

18 November 2005

**From:** Harry Balian

**To:** File

**Subj:** Record Retention of Rejected Questions

These documents are the questions rejected during development of the Susquehanna Steam Electric Station December 2005 Operator Licensing Examination.

These documents are retained because some entries in the “**Comments and Question Modification History**” were not always carried over to the replacement questions.

Question Number: 21

# 2

RO

SRO

Question ID: 29662 Origin: Mod

Memory Level

Given the following conditions:

- SSES Unit 1 recently entered Mode 4 to start a refueling outage following a 500 day run.
- SSES Unit 2 is in mode 1 at full power and flow.
- The station experiences a loss of Startup Transformer T-20.
- the Shift Manager has just declared an UNUSUAL EVENT.

Why has Shift Manager declared an UNUSUAL EVENT?

- A** CU1: Loss of All Offsite Power to Essential Busses for Greater than 15 Minutes.
- B** CU2: UNPLANNED Loss of Required DC Power for Greater than 15 Minutes.
- C** CU3: UNPLANNED Loss of Decay Heat Removal Capability with Irradiated Fuel in the RPV.
- D** MU1: Loss of all Offsite Power to Essential Busses for Greater than 15 Minutes.

# Question Number: 21

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - NO

WRONG: requires loss of both T-10 AND T-20.

VALID DISTRACTOR: Loss of power c/b reasonable cause for entering the EAL.

CHOICE (B) - NO

WRONG: requires loss of ALL vital DC power for >15 minutes.

VALID DISTRACTOR: Applicant may believe loss of T-20 causes loss of DC power.

CHOICE (C) - YES

Applicant must recognize that loss of T-20 causes RPS Bus "B" to deenergize on SSES Unit 1. This causes PCIS initiation which, subsequently, isolates the RHR SDC drop line. Finally, Applicant should recognize that decay heat load is high and an uncontrolled heat up could cause RCS temperature to rise above 200 degrees Fahrenheit. This is the entry condition for EAL CU3 per EP-TP-001

CHOICE (D) - NO

WRONG: requires loss of both T-10 AND T-20.

VALID DISTRACTOR: Loss of power c/b reasonable cause for entering the EAL.

## References

EAL Tables.

EP-TP-001.

## Comments and Question Modification History

EXJ  THF  RJC  SSES

1. (HB 09/08/05) Modified from SSES Bank.

24 month 700 days or 18 month 500 days for SQ to answer

2. THF 09/08/05 - clarified stem.

3. Gil 09/09/05 - concerned about K/A match.

4. Gil 09/26/05 - K/A mismatch. Relationship between containment isolation and EAL?

R: on a loss of T-20, RPS buss "B" is deenergized. This causes Primary CTMT isolation including isolation of RHR in SDC mode. The successful Applicant must recognize the reason PCIS isolated is the loss of RPS buss "B" and that the isolation interrupted SDC which must be restored to prevent entry into an EAL. If SDC not restored, the threshold for an EAL will be crossed.

5. Todd 09/30/05 - OK.

6. Rich 10/03/05 - odd way to ask response question?

R: change to "why did the SM declare the event". Saved original question as number 21.

7. SQ 10/14/05 - TOSS

a - Not RO level

b - K/A miss (reason for isolation under loss of AC)

c - Technically not correct.

## NRC K/A System/E/A

System 29500 Partial or Complete Loss of A.C. Power  
3

Number AK3.06 RO 3.7 SRO CFR Link

AK3. Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER :

AK3.06 Containment isolation

## NRC K/A Generic

System

Number RO SRO CFR Link

# 5

RO

SRO

Question ID: 29658 Origin: New

Memory Level

Given the following Control Room indications,

- AR-106-001 (A08) GEN LOCKOUT RELAYS TRIP
- AR-106-001 (C04) STATOR COOLING WATER PUMP 1A-1B TRIP
- Generator Stator Cooling Water Pumps 1A and 1B are NOT running (both AMBER lights energized)
- Generator Stator Cooling Water control switch is selected to "1A-START 1B-RESERVE"

What AUTOMATIC action will occur and why?

- A** Main TURBINE trip due to Generator negative phase sequence.
- B** Main TURBINE trip due to Generator Stator Cooling Water high conductivity.
- C** Main GENERATOR trip due to Generator Stator Cooling Water low pressure.
- D** Main GENERATOR trip due to Generator Neutral Overvoltage (59GN) fault.

Answers: A  B  C  D

References Provided to Applicant:

**Justification**

CHOICE (A) - NO

WRONG: This will cause Generator trip but not the Stator Cooling water pump trips.

VALID DISTRACTOR: Plausible because a Negative Phase Sequence will cause GENERATOR trip.

CHOICE (B) - NO

WRONG: No automatic turbine trip on high conductivity.

VALID DISTRACTOR: Plausible because Operators are expected to perform reactor scram / turbine trip if conductivity can not be maintained below 9.9. However, there is no automatic stator cooling or turbine trip on stator water conductivity. Moreover, the question calls for what would cause a GENERATOR trip v. TURBINE trip.

CHOICE (C) - NO

WRONG: This is a TURBINE, not GENERATOR trip.

VALID DISTRACTOR: Plausible because low stator cooling water pressure (< 44 psig) will cause a TURBINE trip after a 70 second time delay (normal pressure is 50 to 65 psig). However, a simple pump trip is not expected to cause this condition because the reserve pump should start if low discharge pressure (first signal at < 102 psig, second signal at < 92 psig) is sensed at the discharge of the running pump. The stem indicates that the reserve pump would have started. Moreover, the question calls for what would cause a GENERATOR trip v. TURBINE trip.

CHOICE (D) - YES

**References**

AR-106-A04  
AR-106-C04  
ON-193-002  
TM-OP-098

**Comments and Question Modification History**

EXJ       THF       RJC       SSES

1. (HB 09/08/05) Question for SSES: how to describe Pp 1B status?
2. Gil 09/09/05 - no comments
3. Gil 09/26/05 - OK
4. Todd 09/30/05 - OK.
5. Rich 10/03/05 - Backward logic at memory level. Can we increase cognitive level?  
R: revised question and answer choice to be forward looking. Saved original question as number 51. Still considered on the high side of memory level.
6. SQ 10/14/05 - MAJOR  
a - recommend giving condition that a Gen Neut OV occurred and asking for sequence of events.

**NRC K/A System/E/A**

**System** 29500 Main Turbine Generator Trip  
5

**Number** AK2.04      **RO** 3.3      **SRO** 3.3      **CFR Link** (CFR: 41.7 / 45.8)

Knowledge of the interrelations between MAIN TURBINE GENERATOR TRIP and the following: Main generator protection

**NRC K/A Generic**

**System**  
**Number**      **RO**      **SRO**      **CFR Link**

**Question Number: 101**

**# 10**

RO

SRO

**Question ID: 29649 Origin: New**

**Memory Level**

Reactor Vessel Water Level must be above a MINIMUM water level before starting Residual Heat Removal (RHR) in Shutdown Cooling (SDC) mode.

The minimum water level is \_\_\_(1)\_\_\_ and the reason(s) for this minimum level are \_\_\_(2)\_\_\_.

- A** (1) 45 inches.  
(2) to ensure natural circulation flow for core cooling and to prevent thermal stratification if Shutdown Cooling is lost.
- B** (1) 90 inches.  
(2) to ensure natural circulation flow for core cooling and to provide adequate NPSH to the Fuel Pool Cooling (FPC) pumps.
- C** (1) 45 inches  
(2) to prevent thermal stratification and to provide adequate NPSH to the Fuel Pool Cooling (FPC) pumps.
- D** (1) 90 inches.  
(2) to provide adequate NPSH to the Fuel Pool Cooling (FPC) pumps and to the RHR pumps.

# Question Number: 101

Answers:  A  B  C  D

References Provided to Applicant: 

## Justification

CHOICE (A) - YES

CHOICE (B) - NO

WRONG: NPSH to FPC pumps is NOT the reason.

VALID DISTRACTOR: Plausible because 90 inches is the administrative limit per OP-149-002 and because NC flow is partially correct. Static head is a common issue wrt NPSH.

CHOICE (C) - NO

WRONG: NPSH to FPC pumps is NOT the reason.

VALID DISTRACTOR: Plausible because 45 inches is correct and thermal stratification is part of the reason. Static head is a common issue wrt NPSH.

CHOICE (D) - NO

WRONG: NPSH to pumps is NOT the reason.

VALID DISTRACTOR: Plausible because 90 inches is the administrative limit per OP-149-002. Static head is a common issue wrt NPSH.

## References

## Comments and Question Modification History

GXJ  THF  RJC  SSES

1. (HB 09/08/05) New.
2. Gil 09/09/05 - no changes.
3. PAP 9/9/05 comment - Applicant could argue that "C" is a second correct answer. Changed RFR to Fuel Pool Cleanup pumps.

!!! ASK SSES IF "C" IS POTENTIALLY CORRECT !!!!

4. Gil 09/26/05 - K/A mismatch.

R: possibly but on a loss of SDC, unlikely to see any recirc flow changes.

Todd - unable to agree. SSES input seems to support my view but I asked for further clarification.

09/28/05 Phone Conversation with SSES - they agree that the original question as written did not appear to match the K/A. However, they recommended changes to the entire question to better align it to the K/A. These changes were incorporated into the question.

Todd 09/30/05 - OK.

## NRC K/A System/E/A

System 29502 Loss of Shutdown Cooling  
1

Number AA2.07 RO 2.9 SRO 3.1 CFR Link (CFR: 41.10 / 43.5 / 45.13)

Ability to determine and/or interpret the following as they apply to LOSS OF SHUTDOWN COOLING : Reactor recirculation flow

## NRC K/A Generic

System

Number RO SRO CFR Link

Question Number: 141

# 14

RO

SRO

Question ID: 29584 Origin: New

Memory Level

Residual Heat Removal (RHR) loop "B" is running in the Suppression Pool Cooling mode of operation per EO-100-103, PC CONTROL. The Reactor Operator notices significant fluctuations in flow rate and motor amps on both RHR Pumps "B" and "D".

Which ONE of the following caused this?

- A** Minimum flow valve HV-151F0007B failed open.
- B** Safety Relief Valve (SRV) "S" stuck open.
- C** RHR Pump "B" discharge flow orifice FO-15100B is blocked.
- D** Clogged RHR Loop "B" suction strainer..

# Question Number: 141

Answers:

A

B

C

D

References Provided to Applicant:

## Justification

Surveillance Requirement SR 3.5.1.7  
Need to verify the procedure - done 09/07/05 by email

### DISTRACTOR (A):

Plausible because a failed open min flow valve will affect the pump by increasing flow rate and NPSH requirements. The pumps are rated at 3175 gpm @ 290 psig. The min flow line is designed to pass the full rated flow of two pumps (6350 gpm). Therefore, opening the min flow line during a test could cause pump RUNOUT. However, the stem conditions describe CAVITATION.

### DISTRACTOR (C):

Plausible because blocking the discharge path will affect the pump by increasing discharge pressure and reducing flow rate. However, this effect is inconsistent with indications of cavitation.

### DISTRACTOR (D):

Plausible because this was a recent industry event. However, each pump has its own suction strainer. Therefore, two clogged strainers are required to make this true.

## References

## Comments and Question Modification History

EXJ

THF

RJC

SSES

Gil 09/09/05 - need to amend distracters and determine best SRV to finish revision.

09/09/05: amended distracters.

09/12/05: amended distracter D

09/15/05: amended answer to "S" SRV because OP-183-001, Attachment A, shows this to be the closest to the RHR Pp suction.

Gil 09/26/05 - Revise last sentence of stem "Which one of the following is the most likely cause of this?"

R: Per Chief Examiner's direction, avoiding use of phrases like "most likely", "most probable", "could have". Revised stem to read "Which ONE of the following caused this?"

Todd 09/30/05 - added "significant" to stem and amended grammar accordingly.

