

| Examination Outline Cross-reference: | Level | RO | SRO |
|--------------------------------------|-------------------|---------------|-------------------|
| | Tier # | <u>3</u> | <u> </u> |
| | Group # | <u>NA</u> | <u> </u> |
| | K/A # | <u>G2.2.6</u> | <u> </u> |
| | Importance Rating | <u>3.0</u> | <u> </u> |

(Knowledge of the process for making changes to procedures.)

Proposed Question: Common 71

An NLO is performing a PT and he identifies that two steps need to be performed “out of sequence” in order to complete the PT.

After deliberation with the supervisor, it is determined that this deviation is necessary. This change will NOT alter the intent of the procedure.

Which ONE (1) of the following statements describes the action(s) required for performing these procedural steps out of sequence?

An explanation of the sequence deviation is documented within the....

- A. Remarks Section of the procedure cover sheet ONLY; and initialed by the NLO and supervisor ONLY, approving the change.
- B. Remarks Section of the procedure cover sheet ONLY; and initialed by the NLO, the supervisor, and the OSM approving the change.
- C. Procedure body OR the Remarks Section of the procedure cover sheet; and initialed by the NLO and supervisor ONLY, approving the change.
- D. Procedure body OR the Remarks Section of the procedure cover sheet; and initialed by the NLO, the supervisor, and the OSM approving the change.

Proposed Answer: **D**

Explanation (Optional):

Per NSD-704, section 7.11, a sequence change must be documented in either the procedure body OR on the cover sheet (In the remarks section). It must be initialed by the performer and the supervisor reviewing the sequence change. SOMP 04-02, section 9.4 adds the requirement for the OSM to approve

sequence deviations in Operations' procedures.

- A. Incorrect. Document in body of procedure or cover sheet, need OSM initials in addition to NLO and supervisor.
- B. Incorrect. Document in body of procedure or cover sheet.
- C. Incorrect. Need OSM approval.
- D. Correct.

| | | |
|------------------------|--|-------------------------------------|
| Technical Reference(s) | <u>NSD 704 Section 7.11.2.A Rev 15</u> | (Attach if not previously provided) |
| | <u>SOMP 04-02 Step 9.4.1 Rev 001</u> | (Including version or revision #) |

Proposed references to be provided to applicants during examination: _____

Learning Objective: ADM-OP, objective 16 (As available)

Question Source: Bank # _____
 Modified Bank # McGuire NRC Bank # 20 (Note changes or attach parent)
 New _____

Question History: Last NRC Exam Not on 2005/2007 Exams

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

10 CFR Part 55 Content: 55.41 10
 55.43 _____

Comments:

KA Match:

Process for making changes to procedures. SOMP 04-02 provides the processes for procedure use and adherence, including documenting a change in step sequence.

RFA Concurs 4/25/08

During performance of PT/2/A/4200/01E, Upper Containment Personnel Airlock Leak Rate Test, by the Operation Test Group, two steps need to be performed out of sequence. After deliberation by the Test Team Supervisor and the SRO, it is determined that this deviation from the procedure sequence is needed and will not alter the intent of the procedure.

Which one of the following statements describes the action(s) required for performing these procedural steps out of sequence in accordance with OMP 4-1?

- A. OSM approval documented within the REMARKS SECTION of the Procedure Process Record.
- B. Test Team approval documented within the REMARKS SECTION of the procedure and a copy of the "SUBMITTED" procedure change attached.
- C. An explanation of the sequence deviation documented within the procedure or procedure cover sheet and initialed by the Test Team Supervisor and the SRO approving the change.
- D. An explanation of the sequence deviation documented within the procedure and initialed by the OSM approving the change, the Test Team Supervisor and the SRO recommending the change.

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|---------------|-------------------|
| Tier # | <u>3</u> | <u> </u> |
| Group # | <u>NA</u> | <u> </u> |
| K/A # | <u>G2.3.4</u> | <u> </u> |
| Importance Rating | <u>3.2</u> | <u> </u> |

(Knowledge of radiation exposure limits under normal or emergency conditions.)

Proposed Question: Common 72

Units 1 and 2 are at 100% power. Given the following events and conditions:

- Unit 2 has experienced several fuel pin failures.
- The mechanical seal has failed on the 2B NI pump.
- The 2B NI pump room general area is 400 mrem/hr.
- In order to reach the 2B NI pump room the worker must transit through a 6 Rem/hr high radiation area for 2 minutes.
- The worker has an accumulated annual dose of 400 mrem.

Which ONE (1) of the following identifies the MAXIMUM allowable time that the worker can participate in the seal repair on the 2B NI pump and not exceed the EXCLUDE EXPOSURE LIMIT for external exposure?

- A. 2 hours.
- B. 2.5 hours.
- C. 3 hours.
- D. 3.5 hours.

Proposed Answer: **B**

Explanation (Optional):

The operator should determine that the exclusion flag exposure limit is 90% of 2000 mrem admin limit = 1800 mrem. Transient exposure is 400 mrem (6000mrem/hr x 2/60hr). (During transit to and from the job). 200 mrem + 200 mrem = 400 mrem; 1800 mrem - 400 mrem = 1400 mrem allowable before reaching exclusion flag exposure admin limit. Already has 400 mrem; 1400 mrem - 400 mrem = 1000mrem, 1000 mrem/ 400 mrem/hr = 2.5 hours.

- A. Incorrect. The answer is 2.5 hours. Plausible: based on using alert flag limit (1600) versus exclude flag.
- B. Correct. See Above.
- C. Incorrect. The answer is 2.5 hours. Plausible: based on calculating a one-way transit dose.
- D. Incorrect. The answer is 2.5 hours. Plausible: based on using admin limit (2000) and a one-way transit dose.

Technical Reference(s) DUKE RWT 2008 Limits and Guidelines pg 2, 3, 6. (Attach if not previously provided)
(Including version or revision #)

Proposed references to be provided to applicants during examination: None

Learning Objective: RWT Obj 2 (As available)

Question Source: Bank # McGuire NRC Bank # 564.
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History: Last NRC Exam Not on 2005/2007 Exams

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

10 CFR Part 55 Content: 55.41 12
55.43 _____

Comments:

Formatting changes and changes for calculation errors made from McGuire NRC Bank Question #564.

KA Match:

Knowledge of radiation exposure limits under normal or emergency conditions. This question requires knowledge of the Duke Administrative TEDE limits and the "Exclude" limit.

RFA Concur 4/25/08

| | | | |
|--------------------------------------|-------------------|----------------|-------------------|
| Examination Outline Cross-reference: | Level | RO | SRO |
| | Tier # | <u>3</u> | <u> </u> |
| | Group # | <u>NA</u> | <u> </u> |
| | K/A # | <u>G2.3.11</u> | <u> </u> |
| | Importance Rating | <u>3.8</u> | <u> </u> |

(Ability to control radiation releases.)

Proposed Question: Common 73

Unit 1 has tripped from 100% power and the following conditions exist:

Each of the following EMF instruments are in trip 2:

- 1EMF 71, S/G A Leakage Hi Rad.
- 1EMF 72, S/G B Leakage Hi Rad.
- 1EMF 73, S/G C Leakage Hi Rad.
- 1EMF 74, S/G D Leakage Hi Rad.
- 1EMF 33, Cond Air Eject Exh Hi Rad.
- 1EMF 24, 25, 26, 27; S/G A, B, C, D Steamline Hi Rad.

Both MD CA Pumps are running.

Steam Generator parameters are as follows:

| | <u>SG A</u> | <u>SG B</u> | <u>SG C</u> | <u>SG D</u> |
|----------|---------------------|---------------------|---------------------|-----------------|
| NR Level | 10% (increasing) | 20% (decreasing) | 15% (increasing) | 15% (stable) |
| CA Flow | 200 gpm | 0 gpm | 0 gpm | 50 gpm |

Which ONE (1) of the following actions must be taken to minimize the radiation release?

- A. Isolate the Steam Supply from the B SG to the TD CA Pump
- B. Isolate the Steam Supply from the C SG to the TD CA Pump.
- C. Increase CA flow to the B SG.
- D. Increase CA flow to the C SG.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. B SG is not ruptured, level is decreasing with no feed flow.
- B. Correct. C SG is ruptured, level is increasing with no feed flow. Isolation steps include closing the SG PORV, isolating Steam to the TD CA Pump, isolating Blowdown and closing the MSIV. Each of these steps are taken to minimize the release of radiation.
- C. Incorrect. Increasing feed flow may be a good idea and may occur. However, it does NOT minimize the radiation release.
- D. Incorrect. Increasing the feed flow to the C SG would minimize the radiation release if level was < 11%.

| | | |
|------------------------|----------------------------|-------------------------------------|
| Technical Reference(s) | <u>E-3 Rev 16</u> | (Attach if not previously provided) |
| | <u>EP-E3 p 54-55 Rev 6</u> | (Including version or revision #) |

Proposed references to be provided to applicants during examination: None

Learning Objective: EP-E3 # 3, 4 (As available)

| | | |
|------------------|---|---------------------------------|
| Question Source: | Bank # <u> </u> | |
| | Modified Bank # <u> </u> | (Note changes or attach parent) |
| | New <u>X</u> | |

Question History: Last NRC Exam NA

| | | |
|---------------------------|---------------------------------|-----------------------------|
| Question Cognitive Level: | Memory or Fundamental Knowledge | <u> </u> |
| | Comprehension or Analysis | <u>X</u> |

| | | |
|-------------------------|-------|-----------------------------|
| 10 CFR Part 55 Content: | 55.41 | <u>10</u> |
| | 55.43 | <u> </u> |

Comments:

Only formatting changes made from McGuire NRC Bank Question #629.

KA Match:

Ability to control radiation releases. This question deals with **controlling radiation releases** during a SGTR.

RFA Concur 4/25/08

| Examination Outline Cross-reference: | Level | RO | SRO |
|--------------------------------------|-------------------|---------|-----|
| | Tier # | 3 | |
| | Group # | NA | |
| | K/A # | G2.4.17 | |
| | Importance Rating | 3.9 | |

(Knowledge of EOP terms and definitions.)

Proposed Question: Common 74

Which ONE (1) of the following events, followed by a failure of the Reactor Trip Breakers to open, would NOT be considered an Anticipated Transient Without Scram (ATWS)?

- A. Trip of 1D NC Pump from 50% power; OR
With Channel I Pzr Pressure instrument out of service for maintenance, the Channel II Pzr Pressure instrument fails LOW.
- B. Trip of 1D NC Pump from 40% power; OR
During a Reactor Startup with Intermediate Range Channels at 10^{-8} amps, Intermediate Range Channel N36 fails HIGH.
- C. Trip of 1D NC Pump from 50% power; OR
During a Reactor Startup with Intermediate Range Channels at 10^{-8} amps, Intermediate Range Channel N36 fails HIGH.
- D. Trip of 1D NC Pump from 40% power; OR
With Channel I Pzr Pressure instrument out of service for maintenance, the Channel II Pzr Pressure instrument fails LOW.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. According to Section 7.8 of OMP 4-3, "Use of Abnormal and Emergency Procedures," an ATWS is defined as a Transient followed by a failure of the Reactor Trip Breakers. This section goes on to say that instrument failures by themselves are not necessarily transients. An instrument failure that is followed by a failure of the automatic portion of the Reactor Trip Breakers is not an ATWS, but merely a failure of the RPS. Examples of transients are given as: (1) Loss of all NC Pumps, (2) Tripping of the Turbine Generator, (3) Loss of Condenser Vacuum, and (4) Loss of

- off-site power. 1st part will cause reactor trip.
- B. Incorrect. 1st part would cause an automatic reactor trip because P-8 is not satisfied. 2nd part will cause reactor trip.
 - C. Incorrect. 1st part will cause reactor trip.
 - D. Correct. 1st part does NOT require reactor trip because power level is < P-8, and 2nd part is an instrument failure.

| | | |
|------------------------|----------------------------|-------------------------------------|
| Technical Reference(s) | OMP 4-3 Section 7.8 Rev 26 | (Attach if not previously provided) |
| | IC-IPE, p47, 49,83, 85 | (Including version or revision #) |

Proposed references to be provided to applicants during examination: None

Learning Objective: ADM-OMP #8; IC-IPE Obj 10 (As available)

Question Source:

| | | |
|-----------------|------------------------------|---------------------------------|
| Bank # | <u> </u> | |
| Modified Bank # | <u> </u> | (Note changes or attach parent) |
| New | <u> X </u> | |

Question History: Last NRC Exam NA

Question Cognitive Level:

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

10 CFR Part 55 Content:

| | |
|-------|-------------------------------|
| 55.41 | <u> 10 </u> |
| 55.43 | <u> </u> |

Comments:

KA Match:

Know EOP terms & definitions. Distinguish between two **terms** discussed in OMP 4-3: ATWS vs RP failure OMP 4-3 covers the use of APs and EOPs

RFA Concurs 4/25/08

| Examination Outline Cross-reference: | Level | RO | SRO |
|--------------------------------------|-------------------|----------------|-------------------|
| | Tier # | <u>3</u> | <u> </u> |
| | Group # | <u>NA</u> | <u> </u> |
| | K/A # | <u>G2.4.14</u> | <u> </u> |
| | Importance Rating | <u>3.8</u> | <u> </u> |

(Knowledge of general guidelines for EOP usage.)

