR-S.1 and knows that when the transition from FR-S.1 is made for the conditions stated that E-0 would be entered.*

*D. Correct, The conditions indicate a reactor trip has occurred. E-0 should be entered and with the conditions stated the reactor is tripped. The failure of the B reactor trip breaker to open would cause the use of the RNO in step 1 of E-0, but the transition to FR-S.1 would only be made if the reactor was not tripped. With reactor power dropping,a negative startup rate,and the A reactor trip breaker open the reactor is tripped. The first transition would be to ES-0.1, Reactor Trip Response*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 100

Tier 3

K/A G2.4.49
Emergency Procedures/Plan: Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.

Importance Rating: 4.0 / 4.0

Technical Reference: E-0, Reactor Trip or Safety Injection.

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271E-0, b.6

Question Source:
Bank # _____
Modified Bank # _____
New ____X_____

Question History:

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis ___X_____

10 CFR Part 55 Content: (CFR 41.10 / 43.2 / 45.6)

10CFR55.43.b (5)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D B C A C D B A B B Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

21. G 2.4.9 099

Given the following:

- Mode 5
- RCS Boron Concentration = 2210 ppm
- Required Shutdown Margin Boron Concentration = 2100 ppm
- RWST Boron Concentration = 2600 ppm
- Chemistry reports Volume Control Tank Boron Concentration = 2000 ppm due to Primary Water inleakage into the VCT which has now been stopped.
- RCS is being drained to 696' for maintenance, per 0-GO-13, "Reactor Coolant System Drain and Fill Operations"
- RCS level is inadvertently lowered to 695'
- RHR pump amps, discharge pressure, and flow begin to fluctuate excessively.

Which ONE (1) of the following describes the expected action(s) and mitigating response?

| | **Action** | **Mitigating Response** |
|---|---|---|
| A. | Stop RHR Pump | Raise RCS level using RWST gravity fill. |
| B. | Stop RHR Pump | Raise RCS level using charging pump taking suction from VCT |
| C. | Lower RHR Pump Flow rate to 1000 - 1500 gpm | Raise RCS level using RWST gravity fill |
| D. | Lower RHR Pump Flow rate to 1000 - 1500 gpm | Raise RCS level using charging pump taking suction from VCT |

*A. Correct - The required procedural action to trip the RHR pump is correct. The mitigating action is correct due to Tech Spec 3.4.1.4 action requirement to not dilute RCS with concentration less than required by shutdown margin. The RWST Concentration is greater than required SDM concentration.*

*B. Incorrect - The required procedural action to trip the RHR pump is correct. The mitigating action is incorrect due to Tech Spec 3.4.1.4 action requirement to not dilute RCS with concentration less than required by shutdown margin. The VCT Concentration is less than required SDM concentration. Plausible is student does not remember this requirement.*

*C. Incorrect - The required procedural action is to trip the RHR pump. Lowering the flow rate is plausible due to procedure containing actions to lower flow rate to the values listed if RCS level is greater than 695' 4". Since RCS level is less than that as stated in the stem then this action would not be performed and is incorrect. The mitigating action is correct due to Tech Spec 3.4.1.4 action requirement to not dilute RCS with concentration less than required by shutdown margin. The RWST Concentration is greater than required SDM concentration.*

*D. Incorrect - The required procedural action is to trip the RHR pump. Lowering the flow rate is plausible due to procedure containing actions to lower flow rate to the values listed if RCS level is greater than 695' 4". Since RCS level is less than that as stated in the stem then this action would not be performed and is incorrect. The mitigating action is incorrect due to Tech Spec 3.4.1.4 action requirement to not dilute RCS with concentration less than required by shutdown margin. The VCT Concentration is less than required SDM concentration.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 99

Tier 3

K/A G 2.4.9
Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.

Importance Rating: 3.3 / 3.9

Technical Reference: AOP-R.03,
Tech Spec 3.4.1.4

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271AOP-R.03 B3, 9

Question Source:
Bank # ____X_____
Modified Bank # _____
New _____

Question History: SQN NRC Exam 1/2008, SQN Bank AOP-R.03-B.0 001

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis __X_____

10 CFR Part 55 Content: 41.10 / 43.5 / 45.13

10CFR55.43.b (2, 5)

Comments: Modified Bank question C and D distractors to eliminate subset issues and for plausibility

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A A A A A A A A A A Items Not Scrambled

| | | | |
|---|---|---|---|
| Source: | BANK | Source If Bank: | SQN |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH . |
| Date: | 1/2008 | Last 2 NRC?: | NO |

22. W/E02 EA2.2 086

Given the following:

- Unit 1 at 100% power with Power Range Monitor, N42, out of service for Surveillance Instruction performance.
- An inadvertant Safety injection occurs.
- The operating crew enters E-0, Reactor Trip or Safety Injection.
- While implementing the EOPs the crew observes the following:
  - Pressurizer Pressure Transmitter,1-PT-68-323, fails low.
  - Source Range Monitor, N31, fails high when reinstated.