## NRC K/A System/E/A

**System** 29502 Suppression Pool High Water Temperature  
6

**Number** EK1.01 **RO** 3.0 **SRO** 3.4 **CFR Link** (CFR 41.8 to 41.10)

Knowledge of the operational implications of the Pump NPSH as it applies to SUPPRESSION POOL HIGH WATER TEMPERATURE

## NRC K/A Generic

**System**

**Number** **RO** **SRO** **CFR Link**

**Question Number: 141**

**# 14**

RO

SRO

**Question ID: 29575 Origin: New**

**Memory Level**

A surveillance test of the "B" Core Spray (CS) loop is in progress per SO-151-B02, Quarterly Core Spray Flow Verification Division II. The Reactor Operator notices fluctuating CS pump flowrate and motor amps. Which of the following could have caused this?

- A** Minimum flow valve HV-152-F031B failed open.
- B** One Safety Relief Valve (SRV) inadvertently opened.
- C** CS Loop Test Return Header Flow Orifice FO-15206B is blocked.
- D** One Suppression Chamber to Drywell vacuum breaker stuck open.

# Question Number: 141

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

Surveillance Requirement SR 3.5.1.7  
Need to verify the procedure - done 09/07/05 by email.

Plausible because a failed open min flow valve will affect the pump by increasing flowrate and NPSH requirements. The pumps are rated at 3175 gpm @ 290 psig. The min flow line is designed to pass the full rated flow of two pumps (6350 gpm). Therefore, opening the min flow line during a test could cause pump RUNOUT. However, the stem conditions describe CAVITATION.

Plausible because blocking the discharge path will affect the pump by increasing discharge pressure and reducing flowrate. However, this effect is inconsistent with indications of cavitation.

Plausible if the Applicant believes that the stuck open vacuum breaker could affect CS pump suction pressure.

## References

## Comments and Question Modification History

GXJ  TMF  RJC  SSES

Gil 09/09/05 - rejected for poor K/A match.

## NRC K/A System/E/A

**System** 29502 Suppression Pool High Water Temperature  
6

**Number** EK1.01 **RO** 3.0 **SRO** 3.4 **CFR Link** (CFR 41.8 to 41.10)

Knowledge of the operational implications of the Pump NPSH as it applies to SUPPRESSION POOL HIGH WATER TEMPERATURE

## NRC K/A Generic

**System**

**Number** **RO** **SRO** **CFR Link**

Question Number: 181

# 18

RO

SRO

Question ID: 29579 Origin: New

Memory Level

SSES Unit 1 has an Anticipated Transient Without Scram (ATWS). The control room operating crew initiate Standby Liquid Control (SBLC) per LQ/Q-3. You observe the following:

- 1P208A SBLC Pump RED indicating light ILLUMINATES,
- 1P208B SBLC Pump RED indicating light does NOT illuminate,
- ONE SBLC SQUIB READY A-B White indicating light extinguishes,
- ONE SBLC SQUIB READY A-B White indicating light remains energized,
- SBLC SQUIB VALVES LOSS OF CKT CONTINUITY (A03) Energizes.

If initial SBLC Tank Level was 4742 gallons, what is the SHORTEST time until STANDBY LIQUID TANK HI/LO LEVEL (C03) energizes at its setpoint of 4587 gallons?

- A** 2 minutes
- B** 4 minutes
- C** 8 minutes
- D** 16 minutes

# Question Number: 181

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

New - inspired by Browns Ferry 2 exam of September 2001 (Question ID 21039)

SSES requires both SBLC pumps to start to ensure reactor safety following an ATWS. The expected flowrate is approximately 86 gpm. In this case, the flowrate is one-half of expected (43 gpm) because one SBLC pump failed to start. The alarm will energize when 4742 less 4587 (155) gallons have been injected. This will occur in 155 divided by 43 or 3.6 minutes.

The failure of one SQUIB Valve to fire has no effect on the solution because the pumps discharge to a common header. The common header then flows through two parallel SQUIB valves.

A - Plausible because this is the expected answer if both pumps inject through both SQUIB valves at 86 gpm

- Plausible if the Applicant believes that the failed SQUIB valve blocks SBLC flow to the RPV

C - Plausible if the Applicant somehow concludes that the failed pump halves flowrate and that the failed SQUIB valve halves flowrate again.

D - Plausible if Applicant misapplies Pump laws to this problem.

## References

## Comments and Question Modification History

EXJ  THF  RJC  SSES

Gil 09/09/05 - editorial change to stem

Gil 09/26/05 - Distractor "A" not plausible with one pump running and one squibb fired; should have some flow.

R: revised "Never" to "16 minutes". Applicant may misapply pump laws.

Todd 09/30/05 - why give setpoint?

R: w/o setpoint, it may become LOD=5 because not expected to know this.

## NRC K/A System/E/A

System 29503  
7

Number RO SRO CFR Link

## NRC K/A Generic

System 2.2 Equipment Control

Number 2.2.2 RO 4.0 SRO 3.5 CFR Link (CFR: 45.2)

Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.

**Question Number: 200**

**# 20**

RO  SRO

**Question ID: 29581 Origin: New**

**Memory Level**

The BACKUP DIESEL FIRE PUMP starts in response to a fire in the ACCESS PROCESSING FACILITY. Which one of the following locations will receive an alarm indicating actuation of the BACKUP FIRE SUPPRESSION system?

- A** PP&L Energy Dispatch
- B** SSES Central Alarm Station
- C** PP&L Corporate Security
- D** SSES Control Room



Question Number: 210

# 21

RO

SRO

Question ID: 29589 Origin: New

Memory Level

SSES Unit 1 is at full power when a Feedwater Level Control System malfunction causes RPV Water Level to stabilize at approximately 47.5 inches. Per ON-145-001, RPV LEVEL CONTROL SYSTEM MALFUNCTION, the Operating Crew is able to restore Feedwater Level Control to Automatic, 3-element control on LEVEL A. The Operating Crew then completes ON-145-004, RPV WATER LEVEL ANOMALY and has NOT determined the cause of the malfunction.

- (1) What malfunction caused RPV Water Level to stabilize at approximately 47.5 inches?  
(2) What procedure must the Operating Crew enter next?

- A** (1) A single feed flow instrument failed downscale while in THREE ELEMENT  
(2) GO-000-001, REACTOR VESSEL LEVEL CONTROL DURING MAINTENANCE
- B** (1) A single feed flow instrument failed upscale while in THREE ELEMENT  
(2) OI-AD-509, TROUBLESHOOTING
- C** (1) A single level instrument input failed upscale while in AVERAGE.  
(2) GO-000-001, REACTOR VESSEL LEVEL CONTROL DURING MAINTENANCE
- D** (1) A single level instrument input failed downscale while in AVERAGE.  
(2) OI-AD-509, TROUBLESHOOTING

# Question Number: 210

Answers: A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - NO

WRONG: This procedure only applies when the mode switch is in SHUTDOWN or REFUEL.

VALID DISTRACTOR: The failure causes stable level at ~48 inches.

CHOICE (B) - NO

WRONG: Need to determine what this causes.

VALID DISTRACTOR: This is the correct procedure.

CHOICE (C) - NO

WRONG: This procedure only applies when the mode switch is in SHUTDOWN or REFUEL.

VALID DISTRACTOR: This is the correct mode but the failure will give stable level of ~22.5 inches.

CHOICE (D) - YES

Stable level of ~47.5 inches

Correct Procedure.

## References

ON-145-001

OI-AD-509

## Comments and Question Modification History

EXJ     THF     RJC     SSES

Ask SSES what Distractor B will cause.

Tough one - 6 hours to develop.

1. PAP 9/9/05 comments to balance choices.

2. Gil 09/26/05 - does not see connection of OI-AD-509 in references.

R: added OI-AD-509 to list of references. Applicants expected to answer this question without use of references.

Suggestion if Question rejected: put Applicant in T/S activity and ask how is problem prevented.

3. SQ 10/14/05 - during phone conversation with SSES, recognized that this K/A was incorrectly selected. The correct K/A is 2.1.20 rather than 2.2.20.

## NRC K/A System/E/A

System 29500  
8

Number RO SRO CFR Link

## NRC K/A Generic

System

Number 2.2.20

RO SRO CFR Link

**Question Number: 251**

**# 25**

RO

SRO

**Question ID: 29595 Origin: Mod**

**Memory Level**

SSES Unit 1 is in MODE 4 for a planned refueling outage and fuel movement is in progress. SSES Unit 2 is in MODE 4 to support emergent maintenance. The Control Room receives the following alarms and indications:

- REFUEL FLOOR WALL EXH MON HI RADIATION (AR-212-001, D01)
- RR-D12-2R605 reads 19.2 millirem per hour (mr/hr)
- REFUEL FLOOR HI EXH HI RADIATION (AR-212-001, F02)
- REFUEL FLOOR HI EXHAUST HI - HI RADIATION (AR-206-001, E03)
- RR-D12-2R607 reads 19.8 millirem per hour (mr/hr)

Which ONE of the following correctly states the required action?

- A** Evacuate both Refuel Floor areas.
- B** Evacuate Unit 1 Refuel Floor areas, only.
- C** Evacuate Unit 2 Refuel Floor areas, only.
- D** Evacuation NOT required until Health Physics validates a High Radiation condition.

# Question Number: 251

Answers: A  B  C  D

References Provided to Applicant:

## Justification

### CHOICE (A) - YES

Radiation levels are high enough to cause a Secondary CTMT isolation. Zone III at SSES is common to both units. Therefore, evacuation of both areas is required.

### CHOICE (B) - NO

WRONG: Zone III is common to both areas. Therefore, evacuation of both areas is required.

VALID DISTRACTOR: SSES is the unit undergoing refueling with fuel moves in progress.

### CHOICE (C) - NO

WRONG: Zone III is common to both SSES units. Therefore, evacuation of both areas is required.

VALID DISTRACTOR: The alarms given are Unit 2 alarms.

### CHOICE (D) - NO

WRONG: SSES procedures support immediate evacuation.

VALID DISTRACTOR: Training Material discusses allowance for planned or expected alarms. The discussion indicates that alarms can be expected when handling irradiated materials in the vicinity of the radiation monitors.

## References

TM-OP-079E

AR-101-A04, AR-112-D01, AR-112-F02, AR-106-E03

ON-070-001

ON-081-001

## Comments and Question Modification History

GXJ     THF     RJC     SSES

Modified from Grand Gulf 1, April 2000 (Question ID 16458)

Gil 09/26/05 - OK

Todd 09/30/05 - added ", only" after distractors "B" and "C" for grammatical correctness.

## NRC K/A System/E/A

**System** 29503 Secondary Containment Ventilation High Radiation

4

**Number** EK3.03                      **RO** 4.0    **SRO** 4.4    **CFR Link** (CFR 41.5, 45.6)

Knowledge of the reasons for the Personnel evacuation as it applies to SECONDARY CONTAINMENT VENTILATION HIGH RADIATION

## NRC K/A Generic

**System**

**Number**                                      **RO**        **SRO**        **CFR Link**

Question Number: 261

# 26

RO

SRO

Question ID: 29596 Origin: Mod

Memory Level

Both units are at full power. SSES Unit 1 has isolated and is draining Residual Heat Removal (RHR) loop "B" for planned maintenance. SSES Unit 1 RHR loop "B" is draining to the floor drain to the Reactor Building Sump via 161121 (RHR Pump B & D Room Drain Iso Vlv.).

SSES Unit 1 Receives the following alarms and indications:

- RHR LOOP B PUMP ROOM FLOODED (AR-113-001, H08).
- SUPPRESSION POOL DIV 1 LO LEVEL (AR-111-001, E02).
- SUPP POOL LEVEL LI-25755A indicates 22.4 feet and slowly lowering.
- SUPPRESSION POOL DIV 2 LO LEVEL (AR-112-001, E02).
- SUPP POOL LEVEL LI-15755B indicates 22.3 feet and slowly lowering.
- REACTOR BLDG SUMP LEVEL HI-HI (AR-125-001, B01)

(1) How will Suppression Pool level respond?