Proposed Question: Common 75

Reactor trip and safety injection have occurred on Unit 2.

- Off-Site power is lost subsequent to a safety injection actuation.
- Equipment failures during performance of E-1, Loss of Reactor or Secondary Coolant, resulted in the following conditions:
- CSF Status Trees indicate as follows:
 - Subcriticality GREEN
 - Core Cooling ORANGE
 - Heat Sink YELLOW
 - Integrity YELLOW
 - Containment ORANGE
 - Inventory YELLOW

Which ONE (1) of the following describes the requirement for Critical Safety Function Status Tree Monitoring in accordance with OMP-4.3, Use of Abnormal and Emergency Procedures?

- A. Monitor for Information ONLY.
- B. Continuous Monitoring Required.
- C. Monitor every 10 – 20 minutes using Control Board indications OR OAC SPDS unless a change in plant status occurs.
- D. Monitor every 10 – 20 minutes using Control Board indications ONLY unless a change in plant status occurs.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. Monitor for information only is done in ECA-0.0 when no action

- can be taken to restore a CSF
- B. Correct. OMP 4-3 states that if an orange or red condition exists, continuous monitoring is required.
 - C. Incorrect. Would be correct if orange condition did not exist.
 - D. Incorrect. Would be correct same as C but also if OAC failure or input failure to SPDS was evident.

Technical Reference(s) OMP 4-3 Rev 26 (Attach if not previously provided)

 _____ (Including version or revision #)

Proposed references to be provided to applicants during examination: _____

Learning Objective: EP-Intro #3 (As available)

Question Source: Bank # X
 Modified Bank # _____ (Note changes or attach parent)
 New _____

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 10
 55.43 _____

Comments:
 WTSI Bank Various similar with slightly different distractor options

KA Match:
 EOP use guidelines. Asking how often the CSF status trees are monitored during different plant conditions is one of the EOP usage requirements (per OMP 4-3, "EP/AP Use")
RFA Concurs 4/25/08

Examination Outline Cross-reference:

| Level | RO | SRO |
|-------------------|----------------------|------------|
| Tier # | _____ | <u>1</u> |
| Group # | _____ | <u>1</u> |
| K/A # | <u>(009) G2.1.27</u> | |
| Importance Rating | _____ | <u>4.0</u> |

Small Break LOCA / Conduct of Operations: Knowledge of system purpose and / or function.

Proposed Question: SRO 76

Given the following conditions:

- A reactor trip has occurred.
- Safety Injection is actuated. All equipment has actuated as designed.
- The crew is performing EP/1/A/5000/E-0, Reactor Trip or Safety Injection.
- NC System pressure is 1700 psig and lowering slowly.
- Pzr level is off-scale low.
- Containment pressure is 1.7 psig and rising slowly.
- FWST level is 300 inches and dropping at 2 inches per minute.
- SG pressures are 1050 psig and stable.
- CA flow is 600 gpm.
- The operators have just transitioned to E-1, Loss of Reactor or Secondary Coolant.

Which ONE (1) of the following describes (1) the NEXT procedure that will be used to mitigate the event in progress, and (2) the Technical Specification basis for FWST minimum volume for this event?

- A. (1) ES-1.2, Post LOCA Cooldown and depressurization
(2) Ensures a sufficient volume of water in the containment sump after ECCS injection to initiate Cold Leg Recirculation.
- B. (1) ES-1.3, Transfer to Cold Leg Recirculation
(2) Ensures a sufficient volume of water in the containment sump after ECCS injection to initiate Cold Leg Recirculation.
- C. (1) ES-1.2, Post LOCA Cooldown and depressurization
(2) Ensures that post LOCA core cooling requirements are met for the ECCS injection phase even with an anticipated loss of Cold Leg Recirculation.

- D. (1) ES-1.3, Transfer to Cold Leg Recirculation
- (2) Ensures that post LOCA core cooling requirements are met for the ECCS injection phase even with an anticipated loss of Cold Leg Recirculation.

Proposed Answer: A

Explanation (Optional):

- A. Correct. Correct Procedure and FWST basis. ES-1.2 will be entered because the rate of change on FWST level will result in conditions NOT being met for ES-1.3 for another 50 minutes. ES-1.2 transition will come sooner
- B. Incorrect. Procedure is incorrect because ES-1.3 will not be performed next, it will take too long to reach conditions
- C. Incorrect. Basis is incorrect, because a loss of cold leg recirculation is beyond design basis for FWST operability.
- D. Incorrect. Basis and procedure are incorrect, as described in B and C above

| | | |
|------------------------|---|-------------------------------------|
| Technical Reference(s) | E-1, Rev 11; ES-1.2 Rev 11; ES-1.3 Rev 23 | (Attach if not previously provided) |
| | TS 3.5.4 basis Rev 70 | |
| | EP-E1 p11, 15, 59 Rev 17; FH-FW p 23, 67 Rev 40 | |

Proposed references to be provided to applicants during examination: None

Learning Objective: FH-FW Obj 5; EP-E1 Obj 2 (As available)

Question Source: Bank # _____
 Modified Bank # _____ (Note changes or attach parent)
 New X

Question History: Last NRC Exam _____

Question Cognitive
Level:

Memory or Fundamental Knowledge

Comprehension or Analysis

X

10 CFR Part 55
Content:

55.41

55.43 5

Comments:

KA matched because item evaluates function of FWST (RWST)

SRO level because the applicant must determine procedure entry based on plant conditions and also know TS basis for operability of FWST

RFA Concurs 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|----------------------|------------|
| Tier # | _____ | <u>1</u> |
| Group # | _____ | <u>1</u> |
| K/A # | <u>(026) G2.1.25</u> | |
| Importance Rating | _____ | <u>4.2</u> |

Loss of Component Cooling Water / Conduct of Operations: Ability to interpret reference materials, such as graphs, curves, tables, etc.

Proposed Question: SRO 77

Initial conditions:

Time = 0 minutes

- Unit 1 is at 100% power.
- "A" Train KC pumps are running.
- Operators have been dispatched to initiate YM makeup to the KC Surge Tank.
- "A" KC Surge Tank level is 6.5 ft.
- "B" KC Surge Tank level is 6.5 ft.

Current conditions:

Time = 5 minutes

- "A" KC Surge Tank level is 5.6 feet
- "B" KC Surge Tank level is 6.4 feet.

Which ONE (1) of the following describes (1) the approximate KC system net leak rate, and (2) the required action and procedure use required in AP/21, Loss of KC or KC System Leakage?

(Reference Provided)

- A. (1) 50 GPM
(2) Isolate KC Non-Essential Headers in accordance with Enclosure 2.
- B. (1) 50 GPM
(2) Isolate "A" KC train from "B" KC train.
- C. (1) 100 GPM
(2) Isolate KC Non-Essential Headers in accordance with Enclosure 2.
- D. (1) 100 GPM
(2) Isolate "A" KC train from "B" KC train.

Proposed Answer: D

Explanation (Optional):

D is correct per conditions. Applicant must interpret curve and determine the leak rate indications based on level decreases

A incorrect because leak rate is wrong (1/2 of actual, as interpreted by curve.) Also, action is incorrect, as procedure will direct splitting trains for indication shown

B incorrect because leak rate is incorrect. Plausible because action is correct

C incorrect because procedure use is incorrect. Approximately 0.1 feet/minute, perform step 20 to split trains

Technical Reference(s): AP/21 Step 20 Rev 9 (Attach if not previously provided)
AP/21 Basis Document Rev 3

Proposed references to be provided to applicants during examination: OP/1/A/6100/22 Enclosure 4.3 Curve 7.31

Learning Objective: None (As available)

Question Source: Bank # _____
Modified Bank # X (Note changes or attach parent)
New _____

Question History: Last NRC Exam Modified from 2007 NRC exam 78

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

10 CFR Part 55 Content: 55.41
55.43 5

Comments:
KA matched because use of a curve is required and interpretation of that curve is required to determine KC (CCW) leak rate. SRO level because assessment of

conditions based on available indications, and selection of procedures (attachments) is required

RFA Concur 4/17/08

The following conditions exist:

- Unit 1 is in Mode 1, 100% power.
- "A" and "B" Train KC pumps are running.
- All available makeup has been established to the KC surge tanks.
- "A" KC Surge tank level is decreasing 0.04 ft/min.
- "B" KC Surge Tank level is decreasing at 0.03 ft/min.
- "A" KC Surge Tank level is presently 3.2 ft.
- "B" KC Surge Tank level is presently 3.4 ft.
- NCP bearing temperatures are approximately 180°F and rising slowly.

Which ONE (1) of the following describes the action and procedure use required?

- A. Enter AP/08, NC Pump Malfunctions, and trip NC Pumps.
- B. Trip the reactor; enter E-0, Reactor Trip or Safety Injection. Trip NCPs and trip "A" KC Pumps.
- C. Enter AP/21, Loss of KC or KC System Leakage, and Isolate KC Non-Essential Headers in accordance with Enclosure 2.
- D. Enter AP/21, Loss of KC or KC System Leakage, and isolate "A" KC train from "B" KC train.

Ans. D

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|-------------------|------------|
| Tier # | _____ | <u>1</u> |
| Group # | _____ | <u>1</u> |
| K/A # | <u>029 EA2.01</u> | _____ |
| Importance Rating | _____ | <u>4.7</u> |

Ability to determine or interpret the following as they apply to a ATWS: Reactor nuclear instrumentation

Proposed Question: SRO 78

Given the following conditions:

- An ATWS has occurred on Unit 1.
- The crew is performing FR-S.1, Response to Nuclear Power Generation/ATWS.
- NC Boration is in progress.
- SI has actuated.
- All SG pressures are approximately 800 psig and trending down.
- NC Temperature is approximately 490°F and trending down.
- Enclosure 2 (Faulted SG Isolation) has been handed off to the RO, and is in progress.
- Enclosure 3 (Subsequent S/I Actions) has been completed by the BOP.
- Reactor Power indicates approximately 4% and trending down slowly.

Which ONE (1) of the following describes the mitigation strategy for the event in progress?