Which ONE (1) of the following identifies the procedural flow path to implement ES-1.1, SI Termination **and**, if the plant could remain in MODE 3 per Technical Specifications after ES-1.1 completion?

A. Transition to ES-1.1 would be made DIRECTLY from E-0;
Plant could remain in MODE 3.

B. Transition to ES-1.1 would be made DIRECTLY from E-0;
LCO 3.0.3 would require placing the plant in a lower Mode.

C. No direct transition from E-0 to ES-1.1 can be made, an intermediate transition must first be made;
Plant could remain in MODE 3.

D. No direct transition from E-0 to ES-1.1 can be made, an intermediate transition must first be made;
LCO 3.0.3 would require placing the plant in a lower Mode.

A. *Correct,* Transition to ES-1.1 would be made DIRECTLY from E-0; Plant could remain in MODE 3.

B. *Incorrect, ES-1.1 would be entered from E-0, however the instrument failures do not constitute an LCO 3.0.3 condition with the plant in MODE 3 following the reactor trip. The combination of power range NI and pressurizer pressure instruments would be a 3.0.3 condition in MODEs 1 and 2*

C. *Incorrect, ES-1.1 would be entered directly from E-0, No intermediate transition would be required, however the candidate might mistakenly conclude that an E-1 transition would have to be made before ES-1.1 could be entered.*

D. *Incorrect, ES-1.1 would be entered directly from E-0, No intermediate transition would be required, however the candidate might mistakenly conclude that an E-1 transition would have to be made before ES-1.1 could be entered. The combination of power range NI and pressurizer pressure instruments would be a 3.0.3 condition in MODEs 1 and 2*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 86

Tier 1 Group 2

K/A W/E02 EA2.2
SI Termination: Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

Importance Rating: 3.5 / 4.0

Technical Reference: E=0, Reactor Trip or Safety Injection
Technical Specifications 3.3.1.1, 3.3.2.1

Proposed references to be provided to applicants during examination: None

Learning Objective: OPT200.PZRPCS B6, OPT200.NIS B6, OPL271E-0 B5

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

Question History: New for SQN NRC EXAM 1/2008

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 43.5 / 45.13

10CFR55.43.b (3, 5)

Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A C C B B B C A C A Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | NEW | Source If Bank: | |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

23. W/E11 2.4.48 081

Given the following:

- Unit 2 is responding to a LOCA into the Auxiliary Building in accordance with ECA-1.2, LOCA Outside Containment.
- The operators reach the last step in the procedure of ECA-1.2 and observe the following conditions:
  - RCS pressure 1040 psig and dropping.
  - RWST Wide Range level 72% and dropping

Which ONE (1) of the following statements identifies the procedure transition required to assure continued removal of decay heat under these conditions?

A. Transition to ECA-1.1, Loss of RHR Sump Recirculation.

B. Transition to ES-1.3,Transfer to RHR Containment Sump.

C. Transition back to E-1, Loss of Reactor or Secondary Coolant.

D. Transition to ES-1.2, Post LOCA Cooldown and Depressurization.

*A. Correct, If LOCA has not been isolated as per indications given in stem then the procedure forces a Transition to ECA-1.1, Loss of RHR Sump Recirculation.*

*B. Incorrect,The ES-1.3 transition is a transition that is made in E-1. The ES-1.3 transition would be made if the RWST and Containment Sump level requirements met. Plausible due to this would be applicable for LOW RWST level in E-1.*

*C. Incorrect, E-1 would be the correct transition if the leak had been isolated. Isolation is determined by the RCS pressure rising and the stem states that the pressure is dropping.*

*D. Incorrect, Plausible due to ES-1.2 transition is a transition that is made in E-1 if RCS pressure is greater than 300 psig (which it is in stem), and RCS cooldown and depressurization is required.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 81

Tier 1 Group 1

K/A W/E11 G 2.4.48
Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.

Importance Rating: 3.5 / 3.8

Technical Reference: ECA-1.2, LOCA Outside Containment

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271ECA-1.2, B5

Question Source:
Bank # ____X____
Modified Bank # _____
New _____

Question History: SQN NRC Exam 1/2008, SQN BANK ECA-1.2-B.1B 001

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis ___X_____

10 CFR Part 55 Content: 43.5 / 45.12

10CFR55.43.b (5)

Comments: SQN BANK ECA-1.2-B.1B 001 with minor rewording of the stem to require candidate to determine the leak is not isolated (versus stating the leak is not isolated in the stem) and to correct procedure titles in the choices

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A A A A A A A A A A Items Not Scrambled

| | | | |
|---|---|---|---|
| Source: | BANK | Source If Bank: | SQN |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

24. W/E12 G2.1.32 082

Given the following:

- The crew is terminating safety injection per ECA-2.1, "Uncontrolled Depressurization of All Steam Generators."
- S/G #4 pressure suddenly begins to rise in an uncontrolled manner.