(2) What Emergency Operating Procedure (EOP) entry conditions are CURRENTLY met?

- A** (1) The Suppression Pool will continue to drain until 161121 (RHR Pump B & D Room Drain Iso Vlv.) is closed.  
(2) EO-100-104, SECONDARY CONTAINMENT CONTROL.
- B** (1) The Suppression Pool will continue to drain until 161121 (RHR Pump B & D Room Drain Iso Vlv.) is closed.  
(2) EO-100-103, PC CONTROL.
- C** (1) Suppression Pool will continue to drain until draining of RHR loop "B" is stopped by closing the open vents & drains.  
(2) EO-100-104, SECONDARY CONTAINMENT CONTROL.
- D** (1) Suppression Pool will continue to drain until draining of RHR loop "B" is stopped by closing the open vents & drains.  
(2) EO-100-103, PC CONTROL.

# Question Number: 261

Answers:

A

B

C

D

References Provided to Applicant:

## Justification

CHOICE (A) - NO

WRONG: SP will not continue to drain because the Unit 1 and 2 floor drains are not cross-connected.

VALID DISTRACTOR: Correct EOP and each unit's ECCS room floor drains are cross-connected to other ECCS room of the same unit.

CHOICE (B) - NO

WRONG: PC CONTROL requires SP level below 22 feet. However, the SP will not continue to drain because the Unit 1 and 2 floor drains are not cross-connected.

VALID DISTRACTOR: The stem conditions give sufficient information to correctly conclude that the Suppression Pool will stabilize at 17 feet (Table 18 of EO-100-103). Therefore, Applicant may reasonably select this.

CHOICE (C) - YES

Table 18 of EO-100-103 tells us that SP will stabilize at 17 feet.

EO-100-104 requires entry on RB Water Level above high alarm.

CHOICE (D) - NO

WRONG: PC CONTROL requires SP level below 22 feet.

VALID DISTRACTOR: Correct SP level. The stem conditions give sufficient information to correctly conclude that the Suppression Pool will stabilize at 17 feet (Table 18 of EO-100-103). Therefore, Applicant may reasonably select this.

## References

EO-100-103, 104

AR-111, 112, 113, 125

ON-169-002

## Comments and Question Modification History

EXJ

THF

RJC

SSES

NM2 August 2002 (Question ID 22279)

1. Gil 09/26/05 - could not validate the 17 feet because EO-100-103 not included in work papers  
R: it is 17 feet. Ask Chief Examiner to independently validate.

2. Todd 09/30/05 - changed "(1) What level will SSES Unit 2 Suppression Pool stabilize at?" to "(1) How will Suppression Pool level respond?".  
changed part (1) of distracters "C" and "D" from "(1) 17 feet" to "(1) Suppression Pool level will lower to 17 feet and stabilize."

3. SQ 10/17/05 - system will continue draining until isolated. Stick to only one unit for plausibility.  
R - only unit 1 and changed "C" and "D" to correct technical error.

## NRC K/A System/E/A

System 29503 Secondary Containment High Sump/Area Water Level  
6

Number EA1.01 RO 3.2 SRO 3.3 CFR Link (CFR 41.7, 45.6)

Ability to operate and/or monitor the Secondary containment equipment and floor drain systems as it applies to  
SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL

## NRC K/A Generic

System

Number

RO

SRO

CFR Link

**Question Number: 331**

**# 33**

**RO**

**SRO**

**Question ID: 29603 Origin: New**

**Memory Level**

Both SSES units are at full power. During shift turnover, you notice that the:

- white indicating light for Standby Liquid Control (SBLC) squib valve 148F004A is EXTINGUISHED
- white indicating light for Standby Liquid Control (SBLC) squib valve 148F004B is ILLUMINATED

Before accepting the shift, you go to the Relay Room and determine that the Unit 1 SBLC squib valve CONTINUITY METERS read 5 milliamps (ma) for BOTH squib valves.

Which ONE of the following correctly describes the status of the SBLC squib valves?

- A** 148F004A is Operable  
148F004B is Operable
- B** 148F004A is NOT Operable  
148F004B is Operable
- C** 148F004A is Operable  
148F004B is NOT Operable
- D** 148F004A is NOT Operable  
148F004B is NOT Operable

**Question Number: 331**

Answers: **A**  **B**  **C**  **D**

References Provided to Applicant:

**Justification**

CHOICE (A) - YES

The stem establishes conditions indicative of a burned out light bulb.

CHOICE (B) - No

WRONG: Neither valve is inoperable.

VALID DISTRACTOR: White light out is the first indication of an inoperable squib valve.

CHOICE (C) - No

WRONG: Neither valve is inoperable

VALID DISTRACTOR: Tests Applicants' understanding of the normal/expected condition.

CHOICE (D) - No

WRONG: Neither valve is inoperable

VALID DISTRACTOR: Mirror imaging and tests Applicants' understanding of normal/expected condition.

**References**

AR-107-A03

TM-OP-053

**Comments and Question Modification History**

**EXJ**       **TIF**       **RJC**       **SSES**

Gil 09/26/05 - suggest using 5 milliamps in stem if this is technically correct, albeit a little higher than normal. 4 milliamps is too easily recognizable.

R: accepted. Changed from 4 to 5 and deleted sentence saying "These are the NORMAL values". Recategorized to Higher Cognitive Level.

Todd 09/30/05 - added "Unit 1" before SBLC in the stem.

**NRC K/A System/E/A**

**System** 21100 Standby Liquid Control System  
0

**Number** K4.04      **RO** 3.8      **SRO** 3.9      **CFR Link** (CFR 41.7)

Knowledge of STANDBY LIQUID CONTROL SYSTEM design feature(s) and/or interlocks which provide for Indication of fault in explosive valve firing circuits

**NRC K/A Generic**

**System**

**Number**      **RO**      **SRO**      **CFR Link**

**Question Number: 341**

**# 34**

RO

SRO

**Question ID: 29655 Origin: Bank**

**Memory Level**

SSES Unit 1 is operating at full power. The following Standby Liquid Control System (SBLC) conditions exist following SBLC tank filling:

- SLC tank temperature is 70 F
- AR 107 B03, STANDBY LIQUID TANK HI/LO TEMP is in alarm
- SLC tank level is 5100 gallons
- AR 107 C03, STANDBY LIQUID TANK HI/LO LEVEL is in alarm
- Chemistry sample results after filling indicate that the concentration of the sodium pentaborate solution in the SLC tank is 15.4% by weight

Which ONE of the following identifies the status of the SLC system according to Technical Specifications?

- A** The LCO is satisfied.
- B** Tank temperature does not meet the LCO conditions.
- C** Tank available volume does not meet the LCO conditions.
- D** Sodium pentaborate concentration does not meet the LCO conditions.

Question Number: 341

Answers: A  B  C  D

References Provided to Applicant:

Justification

!! THIS QUESTION APPEARED ON THE AUGUST 2002 SUSQUEHANNA EXAM !!

CHOICE (A) - No

WRONG: The temperature-concentration combination is in the UNACCEPTABLE range.

VALID DISTRACTOR: Applicant must determine this from Figure 3.1.7-2

CHOICE (B) - YES

CHOICE (C) - No

WRONG: Volume falls in the acceptable region of Figure 3.1.7-2

VALID DISTRACTOR: Applicant determine this from Figure 3.1.7-2

CHOICE (D) -

WRONG: Concentration falls in the acceptable region of Figure 3.1.7-2

VALID DISTRACTOR: Applicant determine this from Figure 3.1.7-2

References

!! THIS QUESTION APPEARED ON THE AUGUST 2002 SUSQUEHANNA EXAM !!

INPO Bank Question ID 23895

Provide TS figures 3.1.7-1, 2 without words indicating acceptable or unacceptable regions if possible.

Comments and Question Modification History

EXJ     THF     RJC     SSES

!! THIS QUESTION APPEARED ON THE AUGUST 2002 SUSQUEHANNA EXAM !!

Gil 09/26/05 - Not sure it is plausible for an operator to NOT acknowledge any annunciator. How about "acknowledge but do not reset" for "A".

R: accepted. Changed distracters "A" and "B"

?? Does SSES have the RESET function ??

\*\*\* REJECTED K/A CAUSE LOD UNREACHABLE \*\*\*

Reselected 2.1.33 and found this in an SSES old exam.

**NRC K/A System/E/A**

System 21100  
0

Number RO SRO CFR Link

**NRC K/A Generic**

System 2.1 Conduct of Operations

Number 2.1.2 RO 3.0 SRO 4.0 CFR Link (CFR: 41.10 / 45.13)

Knowledge of operator responsibilities during all modes of plant operation.

**Question Number: 341**

**# 34**

RO

SRO

**Question ID: 29604 Origin: Mod**

**Memory Level**

The Unit Supervisor (US), Plant Control Operator (PCO), Reactor Building Field Operator, Chemistry Technician and Mechanical Maintenance Technicians have completed a pre-job brief for SO-153-004, QUARTERLY SBLC FLOW VERIFICATION. During the pre-job brief, EXPECTED ALARMS were identified and discussed. The participants determined that NO alarms are expected while performing this surveillance.

During the surveillance, the following alarm ANNUNCIATES:

- AR-107-001 (D03), SBLC INJECTION HV-148-F006 NOT FULLY OPEN

Which ONE of the following correctly describes the PCO's response?

- A** Acknowledge but do NOT reset the alarm.  
Refer to the associated Alarm Response procedure.  
Await further direction from the US.
- B** Acknowledge but do NOT reset the alarm.  
Report the alarm to the US.  
Await further direction from the US.
- C** Acknowledge the alarm.  
Refer to the associated Alarm Response procedure.  
Await further direction from the US.
- D** Acknowledge the alarm.  
Report the alarm to the Unit Supervisor.  
Refer to the associated Alarm Response procedure.

# Question Number: 341

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

!! THIS QUESTION APPEARED ON THE AUGUST 2003 SUSQUEHANNA EXAM !!

Under the current procedural requirements at OP-AD-004, Section 11.0, the August 2003 exam answer is no longer the correct answer. Therefore, this question was modified to involve the SBLC system and an UNEXPECTED alarm.

CHOICE (A) - No

WRONG: Must report to the US

VALID DISTRACTOR: NOT acknowledging may indicate that the US is expected to respond.

CHOICE (B) - No

WRONG: fails to refer to the AR.

VALID DISTRACTOR: entire distractor points to reporting the alarm to the US.

CHOICE (C) - No

WRONG: fails to report to the US.

VALID DISTRACTOR: Acknowledging & AR referral are correct.

CHOICE (D) - YES

OP-AD-104, Section 11.2.2. requires US report and AR referral. Acknowledging the alarm is skill-of-the-craft.

## References

!! THIS QUESTION APPEARED ON THE AUGUST 2003 SUSQUEHANNA EXAM !!

INPO Bank Question ID 25884

OP-AD-004

SO-153-004

AR-107-001, D03

## Comments and Question Modification History

GKJ  TME  RJC  SSES

!! THIS QUESTION APPEARED ON THE AUGUST 2003 SUSQUEHANNA EXAM !!

Gil 09/26/05 - Not sure it is plausible for an operator to NOT acknowledge any annunciator. How about "acknowledge but do not reset" for "A".

R: accepted. Changed distractors "A" and "B"

?? Does SSES have the RESET function ??

## NRC K/A System/E/A

System 21100  
0

Number RO SRO CFR Link

## NRC K/A Generic

System 2.1 Conduct of Operations

Number 2.1.2 RO 3.0 SRO 4.0 CFR Link (CFR: 41.10 / 45.13)

Knowledge of operator responsibilities during all modes of plant operation.

Question Number: 390

# 39

RO

SRO

Question ID: 29661 Origin: New

Memory Level

SSES Unit 1 is at full power. You observe the following neutron monitoring system status:

- APRM "E" is BYPASSED
- APRM "F" is BYPASSED
  
- IRM "A" is BYPASSED
- IRM "H" is BYPASSED

Which ONE of the following correctly describes the status of the APRM INOPERABLE scram function for each Division?