- A. Remain in FR-S.1 until Enclosure 2 is completed.
- B. Exit FR-S.1 while continuing performance of Enclosure 2. Transition to E-0, Reactor Trip or Safety Injection, prior to transition to ES-1.1, SI Termination.
- C. Exit FR-S.1 while continuing performance of Enclosure 2. DIRECTLY transition to ES-1.1, SI Termination.
- D. Exit FR-S.1 and terminate performance of Enclosure 2. Transition to E-2, Faulted Steam Generator Isolation, prior to transition to ES-1.1, SI Termination.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. When power is < 5%, transition may occur. According to Section 7.10.4 of OMP 4-3, the Enclosure in progress does NOT need to be completed prior to transition to the procedure and step in effect, but must be completed, even after transition.
- B. Correct. When power is < 5%, transition may occur. Step 19 will return the operator to procedure and step in effect upon entry, which was E-0. Enclosure 2, which has been started will be continued until completion by the operator assigned.
- C. Incorrect. When power is < 5%, transition may occur. While there is no direct transition from FR-S.1 to ES-1.1, the operator may believe that this transition is appropriate because ES-1.1 will be transitioned to from E-2 in order to terminate SI. If the operator believes that E-2 Actions are being addressed by the completion of Enclosure 2, the operator may incorrectly observe that the performance of E-2 would be redundant, and unnecessarily delay SI Termination.
- D. Incorrect. When power is < 5%, transition may occur. While there is no direct transition from FR-S.1 to E-2, the operator may believe that this transition is appropriate because E-2 will be transitioned to from E-0, and Enclosure 3, the actions that will be addressed by performing E-0 up to the point of transition to E-2, has been completed within FR-S.1.

Technical Reference(s): FR-S.1, Rev 10 (Attach if not previously provided)
OMP 4-3 p13,14, 18

Proposed references to be provided to applicants during examination: None

Learning Objective: FR-S.1 Obj 4 (As available)

Question Source: Bank # _____
Modified Bank # McGuire 2006 NRC 80 (Note changes or attach parent)
New _____

Question History: Last NRC Exam

Question Cognitive Memory or Fundamental Knowledge

Level:

Comprehension or Analysis

X

10 CFR Part 55
Content:

55.41

55.43
5

Comments:

KA is matched because transition is made based upon PR NI indications.

SRO level because the item addresses FR-S.1 strategy and compliance with EOPs. The applicant must determine exit conditions available and interpret use of EOP attachments while performing other procedures

RFA Concur 4/17/08

Given the following conditions:

- An ATWS has occurred on Unit 1.
- The crew is performing FR-S.1, Response to Nuclear Power Generation/ATWS.
- NC Boration is in progress.
- SI has actuated.
- All SG pressures are approximately 800 psig and trending down.
- NC Temperature is approximately 490°F and trending down.
- Reactor Power indicates approximately 7% and trending down slowly.

Which ONE (1) of the following describes the mitigation strategy for the event in progress?

- A. Remain in FR-S.1 and perform Enclosure 2 (Faulted SG Isolation). Transition to E-0, Reactor Trip or Safety Injection when Enclosure 2 is complete.
- B. Remain in FR-S.1 and perform Enclosure 2 (Faulted SG Isolation). Transition to E-0, Reactor Trip or Safety Injection when reactor power is less than 5%.
- C. Exit FR-S.1; Transition to E-0, Reactor Trip or Safety Injection to ensure actuated components are in their correct alignments.
- D. Exit FR-S.1; Transition to E-0, Reactor Trip or Safety Injection and ONLY perform steps of subsequent EOPs that do not contradict the actions taken in FR-S.1.

Ans. B

| Examination Outline Cross-reference: | Level | RO | SRO |
|--------------------------------------|-------------------|-------------------|------------|
| | Tier # | _____ | <u>1</u> |
| | Group # | _____ | <u>1</u> |
| | K/A # | <u>055 EA2.03</u> | |
| | Importance Rating | _____ | <u>4.7</u> |

Ability to determine or interpret the following as they apply to a Station Blackout Actions necessary to restore power

Proposed Question: SRO 79

Given the following:

- A LOOP has occurred on Unit 1.
- Unit 2 is unaffected.
- The Unit 1 crew is performing ECA-0.0, Loss of All AC Power.
- The Standby Makeup Pump is ON.
- NCS subcooling is 8°F.
- Pzr level is 4% and lowering slowly.
- The crew was NOT able to start EITHER Diesel Generator.

Which ONE of the following describes the procedure that will be required for restoring power to Bus ETA, and the subsequent recovery procedure that will be performed upon transition from ECA-0.0?

- A. AP/7, Loss of Electrical Power;
ECA-0.1, Loss of All AC Power Recovery Without SI Required
- B. Enclosure 9, Energizing Unit 1 4160 V Bus from Unit 2 – SATA or SATB;
ECA-0.1, Loss of All AC Power Recovery Without SI Required
- C. AP/7, Loss of Electrical Power;
ECA-0.2, Loss of All AC Power Recovery With SI Required
- D. Enclosure 9, Energizing Unit 1 4160 V Bus from Unit 2 – SATA or SATB;
ECA-0.2, Loss of All AC Power Recovery With SI Required

Proposed Answer: D

Explanation (Optional):

ECA-0.0, Step 17 directs the operator to Enclosure 9 to restore power from Unit 2. ECA-0.0, Step 40 directs the operator to ECA-0.2 based on PZR level.

- A. Incorrect. AP-07 is plausible because it is the procedure normally used for any electrical restoration. (See E-0, step 4). In this condition, Enclosure 9 will be used. Even though Auto SI conditions do not exist, the crew will perform ECA-0.2 based on PZR level values requiring SI when power restored
- B. Incorrect. Enclosure 9 is correct. Plausible because even though Auto SI conditions do not exist, the crew will perform ECA-0.2 based on PZR level values requiring SI when power restored
- C. Incorrect. Incorrect restoration, but correct recovery procedure for these plant conditions
- D. Correct

| | | |
|------------------------|------------------------|-------------------------------------|
| Technical Reference(s) | ECA-0.0, Encl 9 Rev 24 | (Attach if not previously provided) |
| | EP-E0 Rev 24 | |
| | EP-ECA0 Rev 12 | |
| | EP-E0 Rev 12 | |
| | OMP 4-3 p 22 Rev 26 | |

Proposed references to be provided to applicants during examination: None

Learning Objective: _____ (As available)

| | | |
|------------------|-----------------------|---------------------------------|
| Question Source: | Bank # _____ | |
| | Modified Bank # _____ | (Note changes or attach parent) |
| | New <u>X</u> | |

Question History: Last NRC Exam _____

| | |
|---------------------------|---------------------------------------|
| Question Cognitive Level: | Memory or Fundamental Knowledge _____ |
| | Comprehension or Analysis <u>X</u> |

| | |
|-------------------------|-------------------|
| 10 CFR Part 55 Content: | 55.41 _____ |
| | 55.43 <u>2, 5</u> |

Comments:

KA is matched because the applicant must identify where the actions are contained for restoration of power.(title also identifies actions) and SRO level because assessment of conditions and selection of procedures is required (Requires knowledge of strategy)

RFA Concur 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|------------|-----|
| Tier # | _____ | 1 |
| Group # | _____ | 1 |
| K/A # | 056 AA2.18 | |
| Importance Rating | _____ | 4.0 |

Ability to determine and interpret the following as they apply to the Loss of Offsite Power: Reactor coolant temperature, pressure, and PZR level recorders

Proposed Question: SRO 80

Given the following:

- A loss of off-site power has occurred.
- Both Units have tripped.
- Unit 1 SRO has been directed to initiate cooldown to Mode 5.
- The following conditions exist on Unit 1 upon transition to ES-0.1, Reactor Trip Response.
 - All control rods are inserted.
 - NC SYSTEM Tcold temperature.
 - Loop 1A 535°F
 - Loop 1B 532°F
 - Loop 1C 533°F
 - Loop 1D 533°F

Which ONE of the following choices describes (1) actions that will be required for the above conditions, and (2) the procedure required for NC System Cooldown?

- A. (1) Close MSIVs ONLY
(2) OP/1/A/6100/002, Controlling Procedure for Unit Shutdown.
- B. (1) Close MSIVs ONLY
(2) ES-0.2, Natural Circulation Cooldown.
- C. (1) Close MSIVs AND Initiate Emergency Boration in accordance with AP/38, Emergency Boration
(2) OP/1/A/6100/002, Controlling Procedure for Unit Shutdown.

- D. (1) Close MSIVs AND Initiate Emergency Boration in accordance with AP/38, Emergency Boration
- (2) ES-0.2, Natural Circulation Cooldown.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. MSIVs are closed, but if a cooldown is required with a LOOP, then ES-0.2 would be performed instead of the Controlling Procedure. Also, due to Loop 1D temperature, emergency boration is required
- B. Incorrect. Due to Loop 1D temperature, emergency boration is required
- C. Incorrect. Actions are correct but procedure is incorrect as in A
- D. Correct.

| | | |
|------------------------|-------------------------------|-------------------------------------|
| Technical Reference(s) | ES-0.1, Rev 27; ES-0.2 Rev 10 | (Attach if not previously provided) |
| | <u>EP-E0 Rev 12</u> | |

Proposed references to be provided to applicants during examination: None

Learning Objective: _____ (As available)

| | | |
|------------------|-----------------------|---------------------------------|
| Question Source: | Bank # _____ | |
| | Modified Bank # _____ | (Note changes or attach parent) |
| | New <u>X</u> | |

Question History: Last NRC Exam _____

| | | |
|---------------------------|---------------------------------|----------|
| Question Cognitive Level: | Memory or Fundamental Knowledge | |
| | Comprehension or Analysis | <u>X</u> |

| | | |
|-------------------------|-------|----------|
| 10 CFR Part 55 Content: | 55.41 | |
| | 55.43 | <u>5</u> |

Comments:

KA is met because item evaluates interpretation of RCS temperature trends. SRO level because the assessment requires interpretation of indications to take

action within selected EOPs/AOPs
RFA Concurrs 4/17/08

Examination Outline Cross-
reference:

Level

RO

SRO

Tier #

1

Group #

1

K/A #

(058) 2.2.37

Importance Rating

4.6

Loss of DC Power / Equipment Control: Ability to determine operability and/or availability of safety related equipment

Proposed Question: SRO 81

Given the following:

- Unit 1 is at 100% power.
- A loss of Battery Charger EVCA occurred.
- Battery EVCA voltage lowered to 109 VDC.

Following restoration, conditions are:

- Battery EVCA voltage is currently 129 VDC.
- For two connected cells, the Specific Gravity is 1.180.
- For all connected cells, the average Specific Gravity is 1.202.
- Electrolyte temperature is 76°F.

Which ONE (1) of the following completes the statements below?

Battery EVCA is considered _____1_____. The operability of the DC Distribution System ensures that as a MINIMUM, at least ONE DC _____2_____ is available assuming a loss of off-site OR on-site power coincident with a worst case single failure.

REFERENCE PROVIDED

- A. (1) Operable but Degraded
(2) Train
- B. (1) Inoperable
(2) Train
- C. (1) Operable but Degraded
(2) Channel

- D. (1) Inoperable
- (2) Channel

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Operable but degraded would be related to Category A or B parameter out of limits. In this case, the applicant must determine that specific gravity is out of limit for category C, making the battery inoperable
- B. Correct.
- C. Incorrect. See A.
- D. Incorrect. Operability is correct, but basis seeks to ensure that one Train is available rather than one channel as a minimum.

Technical Reference(s) TS 3.8.6 and basis (Attach if not previously provided)
EL-EPL Rev 22

Proposed references to be provided to applicants during examination: TS 3.8.6

Learning Objective: EL-EPL # 3 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41
55.43 2

Comments:

KA matched because the applicant must determine operability of selected equipment related to selected APE. (Loss of DC) SRO level because a determination of operability, and basis for operability, are the required knowledge items for this test item

RFA Concurs 4/17/08

Examination Outline Cross-
reference:

Level

RO

SRO

Tier #

1

Group #

2

K/A #

003 AA2.02

Importance Rating

2.8

Ability to determine and interpret the following as they apply to the Dropped Control Rod: Signal inputs to rod control system

Proposed Question: SRO 82

An event has occurred on Unit 1 with the following indications:

| | <u>Prior to event</u> | <u>After event</u> |
|-----------------|-----------------------|--------------------|
| • P/R N-41 | 40% | 40% |
| • P/R N-42 | 41% | 40% |
| • P/R N-43 | 41% | 42% |
| • P/R N-44 | 42% | 37% |
| • Loop 1A Tave | 567°F | 564°F |
| • Loop 1B Tave | 567°F | 564°F |
| • Loop 1C Tave | 568°F | 563°F |
| • Loop 1D Tave | 568°F | 563°F |
| • Turbine power | 481 MWe | 478 MWe |

The event caused the following additional indications:

- Automatic Rod motion demand
- "P/R CHANNEL DEVIATION" alarm.