What action should the crew perform?

A. Stop performing SI Termination, transition to E-2, "Faulted Steam Generator Isolation."

B. Stop performing SI Termination, remain in ECA-2.1, "Uncontrolled Depressurization of All Steam Generators."

C. Once the SI termination is complete, transition to E-2, "Faulted Steam Generator Isolation."

D. Once the SI termination is complete, remain in ECA-2.1, "Uncontrolled Depressurization of All Steam Generators."

*A. Incorrect. The fold out page and the caution direct the operator not to transition until SI termination is complete. The purpose of this caution is to prevent an unnecessary delay in terminating SI; thus, prevent/minimize the potential for repressurizing the RCS (PTS concern).*

*B. Incorrect. SI termination criteria is still met with increasing S/G pressure. Therefore, should continue with SI termination. Once SI termination is complete, the fold out page direct transition to E-2 because S/G # 4 is no longer faulted.*

*C. Correct. The fold out page and the caution direct the operator not to transition until SI termination is complete. The purpose of this caution is to prevent an unnecessary delay in terminating SI; thus, prevent/minimize the potential for repressurizing the RCS (PTS concern). After terminating SI, the conditions are met to transfer to E-2.*

*D. Incorrect. Once SI termination is complete, the fold out page direct transition to E-2 because S/G # 4 is no longer faulted.*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 82

Tier 1 Group 1

K/A W/E12 G2.1.32
Ability to explain and apply all system limits and precautions.

Importance Rating: 3.4 / 3.8

Technical Reference: ECA-2.1

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271ECA-2.1, B4, & 5, & 6

Question Source:
Bank # ___X_____
Modified Bank # _____
New _____

Question History: SQN NRC Exam 1/2008, SQN Bank question ECA-2.1-B.5.A 001

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis ____X___

10 CFR Part 55 Content: 41.10 / 43.2 / 45.12

10CFR55.43.b (5)

Comments:
MCS Time: 4 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C C C C C C C C C C Items Not Scrambled

| | | | |
|---|---|---|---|
| Source: | BANK | Source If Bank: | SQN |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |

25. W/E16 G 2.2.31 087

Given the following conditions:

- The reactor is in Mode 6 with core reload in progress.
- An irradiated assembly is in the manipulator crane and is being transported to a core location.
- An additional irradiated fuel assembly is in the RCCA change fixture.
- The Refueling SRO determines a leak exists in the Reactor Cavity Seal and RADCON tech reports that radiation levels are rising as the water level is dropping.

Which ONE (1) of the following describes the action that is REQUIRED to be taken with the 2 fuel assemblies?

| | **Irradiated Assembly In Manipulator Crane** | **Irradiated Assembly In RCCA change Fixture** |
|---|---|---|
| A.✔ | Transport back to Spent Fuel Pit side | Place in any core location |
| B. | Transport back to Spent Fuel Pit side | Transport back to Spent Fuel Pit side |
| C. | Place in any core location | Transport back to Spent Fuel Pit side |
| D. | Place in any core location | Place in any core location |

*A. Correct. As stated per AOP-M04.*

*B. Incorrect. AOP -M.04 requires the assembly in the RCCA fixture to be placed in the core. Plausible because the candidate could think that both assemblies would be returned to the spent fuel pit.*

*C. Incorrect. AOP -M.04 requires the assembly in the manipulator crane to be transported to the SFP and the assembly in the RCCA fixture to be placed in the core. Plausible because these are the to locations required for the assemblies, but are reversed. The candidate could think that the identified locations are the required location for each of the assemblies.*

*D. Incorrect. AOP -M.04 requires the assembly in the manipulator crane to be transported to the SFP. Plausible because the candidate could think that this assembly would be placed in a core location*

**QUESTIONS REPORT**
for SRO WRITTEN EXAM Questions

Question No. 87

Tier 1 Group 2

K/A W/E16 G2.2.31 High Containment Radiation
Knowledge of procedures and Limitations involved in initial core loading.

Importance Rating: 2.2 / 2.9

Technical Reference: AOP-M.04, Refueling Malfunctions

Proposed references to be provided to applicants during examination: None

Learning Objective: OPL271AOP-M.04, B.8.b

Question Source:
Bank # _____
Modified Bank # ____X_____
New _____

Question History: SQN NRC Exam 1/2008, Modified WBN Bank question AOP2900.06 006

Question Cognitive Level:
Memory or fundamental knowledge _____
Comprehension or Analysis ____X___

10 CFR Part 55 Content: 43.6

10CFR55.43.b (7)

Comments:
MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A C D B C D B B A C Scramble Range: A - D

| | | | |
|---|---|---|---|
| Source: | BANK MOD | Source If Bank: | WBN |
| Cognitive Level: | HIGHER | Difficulty: | |
| Job Position: | SRO | Plant: | SEQUOYAH |
| Date: | 1/2008 | Last 2 NRC?: | NO |