- A** RPS "A" (Division I) - AVAILABLE  
RPS "B" (Division II) - AVAILABLE
- B** RPS "A" (Division I) - NOT Available  
RPS "B" (Division II) - AVAILABLE
- C** RPS "A" (Division I) - AVAILABLE  
RPS "B" (Division II) - NOT Available
- D** RPS "A" (Division I) - NOT Available  
RPS "B" (Division II) - NOT Available

# Question Number: 390

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - No

WRONG: Div I is not operable.

VALID DISTRACTOR: Div II is operable.

CHOICE (B) - YES

- T.S. 3.3.1.1 requires the RPS instrumentation for each Function in Table 3.3.1.1-1 to be OPERABLE.

- Table 3.3.1.1-1, Line 2.d, requires that the APRM INOP function be operable in Modes 1 & 2 with a minimum of 2 channels per trip system.

- The INOP function requires a RPS deenergization if the APRM is DNSCL while the IRM is UPSCL.

- According to SSES Training Materials and Plant Dwgs M1-C72-22 (Sheets 6, 7, 8, 9), the APRM-to-IRM association is:

- Division I: A-A, C-C, E-E, E-G and this Div is INOPERABLE because only one APRM INOP function is functional (A-A, E-E, E-G are bypassed)

- Division II: B-B, D-D, F-F, F-H and this Div is OPERABLE because two APRM INOP functions are functional (F-F, F-H are bypassed)

CHOICE (C) - No

WRONG: Div I and Div II are reversed.

VALID DISTRACTOR: Applicant may mistake two bypassed channels for taking two out of three functions away.

CHOICE (D) - No

WRONG: Div II is OPERABLE.

VALID DISTRACTOR: Mirror Image

## References

M1-C72-22

TM-OP-078D

## Comments and Question Modification History

GXJ  THF  RJC  SSES

Gil 09/26/05 - OK but we should revalidate this one.

Todd 09/30/05 - designated a unit in the stem and deleted window dressing concerning shift turnover.

Rich 10/03/05 - replaced OPERABLE with AVAILABLE to get away from SRO level.

SQ 10/14/05 - SRO only level, possible misunderstanding of "function" v. "channel". We need more time to consider this one.

- changed "All scram functions of RPS" to directly ask status of APRM INOP function.

SQ 10/17/05 - during phone conversation on 10/16/05, SSES indicated that this is not a license requirement and is a feature of having the IRM UPSCL trip. During review with Chief Examiner and Branch Chief, we determined that the K/A match is not suitable because it does not address LPRM-APRM relationship. Therefore, rejected question entirely.

## NRC K/A System/E/A

System 21500 Average Power Range Monitor/Local Power Range Moni  
5

Number A1.02 RO 3.9 SRO 4.0 CFR Link (CFR 41.5 / 45.5)

Ability to predict and/or monitor changes in parameters associated with operating the AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM controls including RPS status

## NRC K/A Generic

System

Number RO SRO CFR Link

**Question Number: 391**

**# 39**

RO

SRO

**Question ID: 29609 Origin: New**

**Memory Level**

SSES Unit 1 is at full power. You observe the following neutron monitoring system status:

- APRM "E" is BYPASSED
- APRM "F" is BYPASSED
  
- IRM "A" is BYPASSED
- IRM "H" is BYPASSED

Which ONE of the following correctly describes the Reactor Protection System (RPS) status?

- A** RPS "A" (Division I) is OPERABLE  
RPS "B" (Division II) is OPERABLE
- B** RPS "A" (Division I) is INOPERABLE  
RPS "B" (Division II) is OPERABLE
- C** RPS "A" (Division I) is OPERABLE  
RPS "B" (Division II) is INOPERABLE
- D** RPS "A" (Division I) is INOPERABLE  
RPS "B" (Division II) is INOPERABLE

**Question Number: 391**

Answers:  A  B  C  D

References Provided to Applicant:

**Justification**

CHOICE (A) - No

WRONG: Div I is not operable.

VALID DISTRACTOR: Div II is operable.

CHOICE (B) - YES

- T.S. 3.3.1.1 requires the RPS instrumentation for each Function in Table 3.3.1.1-1 to be OPERABLE.

- Table 3.3.1.1-1, Line 2.d, requires that the APRM INOP function be operable in Modes 1 & 2 with a minimum of 2 channels per trip system.

- The INOP function requires a RPS deenergization if the APRM is DNSCL while the IRM is UPSCL.

- According to SSES Training Materials and Plant Dwgs M1-C72-22 (Sheets 6, 7, 8, 9), the APRM-to-IRM association is:

- Division I: A-A, C-C, E-E, E-G and this Div is INOPERABLE because only one APRM INOP function is functional (A-A, E-E, E-G are bypassed)

- Division II: B-B, D-D, F-F, F-H and this Div is OPERABLE because two APRM INOP functions are functional (F-F, F-H are bypassed)

CHOICE (C) - No

WRONG: Div I and Div II are reversed.

VALID DISTRACTOR: Applicant may mistake two bypassed channels for taking two out of three functions away.

CHOICE (D) - No

WRONG: Div II is OPERABLE.

VALID DISTRACTOR: Mirror Image

**References**

M1-C72-22

TM-OP-078D

**Comments and Question Modification History**

GXJ  THF  RJC  SSES

Gil 09/26/05 - OK but we should revalidate this one.

Todd 09/30/05 - designated a unit in the stem and deleted window dressing concerning shift turnover.

**NRC K/A System/E/A**

System 21500 Average Power Range Monitor/Local Power Range Moni  
5

Number A1.02 RO 3.9 SRO 4.0 CFR Link (CFR 41.5 / 45.5)

Ability to predict and/or monitor changes in parameters associated with operating the AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM controls including RPS status

**NRC K/A Generic**

System

Number RO SRO CFR Link

**Question Number: 431**

**# 43**

RO

SRO

**Question ID: 29613 Origin: New**

**Memory Level**

SSES lost all offsite power (LOOP). During the transient, a Main Steam (MS) line on SSES Unit 2 broke and caused Main Steam Isolation Valves (MSIV) to CLOSE. Subsequently, the control room is EVACUATED and you go to the SSES Unit 2 Remote Shutdown Panel (1C201). The following conditions now exist:

- BOTH the Upper and Lower Relay rooms are inaccessible.
- Drywell Pressure is 1.9 psig.
- Reactor Pressure Vessel (RPV) Pressure is cycling between 1,180 psig and 1,150 psig.

(1) What functional mode are the Safety Relief Valves (SRV) operating in?

(2) Which SRVs can be operated from the Remote Shutdown Panel given these conditions?

**A** (1) Overpressure SAFETY operation  
(2) PSV-241-F013A, B and C

**B** (1) Overpressure RELIEF operation  
(2) None

**C** (1) Overpressure RELIEF operation  
(2) PSV-241-F013A, B and C

**D** (1) Overpressure SAFETY operation  
(2) None

# Question Number: 431

Answers:

A

B

C

D

References Provided to Applicant:

## Justification

CHOICE (A) - No

WRONG: PSV-241-F013A, B and C not available because no CIG.

VALID DISTRACTOR: PSV-241-F013A, B and C are the three SRVs that can be operated at the RSD.

CHOICE (B) - No

WRONG: RELIEF mode is incorrect - pressures too high

VALID DISTRACTOR: mirror imaging

CHOICE (C) - No

WRONG: RELIEF mode is incorrect - pressures too high

VALID DISTRACTOR: PSV-241-F013A, B and C are the three SRVs that can be operated at the RSD.

CHOICE (D) - YES

There are 16 SRVs. In the SAFETY mode, two SRVs open at 1175, six SRVs open at 1195 and eight SRVs open at 1205 psig. In the SAFETY mode, the SRVs close at 97% of set pressure. 97% of 1175 is 1140. 97% of 1195 is 1160. Therefore, 1180 to 1150 is a reasonable expectation for RPV pressure in this condition.

That the SRVs are operating in the SAFETY mode is the first clue that the RELIEF mode of operation is not available. The RELIEF mode requires 90# CIG and an electrical signal. For whatever reason, the RELIEF mode is not working because pressure is cycling well above the Relief Setpoints (2-1106, 4-1116, 4-1126, 3-1136, 3-1146). DW pressure is above the 1.72 psig CTMT isolation setpoint. Therefore, the 90# CIG header is isolated and CIG is not available to operate the SRVs in the Relief mode. This fact gives the Applicant a conclusive explanation as to why the Relief mode is not working.

## References

TM-OP-083

TM-OP-050

TM-OP-083E

TM-OP-025

## Comments and Question Modification History

GXJ

THF

RJC

SSES

NOTE: per ON-100-009, ADS valves can be operated from the Relay Rooms.

Revised correct answer to "A" after telephone discussion with SSES. Accumulators will provide some operation of SRVs A, B, C from the RSD in this condition. Operation in SAFETY mode will not deplete the accumulator.

????? QUESTION: would the accumulators have depeleted in RELIEF mode by now? ????????

1. Gil 09/26/05 - believes SRVs always operate in Overpresssure Relief mode before safety relief mode. This will deplete the air supply. Question may have NO correct answer if this is true.

R: The stem conditions state that pressure is cycling between 1180 and 1150. At these higher values, the SRVs have to be in the Safety mode because

RPV pressures would be lower in the Relief mode. Applicant should be sufficiently familiar with the setpoints to recognize this.

May need to delete second half of question regarding which SRVs have controls at the RSD to make the entire question plausible. Distractors c/b RELIEF, ADS, RCIC/HPCI.

Agree to toss second half out and make corrections to remaining distractors.

## NRC K/A System/E/A

System 23900 Relief/Safety Valves  
2

Number K5.02 RO 3.7 SRO 3.8 CFR Link (CFR 41.5 / 45.3)

Knowledge of the operational implications of the Safety function of SRV operation as it applies to RELIEF/SAFETY VALVES

## NRC K/A Generic

System

Number RO SRO CFR Link

Question Number: 431

Question Number: 431

# 43

RO

SRO

Question ID: 29646 Origin: New

Memory Level

SSES lost all offsite power (LOOP). During the transient, a Main Steam (MS) line on SSES Unit 2 broke and caused Main Steam Isolation Valves (MSIV) to CLOSE. Subsequently, the control room is EVACUATED and you go to the SSES Unit 2 Remote Shutdown Panel (1C201). The following conditions now exist:

- BOTH the Upper and Lower Relay rooms are inaccessible.
- Drywell Pressure is 1.9 psig.
- Reactor Pressure Vessel (RPV) Pressure is cycling between 1,180 psig and 1,150 psig.
- Safety Relief Valve (SRV) control has been transferred to the Remote Shutdown Panel.

What functional mode, if any, are the Safety Relief Valves (SRV) operating in?

- A** Overpressure SAFETY operation
- B** Overpressure RELIEF operation
- C** Low pressure ECCS (ADS)
- D** None, RCIC is controlling RPV Pressure.

# Question Number: 431

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

Complete rewrite of original question. Old question saved as Order 431.

### CHOICE (A) - YES

There are 16 SRVs. In the SAFETY mode, two SRVs open at 1175, six SRVs open at 1195 and eight SRVs open at 1205 psig. In the SAFETY mode, the SRVs close at 97% of set pressure. 97% of 1175 is 1140. 97% of 1195 is 1160. Therefore, 1180 to 1150 is a reasonable expectation for RPV pressure in this condition.

### CHOICE (B) - No

WRONG: RELIEF mode is incorrect - pressures too high  
VALID DISTRACTOR: This is one mode of SRV operation

### CHOICE (C) - No

WRONG: Pressure is not steadily lowering.  
VALID DISTRACTOR: This is one mode of SRV operation.