Which ONE (1) of the following (1) describes the rod motion demand, and (2) which procedure will be addressed?

- A. (1) INWARD
(2) AP14, Rod Control Malfunction
- B. (1) OUTWARD
(2) AP14, Rod Control Malfunction
- C. (1) INWARD
(2) AP16, Malfunction of Nuclear Instrumentation

- D. (1) OUTWARD
(2) AP16, Malfunction of Nuclear Instrumentation

Proposed Answer: B

Explanation (Optional):

According to OP-MC-IC-IRX the Reactor Control System matches reactor power to turbine load by controlling reactor coolant temperature (T_{avg}). Reference temperature (T_{ref}) is calculated as a function of turbine load from turbine impulse pressure. As turbine load changes, T_{ref} changes. When coolant temperature (T_{avg}) differs from T_{ref} , an error signal is produced. The rate of change of the difference between reactor power and turbine power (power mismatch) is produced to provide an anticipatory signal. The power mismatch signal can generate rod movement prior to a T_{avg}/T_{ref} mismatch. The two error signals, temperature mismatch and power mismatch are summed to yield a rod speed and direction demand signal (combined error) which is sent to the Rod Control System. According to Drawing 7.10 of OP-MC-IC-IRX, the power mismatch signal compares the auctioneered hi nuclear power with Turbine Impulse Pressure Channel I.

- A. Incorrect. Auctioneered power and turbine impulse pressure are essentially the same in both cases, so the anticipatory feature would not be demanding rod movement. Temperature error has T_{ave} 3 degrees below previous and impulse pressure essentially the same as previous; therefore, motion in outward direction.
- B. Correct. See Above. Symptoms of AP14 are met for a Dropped Rod (in this case, rodlets) such as unanticipated rod movement, sudden drop in T_{avg} , nuclear flux tilt, turbine load decrease).
- C. Incorrect. Wrong direction for rods. The symptoms for entry into Ap16 are not met, but plausible because it is not obvious that a rod or rodlets has/have dropped.
- D. Incorrect. Correct direction of motion. However, wrong procedure.

Technical
Reference(s)

OP-MC-IC-IRX, Rev 23

(Attach if not previously
provided)

AP14 Rev 10, Section
B.1

AP16 Rev 9, Section B

Proposed references to be provided to applicants during
examination:

None

Learning Objective: OP-MC-IRX-Obj 5 (As available)Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New XQuestion History: Last NRC Exam NAQuestion Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X10 CFR Part 55 Content: 55.41
55.43 5

Comments:

KA met because inputs to rod control are the evaluated parameters.

SRO level because the assessment requires interpretation of indications to take action within selected EOPs/AOPs

RFA Place NIS Info in Table Format 4/17/08**RFA concurs 5/1/2008**

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|-------------------|------------|
| Tier # | _____ | <u>1</u> |
| Group # | _____ | <u>2</u> |
| K/A # | <u>033 AA2.05</u> | |
| Importance Rating | _____ | <u>3.1</u> |

Ability to determine and interpret the following as they apply to the Loss of Intermediate Range Nuclear Instrumentation:
Nature of abnormality, from rapid survey of control room data

Proposed Question: SRO 83

Given the following:

- A reactor startup is in progress.
- SR Channel N-31 indicates 2×10^3 CPS.
- SR Channel N-32 indicates 2×10^3 CPS.
- IR Channel N-35 indicates 3.0×10^{-11} amps.
- IR Channel N-36 indicates 9.0×10^{-11} amps.

Which ONE (1) of the following describes: (1) the existing plant condition, and (2) the action required in accordance with AP/16, Malfunction of Nuclear Instrumentation, and Technical Specifications?

- A. (1) N-36 is **under**-compensated;
(2) Maintain power stable until N-36 is repaired.
- B. (1) N-35 is **over**-compensated;
(2) Maintain power stable until N-35 is repaired.
- C. (1) N-36 is **under**-compensated;
(2) Raise power to greater than P-10 or place the unit in Mode 3 until N-36 is repaired.
- D. (1) N-35 is **over**-compensated;
(2) Raise power to greater than P-10 or place the unit in Mode 3 until N-35 is repaired.

Proposed Answer: A

Explanation (Optional):

- A. Correct. N-36 is reading approximately 0.7 decades too high for the SR counts displayed, therefore undercompensated. AP/16 requires no positive reactivity additions. TS requires >P-10 or <P-6
- B. Incorrect. N-35 reads correctly. Plausible if applicant confuses overlap and indication for IR NIs
- C. Incorrect. Correct NI but incorrect action taken. Mode 3 entry is not required for the given conditions, and the AP says no positive reactivity additions are allowed, so >P-10 is incorrect
- D. Incorrect. Incorrect NI, Incorrect action taken. See A, B, C above

| | | |
|------------------------|--|-------------------------------------|
| Technical Reference(s) | AP/16 case 2 _____ TS 3.3.1 _____ IC-ENB Rev 26 _____ | (Attach if not previously provided) |
|------------------------|--|-------------------------------------|

Proposed references to be provided to applicants during examination: None

Learning Objective: IC-ENB-Obj 7 & 19 (As available)

| | | |
|------------------|-----------------------|-----------------------------------|
| Question Source: | Bank # _____ | |
| | Modified Bank # _____ | X (Note changes or attach parent) |
| | New _____ | |

Question History: Last NRC Exam _____

| | |
|---------------------------|---------------------------------------|
| Question Cognitive Level: | Memory or Fundamental Knowledge _____ |
| | Comprehension or Analysis <u>X</u> |

| | |
|-------------------------|-------------------|
| 10 CFR Part 55 Content: | 55.41 _____ |
| | 55.43 <u>2, 5</u> |

Comments:
Modified from VC Summer 2007 NRC Exam

KA is met because the applicant must determine the nature of the failure based on given indications, and SRO level because appropriate TS action for plant conditions is required knowledge at SRO level

RFA Concurrs 4/17/08

Given the following plant conditions:

- A reactor startup is in progress.
- SR Channel N-31 indicates 7×10^3 CPS.
- SR Channel N-32 indicates 7×10^3 CPS.
- IR Channel N-35 indicates 8.7×10^{-6} % power.
- IR Channel N-36 indicates 6.0×10^{-6} % power.

Which ONE (1) of the following describes (1) the existing plant condition, (2) the status of P-6, and (3) the action required in accordance with AOP-401.8, Intermediate Range Channel Failure?

- A. (1) N-36 is undercompensated;
(2) P-6 should NOT be satisfied;
(3) maintain power stable until N-36 is repaired.
- B. (1) N-36 is overcompensated;
(2) P-6 should be satisfied;
(3) maintain power stable until N-36 is repaired.
- C. (1) N-36 is undercompensated;
(2) P-6 should be satisfied;
(3) place the unit in Mode 3 until N-36 is repaired.
- D. (1) N-36 is overcompensated;
(2) P-6 should NOT be satisfied;
(3) place the unit in Mode 3 until N-36 is repaired.

Ans. B

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|----------------------|------------|
| Tier # | _____ | <u>1</u> |
| Group # | _____ | <u>2</u> |
| K/A # | <u>(059) G2.2.38</u> | |
| Importance Rating | _____ | <u>4.5</u> |

Accidental Liquid Radwaste Release / Equipment Control: Knowledge of conditions and limitations in the facility license.

Proposed Question: SRO 84

Given the following:

Turbine Building Sump to RC Radiation Monitor, EMF-31, is discovered to have an alarm setpoint that is set ONE decade higher than required.

Which ONE (1) of the following describes the impact of this condition?

The dose or dose commitment to members of the public may exceed the requirements of 10CFR50 of....

- A. 1.5 mrem whole body dose in a calendar quarter, AND 3 mrem whole body dose in a calendar year.
- B. 3 mrem whole body dose in a calendar quarter, AND 5 mrem whole body dose in a calendar year.
- C. 1.5 mrem whole body dose in a calendar year, AND 5 mrem organ dose in a calendar year.
- D. 3 mrem whole body dose in a calendar year, AND 10 mrem organ dose in a calendar year.

Proposed Answer: A

Explanation (Optional):

- A. Correct. This is a memory item. SLC states that the dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS shall be limited During any calendar quarter, to ≤ 1.5 mrem to the total body and to ≤ 5 mrem to any organ, and During any calendar year, to ≤ 3 mrem to the total body and to ≤ 10 mrem to any organ. Below options are plausible because the numbers

supplied are all part of the SLC.

- B. Incorrect. 3 mrem is Whole Body Dose allowed for a calendar year, 5 mrem is Organ Dose allowed for a calendar quarter.
- C. Incorrect. 1.5 mrem correct, 5 mrem is Organ Dose allowed for a calendar quarter
- D. Incorrect. 3 mrem is Whole Body Dose allowed for a calendar year, 10 mrem is Organ Dose allowed for a calendar year.

Technical Reference(s) SLC 16.11.3, Rev 0 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WE-RLR Obj 6 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41
55.43 1, 2,4

Comments:

KA is matched because 10CFR50 requirements for radioactive release are limitations in the facility license. SRO knowledge because the item requires knowledge of SLC (TRM) conditions that will require action by the SRO

RFA Concurs 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|--------------------|------------|
| Tier # | _____ | <u>1</u> |
| Group # | _____ | <u>2</u> |
| K/A # | <u>E06 G2.1.20</u> | |
| Importance Rating | _____ | <u>4.6</u> |

Degraded Core Cooling / Conduct of Operations: Ability to interpret and execute procedure steps.

Proposed Question: SRO 85

Given the following:

- A LOCA has occurred on "1B" Cold Leg.
- ECCS has NOT functioned as required.
- All NC Pumps are TRIPPED.
- PZR PORVs are CLOSED and in AUTO.
- CET's indicate 692°F and rising.
- Reactor Vessel LR Level is 35% and lowering.
- Containment pressure is 3 psig and rising slowly.

Which ONE (1) of the following procedures will the SRO implement for these conditions, and the action taken, and the reason for this action, if ECCS components can NOT be restored?