### CHOICE (D) - No

WRONG: RCIC would not cause pressure to cycle.  
VALID DISTRACTOR: RCIC is one method of controlling RPV pressure if MSIVs close.

## References

TM-OP-083  
TM-OP-050  
TM-OP-083E  
TM-OP-025

## Comments and Question Modification History

EXJ       THF       RJC       SSES

NOTE: per ON-100-009, ADS valves can be operated from the Relay Rooms.

Revised correct answer to "A" after telephone discussion with SSES. Accumulators will provide some operation of SRVs A, B, C from the RSD in this condition. Operation in SAFETY mode will not deplete the accumulator.

????? QUESTION: would the accumulators have depleted in RELIEF mode by now? ????????

1. Gil 09/26/05 - believes SRVs always operate in Overpressure Relief mode before safety relief mode. This will deplete the air supply. Question may have NO correct answer if this is true.

R: The stem conditions state that pressure is cycling between 1180 and 1150. At these higher values, the SRVs have to be in the Safety mode because RPV pressures would be lower in the Relief mode. Applicant should be sufficiently familiar with the set points to recognize this.

May need to delete second half of question regarding which SRVs have controls at the RSD to make the entire question plausible. Distracters c/b RELIEF, ADS, RCIC/HPCI.

Agree to toss second half out and make corrections to remaining distracters. Essentially rewrote the question. Saved old one as 431.

NOTE: from ON-100-009, learned that Automatic RELIEF mode operation is NOT possible when control transferred to RSD panel. May be able to use this if further revision required.

Todd 09/30/05 - grammatical correction to accommodate distracter "D".

## NRC K/A System/E/A

System 23900 Relief/Safety Valves  
2

Number K5.02      RO 3.7      SRO 3.8      CFR Link (CFR 41.5 / 45.3)

Knowledge of the operational implications of the Safety function of SRV operation as it applies to RELIEF/SAFETY VALVES

## NRC K/A Generic

System

Number      RO      SRO      CFR Link

Question Number: 451

# 45

RO

SRO

Question ID: 29656 Origin: Mod

Memory Level

Following a Reactor Feed Pump Turbine (RFPT) trip, what conditions MUST be satisfied to reset the trip?

Automatic Interlocks

Operator Actions

- |   |   |
|---|---|
| <p><b>A</b> RFP Suction (HV-10616) NOT Full Closed<br/>RFPT Exhaust (HV-12731) NOT Full Closed<br/>RFPT Control Valves NOT Full Open<br/>RFPT LP Isol (HV-12709) 100% CLOSED<br/>RFPT HP Isol (HV12710) 100% CLOSED<br/>RFPT Stop Valves (SV) are NOT Reset.<br/>MSC on the Low Speed Stop (LSS)<br/>Trip Condition CLEARED or BYPASSED.</p> <p><b>B</b> RFP Suction (HV-10616) 100% OPEN<br/>RFPT Exhaust (HV-12731) 100% OPEN<br/>RFPT Control Valves 100% CLOSED<br/>RFPT LP Isol (HV-12709) NOT Full Open<br/>RFPT HP Isol (HV12710) NOT Full Open<br/>RFPT Stop Valves (SV) are RESET.<br/>Trip Condition CLEARED or BYPASSED.</p> <p><b>C</b> RFP Suction (HV-10616) 100% OPEN<br/>RFP Discharge (HV-10603) 100% CLOSED<br/>RFPT Exhaust (HV-12731) 100% OPEN<br/>RFPT Control Valves 100% CLOSED<br/>RFPT LP Isol (HV-12709) 100% OPEN<br/>RFPT HP Isol (HV12710) 100% OPEN<br/>RFPT Stop Valves (SV) are RESET<br/>Trip Condition CLEARED or BYPASSED.</p> <p><b>D</b> RFP Suction (HV-10616) 100% OPEN<br/>RFPT Exhaust (HV-12731) 100% OPEN<br/>RFPT Control Valves 100% CLOSED<br/>RFPT LP Isol (HV-12709) 100% CLOSED<br/>RFPT HP Isol (HV12710) 100% CLOSED<br/>RFPT Stop Valves (SV) are NOT Reset.<br/>Trip Condition CLEARED or BYPASSED.<br/>MSC on Low Speed Stop (LSS)</p> | <p>RFP Min Flow (FV-10604) in AUTO<br/>Min Flow (FIC-10604) set for 2,000 gpm<br/>RFP Disch (HV-10603) CLOSED<br/>EAP Control (SIC-C32-1R601) at 0</p> <p>RFP Min Flow (FV-10604) in AUTO<br/>Min Flow (FIC-10604) set for 2,000 gpm<br/>MSC on Low Speed Stop (LSS)<br/>RFP Disch (HV-10603) CLOSED<br/>EAP Control (SIC-C32-1R601) at 0</p> <p>RFP Min Flow (FV-10604) in MAN<br/>Min Flow (FIC-10604) set for 2,000 gpm<br/>MSC on Low Speed Stop (LSS)<br/>EAP Control (SIC-C32-1R601) at 0</p> <p>RFP Min Flow (FV-10604) in MAN<br/>Min Flow (FIC-10604) set for 2,000 gpm<br/>RFP Disch (HV-10603) CLOSED<br/>EAP Control (SIC-C32-1R601) at 0</p> |
|---|---|

**Question Number: 451**

Answers: A  B  C  D

References Provided to Applicant:

**Justification**

CHOICE (A) - No  
WRONG: Suction, Exhaust CVs changed. FV-10604 put in AUTO  
VALID DISTRACTOR:

CHOICE (B) - No  
WRONG: LP & HP Isolation and SV Reset condition changed. FIC10604 put in AUTO. MSC on LSS  
VALID DISTRACTOR:

CHOICE (C) - No  
WRONG: RFP Disch moved to auto interlock, LP & HP Isolations 100% open. MSC on LSS.  
VALID DISTRACTOR:

CHOICE (D) - YES

**References**

TM-OP-045  
OP-124-001, Section 2.18

**Comments and Question Modification History**

**GXJ**       **THF**       **RJC**       **SSES**

Modified from SSES Exam Bank essay question.  
09/19/2005: Per SSES staff, MSC must be on LSS per simulator attempt to reset RFPT Trip during previous weekend.  
Changed answer "D" to reflect MSC on LSS as an Automatic Interlock.

Gil 09/26/05 - Change justification for "D" (correct answer).  
R: corrected justification.

**NRC K/A System/E/A**

**System** 25900 Reactor Water Level Control System  
2

**Number** A4.09      **RO** 3.4      **SRO** 3.1      **CFR Link** (CFR 41.7 / 45.5 to 45.8)

Ability to manually operate and/or monitor TDRFP lockout reset: TDRFP in the control room

**NRC K/A Generic**

**System**

**Number**      **RO**      **SRO**      **CFR Link**

**Question Number: 452**

# 45

RO  SRO

Question ID: 29615 Origin: Mod

Memory Level

Following a Reactor Feed Pump Turbine (RFPT) trip, in addition to the automatic interlocks, what Operator actions must be MANUALLY satisfied before resetting the RFPT trip?

- A** RFP Suction (HV-10616) NOT Full Closed  
RFP Disch (HV-10603) CLOSED  
RFP Min Flow (FV-10604) in AUTO  
Min Flow (FIC-10604) set for 2,000 gpm
- B** RFPT Stop Valves (SV) are RESET  
Trip Conditions CLEARED or BYPASSED  
RFPT Exhaust (HV-12731) 100% OPEN  
RFP Disch (HV-10603) NOT 100% CLOSED
- C** RFPT Exhaust (HV-12731) 100% OPEN  
RFPT Control Valves 100% CLOSED  
RFPT LP Isol (HV-12709) 100% CLOSED  
RFPT HP Isol (HV12710) 100% CLOSED
- D** RFP Min Flow (FV-10604) in MAN  
Min Flow (FIC-10604) set for 2,000 gpm  
RFP Disch (HV-10603) CLOSED  
EAP Control (SIC-C32-1R601) at 0

# Question Number: 452

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - No

WRONG: Mix of Automatic and Manual requirements on the pump side. AUTO is incorrect.

VALID DISTRACTOR: Mix of AUTO and MAN requirements.

CHOICE (B) - No

WRONG: SVs s/b NOT RESET. Trip conditions is AUTO. Disch Vv s/b full closed

VALID DISTRACTOR: Mix of AUTO and Manua.

CHOICE (C) - No

WRONG: These are all automatic interlocks in their correct state - turbine side.

VALID DISTRACTOR: they are interlocks that would prevent RFPT Reset.

CHOICE (D) - YES

## References

TM-OP-045

OP-124-001, Section 2.18

## Comments and Question Modification History

GXJ  THF  RJC  SSES

Modified from SSES Exam Bank essay question.

09/19/2005: Per SSES staff, MSC must be on LSS per simulator attempt to reset RFPT Trip during previous weekend.

Changed answer "D" to reflect MSC on LSS as an Automatic Interlock.

Gil 09/26/05 - Change justification for "D" (correct answer).

R: corrected justification.

Todd 09/30/05 - too busy. reduced to four Manual actions. original saved as 451.

## NRC K/A System/E/A

System 25900 Reactor Water Level Control System  
2

Number A4.09 RO 3.4 SRO 3.1 CFR Link (CFR 41.7 / 45.5 to 45.8)

Ability to manually operate and/or monitor TDRFP lockout reset: TDRFP in the control room

## NRC K/A Generic

System

Number RO SRO CFR Link

**Question Number: 481**

**# 48**

RO

SRO

**Question ID: 29617 Origin: New**

**Memory Level**

Which ONE of the following correctly describes the status of UNINTERRUPTIBLE POWER SUPPLIES (UPS) one minute after a Loss of Offsite Power (LOOP) if all station Systems, Structures or Components operate as designed?

- A** CLASS 1E INSTRUMENT AC buses are DEENERGIZED.  
Both NON-CLASS 1E VITAL AC UPS are powered from their dedicated 250-VDC BATTERY for up to four hours.
- B** CLASS 1E INSTRUMENT AC buses are ENERGIZED.  
Both NON-CLASS 1E VITAL AC UPS are ENERGIZED from their PREFERRED 480-VAC ES MCC.
- C** CLASS 1E INSTRUMENT AC buses are DEENERGIZED.  
Both NON-CLASS 1E VITAL AC UPS are powered from their dedicated 250-VDC BATTERY for about 20-minutes. Then, both NON-CLASS 1E VITAL AC UPS are powered from their ALTERNATE 480-VAC ES MCC.
- D** CLASS 1E INSTRUMENT AC buses are ENERGIZED.  
Both NON-CLASS 1E VITAL AC UPS are powered from their associated station 250-VDC BATTERY for up to 4-hours.

# Question Number: 481

Answers:

A

B

C

D

References Provided to Applicant:

## Justification

CHOICE (A) - No

WRONG: CLASS 1E buses are energized because EDGs are powering the ES buses.

VALID DISTRACTOR: Both NON-CLASS 1E have dedicated batteries but they are only good for 20 minutes.

CHOICE (B) - YES

The 1E buses are energized from the EDGs via 4kV and 480VAC

CHOICE (C) - No

WRONG: Class 1E buses are energized

VALID DISTRACTOR: This is how the NON-CLASS 1E buses respond to a loss of the preferred 480-VAC MCC.

CHOICE (D) - No

WRONG: NON-CLASS 1E are NOT powered from station batteries (they have dedicated batteries)

VALID DISTRACTOR: Both 1E buses are energized and station batteries do have 4 hours of power.

HOD because Applicant must distinguish LOOP from Blackout. Here, following a LOOP, the EDGs respond to power the ES busses.

## References

TM-OP-017

See also, 480 VAC, 250 VDC.

## Comments and Question Modification History

EXJ

THF

RJC

SSES

Gil 09/26/05 - "A" and "C" not plausible with "all ...components operate as designed". That is, everyone should know 1E equipment will be energized.

Use a different term (RPS MG Set or Instrument AC Distribution Panel 1Y216, etc) rather than "CLASS 1E".

Answer B does not appear correct. The way I read the references the preferred will be lost for about 10 seconds and the UPS will run on DC. Then when the EDG energizes the bus the UPS will automatically shift back to preferred.

R: will revisit this question.

Added "one minute after" to expressly show question is asking for conditions after the transient.

Suggestion: don't say "Class 1E" and just identify the buss itself.

## NRC K/A System/E/A

System 26200 Uninterruptable Power Supply (A.C./D.C.)

2

Number K6.01

RO 2.7

SRO 2.9

CFR Link (CFR 41.7 / 45.7)

Knowledge of the effect that a loss or malfunction of A.C. electrical power will have on the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.)

## NRC K/A Generic

System

Number

RO

SRO

CFR Link

**Question Number: 481**

# 48

RO

SRO

Question ID: 29647 Origin: New

Memory Level

SSES has a Loss of Offsite Power (LOOP). Emergency Diesel Generator (EDG) "A" fails to start. Within 10 minutes, Operators start EDG "E" and energize 1A201 and 2A201.

Which ONE of the following correctly describes the status of the 208/120-VAC distribution system if all other all station Systems, Structures or Components (SSC) operate as designed?

Note: UPS = UNINTERRUPTIBLE POWER SUPPLIES

- A** Both VITAL AC UPS (1D666 & 2D666) are energized from their 250-VDC ALTERNATE source (1D662, 2D142).  
SSES unit 1 NON-CLASS 1E INSTRUMENT AC UPS (1D240, 1D130) are energized from their 250-VDC ALTERNATE source (1D652, 1D662)  
SSES unit 2 NON-CLASS 1E INSTRUMENT AC UPS (2D240, 2D130) are energized from their 250-VDC ALTERNATE source (2D652, 2D662)
- B** Both VITAL AC UPS (1D666 & 2D666) are energized from their 250-VDC PREFERRED source (1D662, 2D142).  
SSES unit 1 NON-CLASS 1E INSTRUMENT AC UPS (1D240, 1D130) are energized from their 480-VAC PREFERRED source (1B236, 1B246)  
SSES unit 2 NON-CLASS 1E INSTRUMENT AC UPS (2D240, 2D130) are energized from their 480-VAC PREFERRED source (2B236, 2B246)
- C** Both VITAL AC UPS (1D666 & 2D666) are energized from their 480-VAC PREFERRED source (1B246, 2B246).  
SSES unit 1 NON-CLASS 1E INSTRUMENT AC UPS (1D240, 1D130) are energized from their 480-VAC BACKUP source (1B216, 1B226)  
SSES unit 2 NON-CLASS 1E INSTRUMENT AC UPS (2D240, 2D130) are energized from their 480-VAC BACKUP source (2B216, 2B226)
- D** Both VITAL AC UPS (1D666 & 2D666) are energized from their 480-VAC ALTERNATE source (1B246, 2B246).  
SSES unit 1 NON-CLASS 1E INSTRUMENT AC UPS (1D240, 1D130) are energized from their 250-VDC ALTERNATE source (1D243, 1D133).  
SSES unit 2 NON-CLASS 1E INSTRUMENT AC UPS (2D240, 2D130) are energized from their 250-VDC ALTERNATE source (2D243, 2D133).

**Question Number: 481**

**Answers:**  A  B  C  D **References Provided to Applicant:**

**Justification**

CHOICE (A) - No  
WRONG: Vital: Pfd v. Alt. Inst: wrong source of 250-VDC & would not be on 250-VDC

CHOICE (B) - YES

CHOICE (C) - No  
WRONG: Vital: 480-VAC is not Pfd. Inst: would not swing to B/U cause EDG "E" brought on in under 20 minutes.

CHOICE (D) - No  
WRONG: Vital: no reason to shift to 480-VAC alt Inst: would have shifted back to Pfd 480-VAC source

HOD because Applicant must distinguish LOOP from Blackout. Here, following a LOOP, the EDGs respond to power the ES busses.

**References**

TM-OP-017  
See also, 480 VAC, 250 VDC.

**Comments and Question Modification History**

- GXJ**  **THF**  **RJC**  **SSES**

Gil 09/26/05 - "A" and "C" not plausible with "all ...components operate as designed". That is, everyone should know 1E equipment will be energized. Use a different term (RPS MG Set or Instrument AC Distribution Panel 1Y216, etc) rather than "CLASS 1E".

Answer B does not appear correct. The way I read the references the preferred will be lost for about 10 seconds and the UPS will run on DC. Then when the EDG energizes the bus the UPS will automatically shift back to preferred.

R: will revisit this question.

Added "one minute after" to expressly show question is asking for conditions after the transient.

Suggestion: don't say "Class 1E" and just identify the buss itself.

.....  
\* COMPLETE REWRITE 27 SEPTEMBER 2005 \*  
.....

**NRC K/A System/E/A**

**System** 26200 Uninterruptable Power Supply (A.C./D.C.)  
2  
**Number** K6.01 **RO** 2.7 **SRO** 2.9 **CFR Link** (CFR 41.7 / 45.7)  
Knowledge of the effect that a loss or malfunction of A.C. electrical power will have on the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.)

**NRC K/A Generic**

**System**  
**Number** **RO** **SRO** **CFR Link**

**Question Number: 561**

**# 56**

RO  SRO

**Question ID: 29626 Origin: Mod**

**Memory Level**

The Rod Sequence Control System (RSCS) PREVENTS continuous Control Rod WITHDRAWAL between notches 00 and 12 in which of the following categories:

- I. 100% rod density to 75% rod density
- II. 75% rod density to 50% rod density
- III. 50% rod density to Low Power Set point (LPSP)
- IV. LPSP to 100% rated Core Thermal Power (CTP)

**A** I and II

**B** II and III

**C** III and IV

**D** I and IV

Question Number: 561

Answers: A  B  C  D  References Provided to Applicant:

Justification

CHOICE (A) - No

WRONG: No rod motion blocks imposed in Category I (100% to 75% rod density)

VALID DISTRACTOR: Rod motion blocks are imposed at N1, N2, N3, N4 in Category II (75% to 50% rod density)

CHOICE (B) - YES

Rod motion blocks are imposed at N1, N2, N3, N4 in Category II (75% to 50% rod density)

Rod motion blocks are imposed at N1 in Category III (50% rod density to LPSP)

CHOICE (C) - No

WRONG: No rod motion blocks imposed in Category IV (LPSP to 100% CTP)

VALID DISTRACTOR: Rod motion blocks are imposed at N1 in Category III (50% rod density to LPSP)

CHOICE (D) - No

WRONG: No rod motion blocks imposed in Category IV (LPSP to 100% CTP)

WRONG: No rod motion blocks imposed in Category I (100% to 75% rod density)

VALID DISTRACTOR: mirror image. Also the correct answer on the BANK question from which this was drawn.

References

Bank question  
TM-OP-056Z

Comments and Question Modification History

GXJ     THF     RJC     SSES

Gil 09/26/05 - Add to stem: "...WITHDRAWAL between notches 00 and 12..."  
R: done.

SQ 11/14/05 - changed from I, II, III, IV format to answers in the choices. Saved original as 561

**NRC K/A System/E/A**

**System** 20100 Rod Sequence Control System (Plant Specific)  
4

**Number** A3.05                      **RO** 3.5    **SRO** 3.7    **CFR Link** (CFR 41.7 / 45.7)

Ability to monitor automatic operations of the ROD SEQUENCE CONTROL SYSTEM (PLANT SPECIFIC) including:  
†Verification of proper function/ operability: BWR-4,5

**NRC K/A Generic**

**System**

**Number**                                      **RO**              **SRO**              **CFR Link**

**Question Number: 581**

**# 58**

RO

SRO

**Question ID: 29628 Origin: New**

**Memory Level**

Which ONE of the following correctly describes the operation of Reactor Recirculation System (RRS) valves when starting a Reactor Recirculation Pump (RRP)?

- A** The RRS Recirculation Pump Trip (RPT) breakers will close if:
- BOTH RRP Suction Valves HV-F023A and B are 100% OPEN and
  - BOTH RRP Discharge Valves HV-F031A and B are 100% CLOSED and
  - BOTH RRP Discharge Bypass Valves HVF-32A and B are 100% OPEN.
- B** The RRS Motor-Generator Drive Motor breaker will close if:
- BOTH RRP Suction Valves HV-F023A and B are 100% OPEN and
  - BOTH RRP Discharge Valves HV-F031A and B are 100% CLOSED and
  - BOTH RRP Discharge Bypass Valves HVF-32A and B are 100% OPEN.
- C** The RRS Recirculation Pump Trip (RPT) breakers will close if:
- the ASSOCIATED RRP Suction Valve HV-F023A or B is 100% OPEN and
  - the ASSOCIATED RRP Discharge Valve HV-F031A or B is 100% CLOSED and
  - the ASSOCIATED RRP Discharge Bypass Valve HVF-32A or B is 100% OPEN.
- D** The RRS Motor-Generator Drive Motor breaker will close if:
- the ASSOCIATED RRP Suction Valve HV-F023A or B is 100% OPEN and
  - the ASSOCIATED RRP Discharge Valve HV-F031A or B is 100% CLOSED and
  - the ASSOCIATED RRP Discharge Bypass Valve HVF-32A or B is 100% OPEN.

# Question Number: 581

---

Answers: **A**  **B**  **C**  **D**  References Provided to Applicant:

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**Justification**

CHOICE (A) - No  
WRONG: The RPT breakers are not affected.  
VALID DISTRACTOR: mirror image

CHOICE (B) - No  
WRONG: do NOT need both sets of valves to start the pump - just the associated valves.  
VALID DISTRACTOR: Applicant may misunderstand the start circuit or system configuration.

CHOICE (C) - No  
WRONG: The RPT breakers are not affected.  
VALID DISTRACTOR: Applicant may misunderstand purpose of the RPT breakers.

CHOICE (D) - YES

**References**

TM-OP-064C

**Comments and Question Modification History**

**GXJ**     **THF**     **RJC**     **SSES**

Gil 09/26/05 - OK.

---

**NRC K/A System/E/A**

**System** 20200 Recirculation System  
1

**Number** A4.02                      **RO** 3.5    **SRO** 3.4    **CFR Link** (CFR 41.7 / 45.5 to 45.8)

Ability to manually operate and/or monitor System valves in the control room

**NRC K/A Generic**

**System**  
**Number**                                      **RO**            **SRO**            **CFR Link**

Question Number: 591

# 59

RO

SRO

Question ID: 29629 Origin: Mod

Memory Level

While SSES Unit 2 was at 98% power, one Circulating Water pump tripped for unknown reasons.. During the ensuing transient, Reactor Recirculation Pump "B" trips. After the plant stabilizes, the following conditions exist:

- Reactor Power is 51%.
- Loop "A" total Jet Pump flow is 55E6 lbm/hr (55,000,000 lbm/hr).
- Loop "B" total Jet Pump flow is 20E6 lbm/hr (20,000,000 lbm/hr).
- Core Plate differential pressure (d/p) on NJP51 is 2.0 psid.
- Total indicated Core flow is 35E6 lbm/hr (35,000,000 lbm/hr).

- (1) What is the actual core flow mass flow rate?  
(2) What actions **MUST** the Operating Crew take?

- A** (1) 35E6 lbm/hr (35,000,000 lbm/hr)  
(2) Raise Core Flow to 44E6 lbm/hr (44,000,000 lbm/hr) to keep idle loop "B" warm.
- B** (1) 45E6 lbm/hr (45,000,000 lbm/hr)  
(2) Raise Core Flow to 44E6 lbm/hr (44,000,000 lbm/hr) to keep idle loop "B" warm.
- C** (1) 35E6 lbm/hr (35,000,000 lbm/hr)  
(2) Lower Reactor Power to 44% to exit Stability Region II
- D** (1) 45E6 lbm/hr (45,000,000 lbm/hr)  
(2) Lower Reactor Power to 44% to exit Stability Region II

# Question Number: 591

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - No

WRONG: Correct flow is 45E6 per GO-200-009

VALID DISTRACTOR: Applicant may subtract 20 from 55. Raising flow above 40E6 is an objective of GO-200-009.