- Enter FR-C.1, Response To Inadequate Core Cooling;
NC pumps are started prior to secondary depressurization to provide forced cooling of the NCS.
- Enter FR-C.2, Response To Degraded Core Cooling;
NC pumps are started prior to secondary depressurization to provide forced cooling of the NCS.
- Enter FR-C.1, Response To Inadequate Core Cooling;
Secondary depressurization is initiated prior to attempting NC pump operation to depressurize the NCS and facilitate SI Accumulator injection.
- Enter FR-C.2, Response To Degraded Core Cooling;
Secondary depressurization is initiated prior to attempting NC pump operation to depressurize the NCS and facilitate SI Accumulator injection.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Wrong procedure entry and also wrong action for NCP operation. A LOCA is in progress but conditions for FR-C.1 do not exist
- B. Incorrect. NCP would only be operated if secondary depressurization was ineffective in achieving core cooling.
- C. Incorrect. Incorrect entry but correct action with respect to secondary depressurization and NCP operation
- D. Correct.

| | | |
|------------------------|----------------------|-------------------------------------|
| Technical Reference(s) | F-0, FR-C.2 Rev 5 | (Attach if not previously provided) |
| | <u>EP-FRC Rev 10</u> | |

Proposed references to be provided to applicants during examination: None

Learning Objective: EP-FRC Obj 2 & 3 (As available)

| | | | |
|------------------|-----------------|-----------------------------|---------------------------------|
| Question Source: | Bank # | <u>X (WTSI)</u> | |
| | Modified Bank # | <u> </u> | (Note changes or attach parent) |
| | New | <u> </u> | |

Question History: Last NRC Exam BVPS-1 2007

| | | |
|---------------------------|---------------------------------|----------|
| Question Cognitive Level: | Memory or Fundamental Knowledge | |
| | Comprehension or Analysis | <u>X</u> |

| | | |
|-------------------------|-------|----------|
| 10 CFR Part 55 Content: | 55.41 | |
| | 55.43 | <u>5</u> |

Comments:
 KA is matched because item evaluates knowledge of procedure steps for degraded core cooling condition. SRO level because the applicant must assess (evaluate) plant conditions and determine procedure entry, as well as strategy for the procedure entered
RFA Concurs 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|------------------|------------|
| Tier # | _____ | <u>2</u> |
| Group # | _____ | <u>1</u> |
| K/A # | <u>010 A2.01</u> | |
| Importance Rating | _____ | <u>3.6</u> |

Ability to (a) predict the impacts of the following malfunctions or operations on the PZR PCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Heater failures

Proposed Question: SRO 86

Given the following:

- Unit 1 is at 100% power.
- A PZR pressure transient resulted in a momentary cycling of a PZR PORV.
- The crew has stabilized the unit.
- Actions of AP/11, Pressurizer Pressure Anomalies, are being performed.
- NC pressure is 2120 psig and stable.
- PZR heater groups 1A, 1B, 1C are energized.
- PZR heater group 1D is de-energized.
- PZR Spray Valves and PORVs indicate closed.

Which ONE (1) of the following describes the actions that are required in accordance with AP/11 AND Technical Specifications?

- Place group 1D PZR heater mode select switch in MANUAL and energize to raise pressure;
NC System DNB limits are exceeding TS 3.4.1 COLR limits and restore NC pressure to within limits within 2 hours.
- Place PZR PRESS MASTER in MANUAL to control pressure manually;
Pressurizer TS 3.4.9 is applicable due to de-energized backup heaters;
verify capacity of remaining Backup Heaters or initiate a plant shutdown to Mode 3 within the required action time.
- Place group 1D PZR heater mode select switch in MANUAL and energize to raise pressure;
Pressurizer TS 3.4.9 is applicable due to de-energized backup heaters;
TS 3.4.9 no longer applies when 1D Backup Heaters are operating in MANUAL.

- D. Place PZR PRESS MASTER in MANUAL to control pressure manually;
NC System DNB limits are exceeding TS 3.4.1 COLR limits;
Restore NC pressure to within limits within 2 hours.

Proposed Answer: A

Explanation (Optional):

- A. Correct. With NC pressure at 2120, DNB limits are not being met IAW COLR.
- B. Incorrect. 3.4.9 not required for loss of 1D heaters. Action is plausible because it is action required if loss of 1A or 1B heaters occurs. PZR master in manual would be for 1C heaters
- C. Incorrect. 3.4.9 not required for loss of 1D heaters. Action is plausible because it is action allowed for restoration of 1A or 1B heaters
- D. Incorrect. Master controller will not operate bank 1D, will operate 1C. Impact is correct, however

| | | |
|------------------------|--|-------------------------------------|
| Technical Reference(s) | TS 3.4.1; COLR Rev 30 <hr/> AP/11, Rev 10 <hr/> TS 3.4.9 and Basis | (Attach if not previously provided) |
|------------------------|--|-------------------------------------|

Proposed references to be provided to applicants during examination: None

Learning Objective: _____ (As available)

| | | |
|------------------|-----------------------|---------------------------------|
| Question Source: | Bank # _____ | |
| | Modified Bank # _____ | (Note changes or attach parent) |
| | New <u>X</u> | |

Question History: Last NRC Exam _____

| | | |
|---------------------------|---------------------------------|----------|
| Question Cognitive Level: | Memory or Fundamental Knowledge | |
| | Comprehension or Analysis | <u>X</u> |

| | |
|-------------------------|----------------|
| 10 CFR Part 55 Content: | 55.41 _____ |
|-------------------------|----------------|

55.43 2, 5**Comments:**

KA is matched because the item evaluates TS impact of failure, and also requires knowledge of action required to mitigate the consequences of the event.

SRO level because item requires knowledge of TS LCOs involved, and procedure strategy required for mitigation

RFA Concur 4/25/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|------------------|------------|
| Tier # | _____ | <u>2</u> |
| Group # | _____ | <u>1</u> |
| K/A # | <u>026 A2.03</u> | |
| Importance Rating | _____ | <u>4.4</u> |

Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Failure of ESF

Proposed Question: SRO 87

Given the following:

- A Main Steam Break has occurred on Unit 1.
- The Train "A" Load Sequencer is de-energized.
- "B" NS Pump did NOT automatically start.
- The crew has transitioned to E-2, Faulted Steam Generator Isolation, when the following conditions are observed:
 - NC SYSTEM pressure 1400 psig and lowering.
 - Containment Pressure 13 psig and rising.

Which ONE (1) of the following describes (1) the proper Status Tree entry and (2) the criteria for exiting FR-Z.1?

- A. (1) ORANGE CSF Status Tree
(2) Early transition out of FR-Z.1 is allowed after the NC Pumps and RV pumps are off and at least ONE NS Pump is running.
- B. (1) ORANGE CSF Status Tree
(2) Early transition out of FR-Z.1 is allowed ONLY if a higher priority ORANGE or RED condition occurs.
- C. (1) RED CSF Status Tree
(2) Early transition out of FR-Z.1 is allowed after the NC Pumps and RV pumps are off and at least ONE NS Pump is running.
- D. (1) RED CSF Status Tree
(2) Early transition out of FR-Z.1 is allowed ONLY if a higher priority RED condition occurs.

Proposed Answer: A

Explanation (Optional):

- A. Correct. After step 8, procedure is treated as a yellow path for conditions such as a steam line break. This is determined by the SRO
- B. Incorrect. SRO should know that a steam break is occurring and note will apply that procedure may be treated as a yellow path after initial actions are performed
- C. Incorrect. Red path is 15 psig, but actions are correct
- D. Incorrect. Red path is 15 psig and procedure is treated as a yellow path after step 8

| | | |
|------------------------|------------------------|-------------------------------------|
| Technical Reference(s) | FR-Z.1 (Rev 14) | (Attach if not previously provided) |
| | <u>EP-FRZ Rev 15</u> | |
| | <u>OMP 4-3 p17, 18</u> | |

Proposed references to be provided to applicants during examination: None

Learning Objective: EP-FRZ Obj 2 & 4 (As available)

Question Source:

| | | |
|-----------------|-----------------------------|---------------------------------|
| Bank # | <u> </u> | |
| Modified Bank # | <u> </u> | (Note changes or attach parent) |
| New | <u>X</u> | |

Question History: Last NRC Exam

Question Cognitive Level:

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

10 CFR Part 55 Content:

| | |
|-------|-----------------------------|
| 55.41 | <u> </u> |
| 55.43 | <u>5</u> |

Comments:
KA is matched because a containment spray failure has occurred. The impact is the result on CSF status, and the action required is also tested. SRO level

because the SRO must select the appropriate strategy for procedure use, including a judgment of when the Containment Orange condition may be treated as a yellow condition

RFA Concur 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|---------------------|------------|
| Tier # | _____ | <u>2</u> |
| Group # | _____ | <u>1</u> |
| K/A # | <u>(061) G2.4.4</u> | |
| Importance Rating | _____ | <u>4.7</u> |

Auxiliary/Emergency Feedwater System / Emergency Procedures / Plan: Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

Proposed Question: SRO 88

Given the following conditions:

- A Reactor Trip with SI occurs.
- The operators perform the immediate action steps, verify SI flow, and check CA flow in accordance with EP/1/A/5000/E-0, Reactor Trip or Safety Injection.
- The RO reports that CA flow is 425 gpm.
- NCS pressure is 900 psig.
- Containment Pressure peaked at 2.8 psig.
- All SG pressures are between 825 psig and 850 psig.
- All SG NR levels are off scale low.
- All SG WR levels are approximately 30%.
- E-0 directs the crew to implement EP/1/A/5000/F-0, Critical Safety Function Status Trees.

Which ONE (1) of the following actions is to be taken?

- A. Transition to FR-H.1, Response to Loss of Secondary Heat Sink, and attempt to establish additional CA or Feedwater flow, since secondary heat sink requirements are NOT met.
- B. Transition to FR-H.1, Response to Loss of Secondary Heat Sink, and initiate NCS feed and bleed, since NCS feed and bleed initiation criteria are met.
- C. Transition to FR-H.1, Response to Loss of Secondary Heat Sink, and then return to "procedure and step in effect" since a secondary heat sink is NOT required.
- D. Remain in EP-E.0, Reactor Trip or Safety Injection, until directed to transition to EP-E.1, Loss of Reactor or Secondary Coolant, since secondary heat sink requirements are met.

Answer: A

Explanation (Optional):

- A. Correct. NC pressure is higher than SG pressure, therefore, use H.1
- B. Plausible since these are actions that might be taken upon entry into FR-H.1. but SG levels do not meet the criteria. (24%, 36% ACC)
- C. Incorrect. Since NCS pressure is higher than SG pressure, a secondary heat sink is required.
- D. Incorrect. Plausible since a LOCA is in progress, and the only criteria making this incorrect is that NC pressure is higher than SG pressure

Technical Reference(s): FR- H.1 page 2 (Rev 1) (Attach if not previously provided)

E-0, Rev 24

EP-FRH Rev 10

references to be provided to applicants during examination:

None

Learning Objective: EP-FRH Obj 2, 3, 4 (As available)

Question Source: Bank # _____

Modified Bank # EPFRHN011 (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41

55.43 5

Comments:

Modified 2007 SRO Retake #80 conditions and answer. Also modified distractor D

KA is matched because a failure of AFW for these conditions results in entry to FR-H.1. SRO level because the SRO is required to evaluate procedure selection as well as strategy for the condition presented

RFA Concurs 4/17/08

Given the following conditions:

- A Reactor Trip with SI occurs.
- The operators perform the immediate action steps, verify SI flow, and check CA flow in accordance with EP/1/A/5000/E-0, Reactor Trip or Safety Injection.
- The RO reports all 3 CA pumps are off
- NCS pressure is 400 psig.
- All SG pressures are between 425 psig and 450 psig.
- All SG levels are 5% NR
- E-0 directs the crew to implement EP/1/A/5000/F-0, Critical Safety Function Status Trees.

Which ONE (1) of the following actions is to be taken?

- A. Transition to FR-H.1, "Response to Loss of Secondary Heat Sink," and attempt to establish CA or Feedwater flow.
- B. Transition to FR-H.1, "Response to Loss of Secondary Heat Sink," and initiate NCS feed and bleed.
- C. Transition to FR-H.1, "Response to Loss of Secondary Heat Sink," and then return to "procedure and step in effect" since a secondary heat sink is NOT required.
- D. Remain in EP-E.0, Reactor Trip or Safety Injection since a secondary heat sink is NOT required

Ans C

| Examination Outline Cross-reference: | Level | RO | SRO |
|--------------------------------------|-------------------|--------------------|------------|
| | Tier # | _____ | <u>2</u> |
| | Group # | _____ | <u>1</u> |
| | K/A # | <u>073 G2.2.22</u> | |
| | Importance Rating | _____ | <u>4.7</u> |

Process Radiation Monitoring System / Equipment Control: Knowledge of limiting conditions for operations and safety limits

Proposed Question: SRO 89

Which ONE (1) of the following completes the statement below:

The MINIMUM radiation monitor requirement that provides the preferred means of NCS primary to secondary leak rate monitoring in accordance with SLC surveillance requirements is EMF-33, Condenser Evacuation Monitor ___1___ N-16 Monitors, EMF-71 – EMF-74,

AND

the MINIMUM sensitivity required to ensure the monitor remains OPERABLE, in accordance with the SLC and bases is ___2___ GPD?