CHOICE (B) - No

WRONG: Unable to raise core flow because the tripped Circ Water pump puts in the 48% RRP speed limiter.

VALID DISTRACTOR:

CHOICE (C) - No

WRONG: Correct core flow is 45E6 per GO-200-009

VALID DISTRACTOR: Correct action

CHOICE (A) - YES

## References

Bank question

GO-200-009

NDAP-QA-0338

## Comments and Question Modification History

**GXJ**       **THF**       **RJC**       **SSCS**

1. Gil 09/26/05 - OK presuming applicant has excerpts from GO-200-009?

R: Generally, I tried to avoid anything that would require the use of references. This question is an exception and I expect that the Applicants will require GO-200-009 and NDAP-QA-0338 (or the Power-to-Flow curve attachment).

Review GO-200-009 for potential answers to other questions. Consider just giving them the two Graphs.

AGREED - just give the two graphs.

2. Todd 10/17/05 - question rejected for K/A mismatch.

## NRC K/A System/E/A

**System** 20200 Recirculation Flow Control System  
2

**Number** K3.01      **RO** 3.5      **SRO** 3.5      **CFR Link** (CFR 41.7 / 45.4)

Knowledge of the effect that a loss or malfunction of the RECIRCULATION FLOW CONTROL SYSTEM will have on Core flow

## NRC K/A Generic

**System**

**Number**      **RO**      **SRO**      **CFR Link**

**Question Number: 621**

**# 62**

**RO**

**SRO**

**Question ID: 29632 Origin: Bank**

**Memory Level**

The 1A203 4.16KVAC switchgear outage is in progress. Due to a weeping SRV, Suppression Pool temperature is slowly rising.

Which ONE of the following describes the availability of the "A" loop of RHR suppression pool cooling?

- A** NOT Available because the "A" Containment Spray Valve (HV-1F027A) and Full Flow Valve (HV-1F024A) have lost power.
- B** AVAILABLE because 1A203 provides power to the "B" RHR Pump and "B" RHR Loop Valves.
- C** NOT Available because two RHR pumps are required to place the associated loop in Suppression Pool Cooling.
- D** AVAILABLE because RHR Pump "A" is operable and all RHR Loop "A" components are available.

# Question Number: 621

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

B - 1A203 powers "C" RHR and "A" Loop valves

C - only 1 pump is required.

D - 1A203 powers 1B236 and 1B237. 1B236 and 1B237 power Loop "A" valves.

Bank question with minor modification to answer because original question was erroneous. Specifically, the bank question incorrectly stated that power was lost to F003A.

## References

Bank question.  
ON-104-203

## Comments and Question Modification History

GXJ  TMF  RJC  SSES

Compare to question 29 - power supplies to RHR valves. May be redundant. However, kept both K/As because they were randomly selected and the pumps and valves are unique components.

Gil 09/26/05 - "A" does not appear correct per references. HV-1F024A is not on list in Attach C

If all "A" designated Class 1E buses ONLY supply "A" components (which is expected), then "B" and "D" are implausible.

R: will re-verify. Concerning plausibility, observe that the Loop A valves are powered from 1B237.

HV-E11-1F024A does appear in ON-104-203, Attachment E, Page 2 of 7 (page 19 of the procedure) as a load on MCC 1B237.

HV-E11-1F027A does appear in ON-104-203, Attachment E, Page 2 of 7 (page 19 of the procedure) as a load on MCC 1B236.

The concern over "A" designated class 1E busses is incorrectly applied to this question. The SSES designation scheme is:

First digit: 1 or 2 --> Unit  
Second digit: A ----> 4.16-kVAC or B ----> 480-VAC  
Third digit: Code for physical location.

Original question is valid. Must also note that B pump and B loop are different concepts.

Rejected as too similar to earlier question on power supplies to RHR MOVs and poor K/A match.

## NRC K/A System/E/A

System 21900 RHR/LPCI: Torus/Suppression Pool Cooling Mode  
0

Number K2.02 RO 3.1 SRO 3.3 CFR Link (CFR 41.7)

Knowledge of electrical power supplies to the following: Pumps

## NRC K/A Generic

System

Number RO SRO CFR Link

**Question Number: 651**

**# 65**

RO  SRO

**Question ID: 29635 Origin: Mod**

**Memory Level**

Concerning the Control Structure Heating, Ventilation and Air Conditioning (HVAC) system, which ONE of the following actions is NOT AUTOMATICALLY initiated on a HIGH RADIATION signal at the outside air intake?

- A** Access control & lab area supply fan STARTS.
- B** CREOASS Fan starts (fan in AUTO).
- C** Outside air inlet dampers 02A and B CLOSE.
- D** Control Room kitchen exhaust fan TRIPS.



**Question Number: 680**

**# 68**

RO  SRO

**Question ID: 29637 Origin: New**

**Memory Level**

The Diesel Engine Driven Fire Pump (0P511) is starting intermittently when no automatic start is required. The malfunction has been identified. However, parts needed to complete the repair will NOT be available for several weeks. Maintenance has recommended placing 0P511 in Manual until the repair is complete. To support this recommendation, Operations is requested to issue a Temporary Procedure Change that directs Control Room Operators to MANUALLY start 0P511 if Fire Service header pressure drops to the AUTOMATIC starting set point of 85 psig.

How MUST this configuration be implemented?

- A** Per NDAP-QA-1901, SSES Station Work Management Process.
- B** Per NDAP-QA-0323, Standard Blocking Practices.
- C** Per NDAP-QA-1218, Temporary Modifications.
- D** Per NDAP-QA-0002, Nuclear Department Procedure Program.

# Question Number: 680

Answers:

A

B

C

D

References Provided to Applicant:

## Justification

CHOICE (A) - No

WRONG: Work Management is not the issue

VALID DISTRACTOR: Applicant may believe work management requires a Mod Eval

CHOICE (B) - No

WRONG: Not a blocking issue

VALID DISTRACTOR: Applicant may want to attach info tag

CHOICE (C) - YES

NDAP-QA-1218, Attachment B, page 7 of 10 specifically identifies substitution of MANUAL actions for AUTOMATIC actions as requiring a Mod Eval.

CHOICE (D) - No

WRONG: NDAP-QA-1218, Attachment B, page 7 of 10 specifically precludes use of a Procedure Change.

VALID DISTRACTOR: Applicant may believe it is acceptable based on stem conditions.

## References

NDAP-QA-1218

TM-OP-013

## Comments and Question Modification History

EXJ

THF

RJC

SSES

Need SSES to closely study distracters to ensure they are NOT potentially correct.

Need input on whether to provide copies of each of these NDAP procedures as references.

Gil 09/28/05: Confirm "Standard Blocking Practices" includes the use of yellow tags, otherwise pick a procedure that is closer to using temporary changes/modifications. Also consider that the use of yellow tags may be required for this situation and makes "B" another correct answer.

Availability of these procedures should NOT be necessary. It should be fair game that the applicant's know which procedure to go to. On second thought this may make the question SRO only.

R: will query SSES on this

Todd 10/05/05 - agree that this may be SRO level question. Check with SSES to determine if it is fair for an RO.

SQ 11/04/05 - SSES agrees that this is SRO level only and, more importantly, considers all four answers correct to some degree. Suggests revising to "Which of the following would require implementation of the Temporary Modification process?".

R - Saved original question as 681.

## NRC K/A System/E/A

### System

Number

RO

SRO

CFR Link

## NRC K/A Generic

### System

2.2 Equipment Control

Number 2.2.11

RO 2.5

SRO 3.4\*

CFR Link (CFR: 41.10 / 43.3 / 45.13)

Knowledge of the process for controlling temporary changes.

Question Number: 701

# 70

RO  SRO

Question ID: 29639 Origin: Mod

Memory Level

SSES Unit 2 is in Mode 5 for a refueling outage. As part of a planned maintenance activity, the Control Room is notified that an Operation with Potential to Drain the Reactor Vessel/Cavity (OPDRV/OPDRC) is about to commence. Before allowing the activity to proceed, you are required to complete Attachment B of NDAP-QA-0326 (OPERATIONS WITH POTENTIAL FOR DRAINING REACTOR VESSEL/CAVITY).

What is the purpose of NDAP-QA-0326, Attachment B, CHANGE TO CONFIGURATION ALLOWING OPERATIONS WITH POTENTIAL OF DRAINING REACTOR VESSEL/CAVITY?

- A** To minimize overall plant risk by tracking the progress of the activity constituting an OPDRV/OPDRC from start to finish.
- B** To ensure that all applicable Technical Specifications and Technical Requirements are satisfied before commencing an OPDRV.
- C** To ensure that only ONE OPDRV/OPDRC is in progress at any time.
- D** To determine if condition requiring an OPDRV/OPDRC actually exists.

# Question Number: 701

Answers: A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - No  
WRONG: Not a purpose of this form.  
VALID DISTRACTOR: Plant risk is minimized by controlling OPDRV/OPDRC.

CHOICE (B) - YES  
Modified BANK question to make this previously incorrect distracter correct.

CHOICE (C) - No  
WRONG: NDAP-QA-0326 does permit more than one at a time.  
VALID DISTRACTOR: Applicant could mistakenly believe that only one is permitted at a time.

CHOICE (D) - No  
WRONG: This is the purpose of Attachment A and was the previously correct answer.  
VALID DISTRACTOR: This is done in Attachment A.

## References

SSES Exam Bank  
NDAP-QA-0326

## Comments and Question Modification History

GXJ     THF     RJC     SSES

Gil 09/28/05: add to distracter D ".....if a condition requiring ..". Will balance with other distracters in length. Also more grammatically correct.  
This may be SRO only.

R: distracter "D" revised as suggested. This was modified from a BANK question recommended by SSES for the RO exam.

Todd 10/05/05 - K/A mismatch. Don't see link between Maintenance Activity and Refueling process.  
R: OPDRV/OPDRC are refueling outage activities.

Rejected question and saved as 701

## NRC K/A System/E/A

### System

Number	RO	SRO	CFR Link
--------	----	-----	----------

### NRC K/A Generic

System	2.2	Equipment Control
--------	-----	-------------------

Number	2.2.27	RO 2.6	SRO 3.5	CFR Link (CFR: 43.6 / 45.13)
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Knowledge of the refueling process.

Question Number: 711

# 71

RO

SRO

Question ID:

29640 Origin: Mod

Memory Level

A 47-year old Operator is working in a radiation field under the following conditions:

- The Operator's cumulative Total Effective Dose Equivalent (TEDE) for the YEAR is 840 millirem (0.84 Rem).
- The Operator's cumulative Total Effective Dose Equivalent (TEDE) for his LIFETIME is 24,000 millirem (24 Rem).
- The activity is taking place in a radiation field of 20 millirem per hour (0.020 Rem / hour).
- A dose extension is NOT authorized.

What is the MAXIMUM number of hours this Operator may work without exceeding SSES radiation exposure limits?

- A** 8
- B** 58
- C** 158
- D** 208

# Question Number: 711

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

The limit is determined by subtracting current TEDE from the applicable limit; then dividing the result by the dose rate. In this case, the Applicant must determine that the appropriate limit is 2,000 millirem, then subtract the current year's TEDE to obtain 1,160 millirem. Dividing 1,160 mR by 20 mR/hr yields 58 hours.

CHOICE (A) - No

VALID DISTRACTOR: This would be correct is the LIFETIME TEDE exceeded the Operator's age in Rem (e.g., >47 Rem)

CHOICE (B) - YES

CHOICE (C) - No

VALID DISTRACTOR: This would be correct is a dose extension were authorized.

CHOICE (A) - No

VALID DISTRACTOR: This would be correct if the Applicant uses the NRC limit of 5 Rem.