- A. (1) OR
(2) 135
- B. (1) OR
(2) 30
- C. (1) AND
(2) 135
- D. (1) AND
(2) 30

Proposed Answer: D

Explanation (Optional):

According to SLC 16.7.6 Basis, EMF-33 or the N-16 monitors must be sensitive to at least 30 GPD to be considered operable. Tech Spec 3.4.13, RCS Operational Leakage, limits SG tube leaks to 135 GPD through any one SG.

- A. Incorrect. 135 GPD is leakage limited by TS 3.4.13. 135 GPD is plausible if the applicant confuses the SLC vs Tech Spec requirements. Both monitors must be operable. If either monitor is inoperable, you enter an Action Statement in the SLC. "OR" is plausible because the only SLC requirement if one EMF is inoperable is to ensure the other EMFs are operable.
- B. Incorrect. Both monitors must be operable. 30 GPD is correct.
- C. Incorrect. 135 GPD leakage is TS 3.4.13 limit.
- D. Correct.

Technical Reference(s) SLC 16.7.6, Rev 99 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WE-EMF Obj 10 (As available)

Question Source: Bank # _____
 Modified Bank # _____ (Note changes or attach parent)
 New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 _____
 55.43 2

Comments:

KA is matched because the SLC LCO for process radiation monitoring is being evaluated, and further SRO knowledge is evaluated because the SRO must know basis for operability of the detectors

RFA Concur 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|------------------|------------|
| Tier # | _____ | <u>2</u> |
| Group # | _____ | <u>1</u> |
| K/A # | <u>076 A2.02</u> | _____ |
| Importance Rating | _____ | <u>3.1</u> |

Ability to (a) predict the impacts of the following malfunctions or operations on the SWS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Service water header pressure

Proposed Question: SRO 90

Given the following conditions:

- A plant cooldown is in progress.
- Current conditions are:
 - NC Pressure – 1400 psig
 - NC Temperature – 440°F
 - Cold Leg Accumulators have NOT been isolated
 - “B” Train in service

An event occurs:

- NC System pressure starts to go down at approximately 2 psi per minute.
- PZR level is going down at 5% per minute.
- Containment Pressure is rising at 0.1 psig per minute.
- Only Train “B” Safety Injection has actuated.

Which ONE (1) of the following describes (1) the impact on the unit, and (2) the action that must be taken?

- A. (1) NC Pumps will overheat due to loss of RN cooling.
(2) Enter E-0, Reactor Trip or Safety Injection, and initiate Train A Safety Injection to restore flow to Train A Essential Header and RB Non-Essential Header.
- B. (1) The running DG will overheat due to loss of RN cooling.
(2) Enter E-0, Reactor Trip or Safety Injection, and initiate Train A Safety Injection to restore flow to Train A Essential Header and RB Non-Essential Header.
- C. (1) NC Pumps will overheat due to loss of RN cooling.
(2) Enter AP-34, Shutdown LOCA, and initiate Train A Safety Injection to restore flow to Train A Essential Header and RB Non-Essential Header.
- D. (1) The running DG will overheat due to loss of RN cooling
(2) Enter AP-34, Shutdown LOCA, and initiate Train A Safety Injection to restore flow to Train A Essential Header and RB Non-Essential Header.

Proposed Answer: A

Explanation (Optional):

A Safety Injection signal from either unit will cause RN train separation on both units. After train separation, the "A" train of RN will supply the Rx Bldg Non-Essential header (NC Pump motor coolers). Each RN train will supply its Essential Header (D/G cooling water). If a "B" train ONLY SI occurs, the RN trains will be separated (RN-41B closes), BUT the "A" RN pump will NOT get a start signal. If the "B" train was in service prior to the event, there will be no RN flow to the Rx Bldg Non-Essential Header. (PSS-RN, pg 35, 37, 51, and drawing 7.15).

AP-34 entry conditions are for LOCAs that occur in Mode 3 after the CLAs have been isolated or in Mode 4. Otherwise, E-0 would be implemented. E-0 step 5 Immediate Action directs the operator to initiate Safety Injection if one or both trains failed to auto actuate.

A is correct.

B is incorrect. Correct procedure to enter. The "A" D/G will not get cooling water due to the RN train separation. However, the "A" D/G will not start until Train "A" SI is initiated. At that point, the "A" RN pump will start. Do not open the RN cross-connect valves on a valid SI signal.

C is incorrect. Credible because the procedure would be entered in Mode 4 if NC pressure was lower. Action to restore RN is correct though

D is incorrect. Wrong procedure as in C above. Also wrong action. If both sequencers were actuated, the action could work, but not performed for valid SI

| | | |
|-------------------------|---------------------------------|-------------------------------------|
| Technical Reference(s): | OMP 4-3, p8 Rev 26 | (Attach if not previously provided) |
| | E-0 step 5 Rev 24; AP-34 Rev 13 | |
| | DG-EQB Rev 16 | |
| | ECC-CLA Rev 28 | |
| | EP-E0 Rev 12 | |
| | PSS-RN, p35,37,51,83,105 | |

Proposed references to be provided to applicants during examination: None

Learning Objective: DG-EQB Obj 6; PSS_RN Obj 16 (As available)

Question Source: Bank # X
 Modified Bank # _____ (Note changes or attach parent)
 New _____

Question History: Last NRC Exam 2007
McGuire

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

10 CFR Part 55 Content: 55.41
 55.43 5

Comments:

KA is matched because conditions represented by the stem indicate loss of header pressure on 1 header. SRO level because the applicant must assess plant conditions and determine procedure use based upon selected impact

RFA Concurs 4/17/08

| Examination Outline Cross-reference: | Level | RO | SRO |
|--------------------------------------|-------------------|---------------------|------------|
| | Tier # | _____ | <u>2</u> |
| | Group # | _____ | <u>2</u> |
| | K/A # | <u>(015) G2.1.7</u> | |
| | Importance Rating | _____ | <u>4.7</u> |

Nuclear Instrumentation System / Conduct of Operations: Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

Proposed Question: SRO 91

Given the following plant conditions:

- A reactor startup is in progress.
- Control Bank "C" rods are at 130 steps.
- Both Intermediate Range channels indicate approximately 5×10^{-11} amps.
- Source Range Channel N-31 drifts DOWNSCALE and now indicates 5×10^0 CPS.

Which ONE (1) of the following describes the correct action for the plant conditions and the Technical Specification basis for the action?

- Continue the reactor startup; with only one Source Range channel operable; 48 hours is allowed to restore the inoperable channel to service.
- Suspend the reactor startup; Source Range channels are NOT currently required to trip the reactor; however, the Source Range monitoring functions must be available.
- Continue the reactor startup; only one Source Range channel is required for trip protection.
- Suspend the reactor startup; with only one Source Range channel operable, the minimum required trip protection is NOT met.

Proposed Answer: D

Explanation (Optional):

- Incorrect. Cannot continue the startup, although 48 hours is the LCO action time for 3.3.1
- Incorrect. Correct that startup is suspended, but power is below P-6, and

- SR high flux trip is required
- C. Incorrect. Cannot continue and Power <P-6/P-10, SR high flux is not enabled. 1 channel required for trip, but 2 required to be operable
- D. Correct. TS basis discusses minimum protection for current conditions requiring 2 SR NIs

| | | |
|------------------------|-----------------------------|-------------------------------------|
| Technical Reference(s) | TS 3.3.1 Basis | (Attach if not previously provided) |
| | <u>AP/16 Rev 10</u> | |
| | <u>AP-16 Basis Document</u> | |
| | <u>IC-ENB Rev 26</u> | |

Proposed references to be provided to applicants during examination: None

Learning Objective: _____ (As available)

| | | | |
|------------------|-----------------|----------|---------------------------------|
| Question Source: | Bank # | <u>X</u> | |
| | Modified Bank # | _____ | (Note changes or attach parent) |
| | New | _____ | |

Question History: Last NRC Exam _____

| | | |
|---------------------------|---------------------------------|----------|
| Question Cognitive Level: | Memory or Fundamental Knowledge | |
| | Comprehension or Analysis | <u>X</u> |

| | | |
|-------------------------|-------|----------|
| 10 CFR Part 55 Content: | 55.41 | |
| | 55.43 | <u>2</u> |

Comments:
WTSI Bank, previous NRC – Unit not identified

KA matched because an evaluation must be made based upon the NI failure presented. SRO level because they must know the TS action required for startup, and also the basis for the action

RFA Occurs 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|------------------|------------|
| Tier # | _____ | <u>2</u> |
| Group # | _____ | <u>2</u> |
| K/A # | <u>028 A2.03</u> | |
| Importance Rating | _____ | <u>4.0</u> |

Ability to (a) predict the impacts of the following malfunctions or operations on the HRPS; and (b) based on those predictions, use Procedures to correct, control, or mitigate the consequences of those malfunctions or operations: The hydrogen air concentration in excess of limit flame propagation or detonation with resulting equipment damage in containment

Proposed Question: SRO 92

Given the following:

- A LOCA has occurred on Unit 2.
- Due to subsequent failures, the crew is performing actions contained in FR-C.1, Response to Inadequate Core Cooling.
- Hydrogen Igniters and Recombiners are OFF.
- NF AHUs are OFF.
- Containment Hydrogen Concentration is currently 3% and rising slowly.

Which ONE (1) of the following describes the action required, and the reason for the action, in accordance with FR-C.1?

- Place Hydrogen Igniters in service ONLY, because Hydrogen Recombiner operating temperatures may cause a challenge to containment integrity due to hydrogen ignition.
- Place Hydrogen Igniters and Hydrogen Recombiners in service because containment hydrogen concentration is below the limit which could cause a concern for containment integrity violations due to hydrogen ignition.
- Do NOT place either Hydrogen Igniters or Hydrogen Recombiners in service because containment hydrogen concentration is above the limit which could cause a concern for containment integrity violations due to hydrogen ignition.
- Place Hydrogen Recombiners in service ONLY, because placing Hydrogen Igniters in service when containment hydrogen is above 0.5% may cause a challenge to containment integrity due to hydrogen ignition.

Proposed Answer: B

Explanation (Optional):

Per the basis document of FR-C.1, step 4, if hydrogen concentration is between 0.5% and 6%, there is limited burn potential. Therefore, both the igniters and the recombiners are placed in service. If hydrogen is less than 0.5%, a flammable situation is not imminent, so the igniters are placed in service. If hydrogen is greater than 6% there is a potential explosive mixture. Hydrogen concentration must be reduced in other ways before starting the recombiners or igniters.

- A. Incorrect. Recombiners are allowed to be started below 6%
- B. Correct.
- C. Incorrect. Action is correct for >6% concentration
- D. Incorrect. Igniters will be placed in service as well as recombiners if concentration is below 6%

| | | |
|------------------------|---|-------------------------------------|
| Technical Reference(s) | FR-C.1 step 4 Rev 5 and basis <u>EP-FRC Rev 10</u> | (Attach if not previously provided) |
|------------------------|---|-------------------------------------|

Proposed references to be provided to applicants during examination: None

Learning Objective: EP-FRC Obj 6 (As available)

| | | |
|------------------|-----------------------|---------------------------------|
| Question Source: | Bank # _____ | (Note changes or attach parent) |
| | Modified Bank # _____ | |
| | New <u>X</u> | |

Question History: Last NRC Exam

| | | |
|---------------------------|---------------------------------|----------|
| Question Cognitive Level: | Memory or Fundamental Knowledge | |
| | Comprehension or Analysis | <u>X</u> |

| | | |
|-------------------------|-------|-------------|
| 10 CFR Part 55 Content: | 55.41 | |
| | 55.43 | <u>1, 5</u> |

Comments:

KA is matched because it evaluates operation of equipment to keep hydrogen concentration below the explosive limit. SRO only because the applicant must know the design and procedural basis for operation of hydrogen igniters and recombiners

RFA Concur 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|------------------|------------|
| Tier # | _____ | <u>2</u> |
| Group # | _____ | <u>2</u> |
| K/A # | <u>079 A2.01</u> | |
| Importance Rating | _____ | <u>3.2</u> |

Ability to (a) predict the impacts of the following malfunctions or operations on the SAS; and (b) based on those predictions, use Procedures to correct, control, or mitigate the consequences of those malfunctions or operations:: Cross-connection with IAS

Proposed Question: SRO 93

Given the following conditions:

- Unit 1 is at 100% power.
- The following alarm is received:
 - VIVS LO PRESS.
- VI pressure is 80 psig and lowering slowly.
- The crew is performing actions of AP/1/A/5500/022, Loss of VI.

Which ONE (1) of the following describes the action required for current plant conditions in accordance with AP-22, and the position of 1VI-820, VI Supply to VS Control valve?

- A. Perform Enclosure 4, Diesel VI Operation ONLY; 1VI-820 is currently closed.
- B. Perform Enclosure 4, Diesel VI Operation ONLY; 1VI-820 remains open.
- C. Perform Enclosure 4, Diesel VI Operation AND Enclosure 5, VI Dryer and VI to VS System Isolation; 1VI-820 is currently closed.
- D. Perform Enclosure 4, Diesel VI Operation AND Enclosure 5, VI Dryer and VI to VS System Isolation; 1VI-820 remains open.

Proposed Answer: C

Explanation (Optional):

A is incorrect. Because pressure is 80 psig (below 82) BOTH enclosures must be performed

B is incorrect, as the valve will auto close at 90, and pressure is currently 80

C is Correct. AP/22 requires performance of BOTH enclosures at this air pressure

D is incorrect. Credible because the action is correct and will be performed when LO-LO PRESS alarm is received at 82 psig, but valve is already closed

Technical Reference(s): SS-VI, rev 32 (Attach if not previously provided)
AP/1/A/5500/022 Rev 27
AP-22 Basis Document

Proposed references to be provided to applicants during examination: None

Learning Objective: SS-VI Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 _____
55.43 5

Comments:
KA is matched because the item evaluates knowledge of plant conditions that will result in isolation of VI/VS cross-tie (Instrument Air to Service Air) SRO level because plant conditions are presented where the applicant must know which procedure sections will be required to mitigate the consequences and restore pressure

RFA Conkurs 4/17/08

| | | | |
|--------------------------------------|-------------------|----------------|------------|
| Examination Outline Cross-reference: | Level | RO | SRO |
| | Tier # | _____ | <u>3</u> |
| | Group # | _____ | <u>1</u> |
| | K/A # | <u>G2.1.35</u> | _____ |
| | Importance Rating | _____ | <u>3.9</u> |

Knowledge of the fuel-handling responsibilities of SRO's.

Proposed Question: SRO 94

Unit 1 is in Mode 6, core alterations are in progress.

In accordance with NSD-414, Fuel Handling, which ONE (1) of the following identifies who is allowed to approve the bypassing of a Fuel Handling interlock that is NOT specified in a procedure?

- A. Operations Shift Manager OR Fuel Handling SRO
- B. Fuel Handling SRO ONLY
- C. Refueling Supervisor OR Fuel Handling SRO
- D. Refueling Supervisor ONLY

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Shift Manager responsible for unit, but FH SRO is responsible for all refueling activities
- B. Correct. Section 414.2.9.A.7 identifies that approving the bypassing of fuel handling interlocks when not when NOT specified by an approved procedure is a responsibility of the Fuel handling SRO.
- C. Incorrect. Administrative oversight required, but not approval for FH bypass
- D. Incorrect. Nuclear Engineers will be involved in the core alterations, but are not part of approval for FH bypass; they are only approval authority during physics testing

| | | |
|------------------------|---|-------------------------------------|
| Technical Reference(s) | <u>NSD-414 Section 414.2.9.A.7, Rev 2</u> | (Attach if not previously provided) |
| | <u>FH-FC Rev 18</u> | |

Proposed references to be provided to applicants during examination: None

Learning Objective: FH-FC, 1 and 5 (As available)

Question Source: Bank # _____
 Modified Bank # _____ (Note changes or attach parent)
 New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41
 55.43 6, 7

Comments:

KA is matched because the item evaluates a decision by refueling SROs. SRO level because knowledge of SRO responsibilities during refueling is 10CFR55.43 (b) item 6/7 specific

RFA Concurs 4/25/08

Examination Outline Cross-
reference:

Level

RO

SRO

Tier #

3

Group #

2

K/A #

G2.2.7

Importance Rating

3.6

Knowledge of the process for conducting special or infrequent tests.

Proposed Question: SRO 95

Given the following:

- Unit 1 is in Mode 1 on night shift.
- The Work Window Manager and Site Risk Expert are NOT available.
- A Temporary Test (TT) procedure is being performed on RN.
- During performance of the TT, an equipment failure occurred.

In accordance with SOMP 02-02, Operations Roles in the Risk Management Process, which ONE (1) of the following identifies the individual RESPONSIBLE for determining the risk level, and identifies the required action if the risk level becomes ORANGE?

- A. WCC SRO;
OSM must evaluate the restoration plan and provide final authority regarding plan implementation.
- B. WCC SRO;
On-Shift CRS must evaluate the restoration plan and provide final authority regarding plan implementation.
- C. On-Shift CRS;
OSM must evaluate the restoration plan and provide final authority regarding plan implementation.
- D. On-Shift CRS;
On-Shift CRS must evaluate the restoration plan and provide final authority regarding plan implementation.

Proposed Answer: A

Explanation (Optional): SOMP 02-02 summarizes the responsibilities of individuals in the Operations (OPS) organization in the processes used to assess and manage risk significant activities at Duke nuclear sites.

- A. Correct. During non-core business hours when the WWM or Site Risk Expert are not available, it is the responsibility of the WCC SRO to evaluate the current risk when existing conditions do not match those evaluated based on a planned schedule due to emergent work. (SOMP 02-02 Section 5.6.2) **WHEN** entering an orange or red condition from emergent work, the OSM will evaluate the restoration plan and have final authority on whether the plan is implemented. (SOMP 02-02 Section 5.5.3)
- B. Incorrect. While it is the responsibility of the WCC SRO to determine the risk level as mentioned above it is the responsibility of the OSM to evaluate the restoration plan and who has the final authority to implement.
- C. Incorrect. On-shift CRS is not responsible for determining risk. On-Shift CRS responsibility in the risk management process is to maintain awareness of current electronic Risk Assessment color conditions for each Unit. He is to immediately notify the WCC SRO or any emergent equipment problems but is not responsible for determining the change is risk status for the affected Unit. (SOMP 02-02 Section 5.7)
- D. Incorrect. On-shift CRS is not responsible for either task

| | | |
|------------------------|---------------------------------------|-------------------------------------|
| Technical Reference(s) | SOMP 02-02 p 7 | (Attach if not previously provided) |
| | <u>OP-MC-ADM-MRA, p49, 51 (Rev 9)</u> | |

Proposed references to be provided to applicants during examination: None

Learning Objective: ADM-MRA, Obj # 7 (As available)

Question Source: Bank # _____
 Modified Bank # _____ (Note changes or attach parent)
 New X

Question History: Last NRC Exam _____

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

10 CFR Part 55
Content:

55.41

55.43

3

Comments:

KA and SRO level is matched because the item evaluates SRO responsibilities during equipment or procedure step failure during a temporary test procedure

RFA Concurrs 04/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|----------------|------------|
| Tier # | _____ | <u>3</u> |
| Group # | _____ | <u>2</u> |
| K/A # | <u>G2.2.22</u> | _____ |
| Importance Rating | _____ | <u>4.7</u> |

Knowledge of limiting conditions for operations and safety limits.

Proposed Question: SRO 96

Given the following:

- Unit 1 is in Mode 3.
- NC system pressure has increased to above the NCS Pressure Safety Limit.

Which ONE (1) of the following describes the MAXIMUM TIME allowed to reduce NC pressure to below the Safety Limit and the safety valves that are credited to open in the Accident Analysis?

- A. 1 hour;
Pzr Code Safeties ONLY.
- B. 5 minutes;
Pzr Code Safeties ONLY.
- C. 1 hour;
Pzr Code Safeties and the Main Steam Code Safeties.
- D. 5 minutes;
Pzr Code Safeties and the Main Steam Code Safeties.

Proposed Answer: D

Explanation (Optional):

The TS 3.4.10 Basis document states that the Pzr safety valves provide, in conjunction with the Reactor Protection System, overpressure protection for the RCS, and are designed to prevent the system pressure from exceeding the system Safety Limit (SL), 2735 psig, which is 110% of the design pressure. The TS 3.7.1 basis document states that the MSSVs provide protection against overpressurizing the reactor coolant pressure boundary (RCPB) by providing a heat sink for the removal of energy from the Reactor Coolant System (RCS) if the preferred heat sink, provided by the Condenser and Circulating Water System, is not available. The basis document for TS 2.1.1 states that

Automatic enforcement of the reactor core SLs is provided by the appropriate operation of the RPS and the steam generator safety valves. Section 2.2.2.2 of TS 2.1 states that In MODE 3, 4, or 5, restore compliance within 5 minutes.

- A. Incorrect. Both sets of Code Safeties credited (See above). 1 hour allowed for Modes 1 and 2, but Mode 3 and below require pressure to be reduced below the SL within 5 minutes See Above).
- B. Incorrect. Both sets of Code Safeties credited (See above). Correct timeframe.
- C. Incorrect. Correct valves. 1 hour allowed for Modes 1 and 2, but Mode 3 and below require pressure to be reduced below the SL within 5 minutes See Above).
- D. Correct. Both sets of Code Safeties credited (See above). Mode 3 and below require pressure to be reduced below the SL within 5 minutes See Above

| | | |
|------------------------|--|-------------------------------------|
| Technical Reference(s) | TS 2.1.1 and basis; TS 3.4.10 and basis, 3.7.1 and basis | (Attach if not previously provided) |
| | PS-NC Rev 30 | |

Proposed references to be provided to applicants during examination: None

Learning Objective: IC-IPE Obj 10, 14; PC-NC Obj 17 (As available)

Question Source: Bank #
 Modified Bank # X (Note changes or attach parent)
 New

Question History: Last NRC Exam Vogtle

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

10 CFR Part 55 Content: 55.41
 55.43 1, 2

Comments:

NRC developed test item for Vogtle exam, modified

KA is matched because item requires knowledge of LCOs 3.4.10 and 3.7.1, TS 2.1.2, and action in a lower mode specific to protection of a safety limit.

This is SRO level because it requires knowledge of information within the Facility License, Technical Specifications, and their basis.

RFA Concur 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|----------------|------------|
| Tier # | _____ | <u>3</u> |
| Group # | _____ | <u>3</u> |
| K/A # | <u>G2.3.14</u> | _____ |
| Importance Rating | _____ | <u>3.8</u> |

Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.

Proposed Question: SRO 97

Given the following:

- A load reduction from 100% to 60% was performed on Unit 1 in the last 30 minutes due to a Feedwater Control problem.
- The following alarms are received:
 - 1EMF-48, REACTOR COOLANT HIGH RAD
 - 1EMF-18, REACTOR COOLANT FILTER 1A
- Chemistry sample indicates that the high activity is due to failed fuel.
- Dose-Equivalent Iodine-131 is approximately 5 microcuries per gram.
- The crew enters AP/18, High Activity in Reactor Coolant.

Which ONE (1) of the following describes the action(s) that will be performed in accordance with AP/18, and identifies the required Technical Specification actions?

REFERENCE PROVIDED

- A. Raise Letdown flow to 120 GPM;
Plant shutdown and cooldown to less than 500°F must be performed.
- B. Raise Letdown flow to 120 GPM;
Plant operation may continue with increased NC SYSTEM sampling frequency.
- C. Ensure Mixed Bed Demin is in service and evaluate use of Cation Bed Demin;
Plant shutdown and cooldown to less than 500°F must be performed.

- D. Ensure Mixed Bed Demin is in service and evaluate use of Cation Bed Demin;
Plant operation may continue with increased NC SYSTEM sampling frequency.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Letdown flow is raised only for crud burst. Failed Fuel is indicated by iodine activity. TS shutdown is required if I-131 DE was above the curve in figure 3.4.16-1 or if operation at this level continued for 48 hours.
- B. Incorrect. Letdown flow is raised only for crud burst. Failed Fuel is indicated by iodine activity, as described by conditions presented.
- C. Incorrect. TS shutdown is required if I-131 DE was above the curve in figure 3.4.16-1 or if operation at this level continued for 48 hours. This condition is above TS steady state limit but below the transient limit on the curve
- D. Correct.

| | | |
|------------------------|--------------------------------|-------------------------------------|
| Technical Reference(s) | AP/18 Rev 2 and Basis Document | (Attach if not previously provided) |
| | <u>TS 3.4.16</u> | |

Proposed references to be provided to applicants during examination: TS Figure 3.4.16-1

Learning Objective: _____ (As available)

| | | |
|------------------|-----------------------|---------------------------------|
| Question Source: | Bank # _____ | |
| | Modified Bank # _____ | (Note changes or attach parent) |
| | New <u>X</u> | |

Question History: Last NRC Exam _____

| | | |
|---------------------------|---------------------------------|----------|
| Question Cognitive Level: | Memory or Fundamental Knowledge | |
| | Comprehension or Analysis | <u>X</u> |

ES-401

Sample Written Examination
Question Worksheet

Form ES-401-5

10 CFR Part 55
Content:

55.41

55.43

2, 4

Comments:

KA is matched because the item evaluates understanding of a fuel failure vs a crud burst. SRO level because the SRO must determine appropriate action based upon evaluation of this condition. The action taken is required by Technical Specifications

RFA Concur 4/17/08

Examination Outline Cross-
reference:

| Level | RO | SRO |
|-------------------|---------------|------------|
| Tier # | _____ | <u>3</u> |
| Group # | _____ | <u>3</u> |
| K/A # | <u>G2.3.6</u> | _____ |
| Importance Rating | _____ | <u>3.8</u> |

Ability to approve release permits

Proposed Question: SRO 98

Unit 1 is at 100% power.

A Radwaste Operator brings a gaseous radiological release permit to the SRO for approval.

Given the following information on the permit:

- Release ID = WGDT B
- Most restrictive release rate = $3.24E+02$ cfm
- Recommended release rate = $4.00E+01$ cfm
- EMF-50(L) (WASTE GAS) in service = yes
- EMF background = $1.58 E+01$
- Trip 1 setpoint = $5.34E+02$
- Trip 2 setpoint = $4.99E+03$

Which ONE (1) of the following actions is correct for approval of this release permit?

- The release may be approved as presented ONLY if 1EMF-36(L) Unit Vent Gas is also operable.
- The release may NOT be approved because the EMF-50(L) trip setpoints are not correct.
- The release may NOT be approved because the release rate is not correct.
- The release may be approved as presented if a source check of EMF-50(L) is performed successfully.

Proposed Answer: **D**

Explanation (Optional):

Per WE-RGR, pg 13, The SRO will review the GWR to ensure the Recommended Release Rate is less than the most restrictive release rate. He also reviews the expected range of the EMF and the Trip 1 and 2 setpoints. He also checks the operability of the controlling EMF (normally 0EMF-50, but could be 1EMF-36). Operability of BOTH EMF-50 and 1EMF-36 is preferred but NOT required. The SRO also ensures the controlling EMF has been source checked.

- A. Incorrect. Permit can be approved, but EMF-36 does not need to be operable.
- B. Incorrect: - nothing wrong with EMF-50L trip setpoints
Plausible: - background < trip 1 < trip 2
- C. Incorrect: - recommended release rate is less than the move restrictive release rate
Plausible: - if candidate does not understand this requirement
- D. Correct: - The SRO ensures the EMF Source check is signed off.

Technical Reference(s) OP-MC-WE-RGR, Rev 9 (Attach if not previously provided)
OP/0/B/6200/019, Encl 4.1
(Rev 29)

Proposed references to be provided to applicants during examination: None

Learning Objective: OP-MC-WE-RLR obj 3 (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 _____
55.43 4

Comments:

KA is matched because the item evaluates requirements for issuing a radioactive liquid waste release permit. SRO level because the SRO is responsible for authorizing the release based on given conditions

ES-401

Sample Written Examination
Question Worksheet

Form ES-401-5

Examination Outline Cross-
reference:

Level

RO

SRO

Tier #

3

Group #

4

K/A #

G2.4.46

Importance Rating

4.2

Ability to verify that the alarms are consistent with the plant conditions.

Proposed Question: SRO 99

A transient has occurred on Unit 2 resulting in the following alarms:

- OTDT RUNBACK/ROD STOP ALERT
- TREF/T-AUCT ABNORMAL

Reactor power indicates the following:

- N41 – 104.1%
- N42 – 103.2%
- N43 – 104.3%
- N44 – 102.9%

Tave indicates 589 degrees F.

Which ONE (1) of the following has occurred, and what is the Technical Specification implication of the event?

- A. Uncontrolled Rod Withdrawal;
Linear Heat Rate and Hot Channel Factors may be challenged.
- B. Uncontrolled Rod Withdrawal;
Shutdown Margin assumptions for anticipated operational transients may be invalid.
- C. Turbine Impulse Channel Failure;
Linear Heat Rate and Hot Channel Factors may be challenged.
- D. Turbine Impulse Channel Failure;
Shutdown Margin assumptions for anticipated operational transients may be invalid.

Proposed Answer: A

Explanation (Optional):

A is correct because core power is increasing and LHR is a function of rods.

B is incorrect because SDM is a function of several parameters, and the positive reactivity added by rod withdrawal is cancelled by the negative reactivity from power defect and MTC.

C is incorrect because an impulse channel failure would result in a lower power and lower Tave because rods would insert. If the impulse channel failed high, the impact would be minimal because the input is clipped at high power.

D is incorrect for same reason as C, and basis is incorrect, but plausible because shutdown margin would be the concern if rod insertion were occurring to RILs

| | | |
|-------------------------|---|-------------------------------------|
| Technical Reference(s): | AP-01 (Rev 14) and Basis Document (Rev 5) | (Attach if not previously provided) |
| | <u>TS 3.2.1 Basis</u> | |
| | <u>CTH-CP Rev 9</u> | |

Proposed references to be provided to applicants during examination: None

Learning Objective: CTH-CP Obj 1 (As available)

| | | | |
|------------------|-----------------|-----------------------------|---------------------------------|
| Question Source: | Bank # | <u> </u> | |
| | Modified Bank # | X | (Note changes or attach parent) |
| | New | <u> </u> | |

| | | |
|-------------------|---------------|-----------------|
| Question History: | Last NRC Exam | 2006 Exam |
| | | 100 |
| | | <u>Modified</u> |

| | | |
|---------------------------|---------------------------------|-----------------------------|
| Question Cognitive Level: | Memory or Fundamental Knowledge | <u> </u> |
| | Comprehension or Analysis | <u>X</u> |

| | | |
|-------------------------|-------|-----------------------------|
| 10 CFR Part 55 Content: | 55.41 | <u> </u> |
| | 55.43 | <u>2</u> |

Comments:
KA matched because the item evaluates understanding for the cause of alarms, related to current plant conditions. SRO level because the item evaluates

knowledge of accident analysis assumptions and core operating limits as stated in TS basis

RFA approve 5/1/2008

Given the following conditions:

A transient has occurred on Unit 1 resulting in the following alarms:

- OTDT RUNBACK/ROD STOP ALERT
- ROD CONTROL URGENT FAILURE
- OPDT REACTOR TRIP

Reactor power indicates the following:

- N41 – 105.2%
- N42 – 106.2%
- N43 – 105.9%
- N44 – 106.1%
- Tavg is 581°F

Which ONE (1) of the following has occurred, and which procedure(s) is/are required to be implemented?

- A. Uncontrolled Rod Withdrawal; E-0, Reactor Trip or Safety Injection.
- B. Uncontrolled Rod Withdrawal; AP-14, Rod Control Malfunctions.
- C. SG Safety Valve opened coincident with a rod control failure; E-0, Reactor Trip or Safety Injection.
- D. SG Safety Valve opened coincident with a rod control failure; AP-01, Steam Leak and AP-14, Rod Control Malfunctions.

Answer: C

| Examination Outline Cross-reference: | Level | RO | SRO |
|--------------------------------------|-------------------|---------------|------------|
| | Tier # | _____ | <u>3</u> |
| | Group # | _____ | <u>4</u> |
| | K/A # | <u>G2.4.8</u> | |
| | Importance Rating | _____ | <u>4.5</u> |

Knowledge of how abnormal operating procedures are used in conjunction with EOP's.

Proposed Question: SRO 100

Unit 1 was at 100% power.

- A complete loss of RN occurred.
- The crew entered AP/20, Loss of RN.
- The operators attempted to manually trip the reactor but the trip breakers failed to open.

Which ONE (1) of the following statements correctly describes the proper procedural flow path/actions for these conditions?

Enter E-0 and....

- A. Continue in AP/20 and attempt to restore at least one RN Train; enter FR-S.1, establish emergency boration; both AP/20 and FR-S.1 must be performed to completion prior to returning to E-0.
- B. Immediately transition to FR-S.1 and initiate emergency boration; continuing in AP/20 only after exit from the EOP network.
- C. Continue in AP/20 and attempt to restore at least one RN Train until transition to FR-S.1. AP/20 may only be performed when FR-S.1 is not in progress.
- D. Immediately transition to FR-S.1 and attempt to shut down the reactor while continuing on in AP/20 to restore RN as time and conditions permit.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. MNS EP's are written assuming that RN is available which gives AP-20 a unique importance with being performing concurrently if RN has been lost. The candidate may think that there is no success path without RN

being restored and therefore find this to be a prudent course of action. It is not a requirement to perform associated APs to completion prior to completion entry to E-0.

- B. Incorrect. AP/20 may be performed concurrently because it provides support for EOP use
- C. Incorrect. Use of AP/20 may be restricted when ECCS is actuated, but not by use of FR unless it clashes with steps in FR. Generally, AP use is not advisable in EPs, but may be used if required to support performance of EPs.
- D. Correct.

| | | |
|------------------------|--|-------------------------------------|
| Technical Reference(s) | OMP 4-3 p16, 17. 22 | (Attach if not previously provided) |
| | AP-20, Rev 23 and Basis Document (Rev 4) | |
| | EP-F) Rev 7 | |
| | E-0 Rev 24 | |

Proposed references to be provided to applicants during examination: None

Learning Objective: EP-F0 Obj 3 (As available)

| | | |
|------------------|---|---------------------------------|
| Question Source: | Bank # <u>X</u> | |
| | Modified Bank # <u> </u> | (Note changes or attach parent) |
| | New <u> </u> | |

Question History: Last NRC Exam Wolf Creek 2007

| | | |
|---------------------------|---------------------------------|---|
| Question Cognitive Level: | Memory or Fundamental Knowledge | |
| | Comprehension or Analysis | X |

| | | |
|-------------------------|-------|---|
| 10 CFR Part 55 Content: | 55.41 | |
| | 55.43 | 5 |

Comments:
Same basic question but applied to McGuire, so distractors and procedures are different

KA is matched because the item evaluates use of an AOP with the EOPs. SRO level because the applicant must determine procedure usage requirements for the given plant conditions.

RFA approve 5/1/2008