## References

SSES Exam Bank  
NDQP-QA-0625

## Comments and Question Modification History

GKJ  TMF  RJC  SSES

Gil 09/28/05: OK

Todd 10/05/05 - revise stem to MAX number of hours and add specific limit (SSES and not NRC).

Rejected by Branch Chief as too simplistic. Saved as 711

## NRC K/A System/E/A

### System

Number RO SRO CFR Link

## NRC K/A Generic

System 2.3 Radiation Control

Number 2.3.1 RO 2.6 SRO 3.0 CFR Link (CFR: 41.12 / 43.4. 45.9 / 45.10)

Knowledge of 10 CFR: 20 and related facility radiation control requirements.

**Question Number: 741**

**# 74**

RO

SRO

**Question ID:**

**29644 Origin: Mod**

**Memory Level**

SSES Unit 2 has the following conditions:

- A Reactor Scram condition is present.
- 24 Control Rods are at Position 04.
- All other Control Rods are at Position 00.
- Reactor Pressure Vessel level is stable at +35 inches.
- IRMs are not yet fully inserted.

What is the status of the Reactor?

- A** The Reactor IS shutdown and WILL remain shutdown under ALL conditions without Boron.
- B** The Reactor IS shutdown but will NOT remain shutdown under ALL conditions without Boron.
- C** The Reactor IS shutdown but MAY NOT remain shutdown (indeterminate). Need input from Reactor Engineering.
- D** The Reactor is NOT shutdown and will NOT remain shutdown under ALL conditions without Boron.



**Question Number: 751**

**# 75**

**RO**

**SRO**

**Question ID:**

**29645 Origin: Bank**

**Memory Level**

Which ONE of the following correctly describes EO-000-103 requirements for HPCI and RCIC operation with Suppression Pool level below 17 feet and the basis for any differences?

- A** RCIC operation may continue to operate because the RCIC turbine exhaust is within the Primary Containment Vent capacity.
- B** RCIC operation must be isolated at the same time as HPCI to minimize Primary Containment pressure rise.
- C** RCIC operation may continue ONLY if it is the LAST available source of high pressure coolant injection to ensure adequate core cooling.
- D** RCIC operation may continue IF Suppression Pool Spray is on to condense RCIC turbine exhaust steam.

# Question Number: 751

Answers: A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - YES

CHOICE (B) - No

WRONG: Not true.

VALID DISTRACTOR: RCIC and HPCI have similar designs.

CHOICE (C) - No

WRONG: The EOP does NOT say this. Rather, RCIC is expected to trip on high backpressure BEFORE HPCI does.

VALID DISTRACTOR: Reasonable to believe that EOPs would preserve last source of HP injection.

CHOICE (D) - No

WRONG: RCIC and HPCI have similar designs.

VALID DISTRACTOR: Reasonable to believe they could affect each other adversely.

## References

Fitzpatrick 1 exam of July 2003 (Question ID 25693)  
EO-000-103, SP/L-6

## Comments and Question Modification History

GXJ  TWF  RJC  SSES

Gil 09/28/05: Distracter "D" can be improved by changing to "RCIC operation may continue as long as suppression pool sprays are on to condense exhaust steam."  
R: done.

Todd 10/05/05 - changed stem of question (editorial). Is this a RO level question?

R - will ask SSES.

SQ 11/04/05 - SSES considers this a fair RO question with no dissenting or concurring opinions within SSES staff.

SQ 11/14/05 - editorial changes to stem and all four distractors. Saved original as 751.

## NRC K/A System/E/A

System

Number RO SRO CFR Link

## NRC K/A Generic

System 2.4 Emergency Procedures /Plan

Number 2.4.22 RO 3.0 SRO 4.0 CFR Link (CFR: 43.5 / 45.12)

Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.

Question Number: 761

# 76

RO

SRO

Question ID: 29651 Origin: Mod

Memory Level

Following a STATION BLACKOUT, which one of the following describes SSES's coping strategy and the instrumentation available to monitor the plant?

- A** Reactor Pressure Vessel (RPV) pressure is reduced by opening up to THREE SRVs at a time. Reactor Core Isolation Cooling (RCIC) operates to control RPV level & supplement depressurization. High Pressure Coolant Injection (HPCI) is SECURED to minimize DC electrical loads. Source Range Monitors (SRMs) REMAIN energized and SRM detectors can be inserted. Suppression Pool Temperature (SPOTMOS) and Accident Monitoring Instrumentation (purple ID labels) REMAIN energized.
- B** Reactor Pressure Vessel (RPV) pressure is reduced by opening ONE SRV at a time. Reactor Core Isolation Cooling (RCIC) operates to control RPV level & supplement depressurization. High Pressure Coolant Injection (HPCI) operates to control RPV level and supplement depressurization. Source Range Monitors (SRMs) are MANUALLY reenergized and SRM detectors can be inserted. Suppression Pool Temperature (SPOTMOS) and Accident Monitoring Instrumentation (purple ID labels) REMAIN energized.
- C** Reactor Pressure Vessel (RPV) pressure is reduced by opening ONE SRV at a time. Reactor Core Isolation Cooling (RCIC) operates to control RPV level & supplement depressurization. High Pressure Coolant Injection (HPCI) operates in CST-to-CST full flow test mode to supplement depressurization. Source Range Monitors (SRMs) REMAIN energized and SRM detectors can be inserted. Suppression Pool Temperature (SPOTMOS) and Accident Monitoring Instrumentation (purple ID labels) are MANUALLY reenergized.
- D** Reactor Pressure Vessel (RPV) pressure is reduced by opening up to THREE SRVs at a time. Reactor Core Isolation Cooling (RCIC) operates in CST-to-CST full flow test mode to supplement depressurization. High Pressure Coolant Injection (HPCI) operates to control RPV level & supplement depressurization. Source Range Monitors (SRMs) REMAIN energized and SRM detectors can be inserted. Suppression Pool Temperature (SPOTMOS) and Accident Monitoring Instrumentation (purple ID labels) are MANUALLY reenergized.

# Question Number: 761

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - NO

WRONG: EO-000-102, RC/P-6 allows opening of only one SRV. SPOTMOS and Acc Mon Inst must be manually reenergized with HSE switches. HPCI is not secured.

VALID DISTRACTOR: All other conditions are correct.

CHOICE (B) - NO

WRONG: HPCI operation would flood the RPV and cause HPCI & RCIC turbines to trip. SRMs remain energized continuously from 24-VDC

VALID DISTRACTOR: All other conditions are correct.

CHOICE (C) - YES

CHOICE (D) - NO

WRONG: EO-000-102, RC/P-6 allows opening of only one SRV. EO-100/200-030 uses RCIC for Inventory and puts HPCI in CST-to-CST mode.

VALID DISTRACTOR: All other conditions are correct.

## References

SSES Bank Question

EO-100-003

TM-OP-017

EO-000-102

## Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Gil 10/16/05 - Did not see SRM operation or SPOTMOS in references.

R: SRM operation is protected DC power. SPOTMOS is Suppression Pool Temperature Monitoring System. Could not confirm technical detail.

Todd/Rich 10/31/05 - saved original as 761 - too busy.

## NRC K/A System/E/A

System 29500 Partial or Complete Loss of A.C. Power  
3

Number AA2.02 RO 4.2 SRO 4.3 CFR Link (CFR: 41.10 / 43.5 / 45.13)

Ability to determine and/or interpret the following as

they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER : Reactor power / pressure / and level

## NRC K/A Generic

System

Number

RO

SRO

CFR Link

Question Number: 832

# 83

RO

SRO

Question ID: 29669 Origin: Mod

Memory Level

SSES Unit 2 is at 40% of rated power. Main Condenser back-pressure readings over the next ten minutes are as follows:

- 1 Minute 4 in HG absolute
- 2 Minutes 8 in HG absolute
- 4 Minutes 10 in HG absolute
- 6 Minutes 12 in HG absolute
- 8 Minutes 14 in HG absolute
- 10 Minutes 23 in HG absolute

(1) With no Operator action, what is the sequence of plant events during these ten minutes?  
(2) When and why should the Unit Supervisor direct the Primary Control Operator to manually scram the Reactor?

- A** (1) Main Turbine Trip, Reactor Feed Pump Turbine Trip, Main Steam Isolation Valves Close, Turbine Bypass Valves Close.  
(2) AFTER the Main Turbine trips to prevent opening of Turbine Bypass Valves.
- B** (1) Main Steam Isolation Valves Close, Main Turbine Trip, Reactor Feed Pump Turbine Trip, Turbine Bypass Valves Close.  
(2) AFTER the Main Turbine trips ONLY IF the Reactor fails to scram automatically.
- C** (1) Main Turbine Trip, Reactor Feed Pump Turbine Trip, Main Steam Isolation Valves Close, Turbine Bypass Valves Close.  
(2) BEFORE the Main Turbine trips to prevent forcing an automatic protective action.
- D** (1) Reactor Feed Pump Turbine Trip, Main Turbine Trip, Main Steam Isolation Valves Close, Turbine Bypass Valves Close.  
(2) BEFORE the Main Turbine trips because an automatic reactor scram will not occur at this power level.

# Question Number: 832

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - NO

WRONG: Manual scram should precede the Turbine trip  
VALID DISTRACTOR: sequence of events is correct.

CHOICE (B) - NO

WRONG: Manual scram should precede the Turbine trip. Sequence of events is wrong.  
VALID DISTRACTOR: Reactor will automatically scram from above 30% if Turbine trips.

CHOICE (C) - YES

CHOICE (D) - NO

WRONG: Sequence of events is wrong. Auto scram will occur cause >30%.  
VALID DISTRACTOR: Correct to scram before Turbine trips. (Stop heat generation BEFORE removing the heat sink).

## References

Clinton June 200 exam (Question ID 18955)  
Cooper 1 August 2002 exam (Question ID 23963)  
ON-143-001  
ON-100-101

## Comments and Question Modification History

EXJ  THF  RJC  SSES

10 CFR 55.43 (b)(5)

Tough K/A match. Alternative may be to present sequence of events and ask what could have caused it.

Gil 10/16/05 - Question is about what happens with decreasing vacuum. NOT a match to K/A. Suggest a table of absolute pressure readings with time and ask when the various things will happen. In any event, RX will Scram on Turbine Trip >30% power.

R - This was an acceptable K/A match on another NRC exam. I see no difference between asking for the correct sequence of events and the suggested fix. Agree that the Rx will scram upon Turbine Trip. Question is asking if the Applicant recognizes that the heat sink is about to be lost and, therefore, it is best to preemptively stop the heat source - without reliance on automatic action.

Gil 10/17/05 - per phone conversation, add table of values to test Applicant's ability to interpret the indication.

R - done.

Todd/Rich 10/31/05 - Saved original as 832 and deleted first part of the question.

## NRC K/A System/E/A

System 29500 Loss of Main Condenser Vacuum  
2

Number AA2.01 RO 2.9 SRO 3.1 CFR Link (CFR: 41.10 / 43.5 / 45.13)

Ability to determine and/or interpret the following as they apply to LOSS OF MAIN CONDENSER VACUUM : Condenser vacuum/absolute pressure

## NRC K/A Generic

System

Number RO SRO CFR Link

**Question Number: 850**

**# 85**

RO

SRO

**Question ID:**

**29671 Origin: Bank**

**Memory Level**

OSCAR has been dispatched as a result of an unisolable primary to secondary containment leak on SSES Unit 1. A cool down is in progress with the MSIVs closed. Standby Gas Treatment System is in service with the following parameters:

- Secondary Containment differential pressure is -0.31 inches WG.
- SGTS SPING Noble Gas is 1.0E06 (1,000,000) micro curies per minute.
- OSCAR whole body dose readings are 0.05 millirem per hour.

A siding panel fails on the Refuel Floor. Secondary Containment differential pressure now indicates 0 inches WG.

- (1) How do SPING readings relate to the offsite release rate and
  - (2) How will OSCAR whole body dose readings respond to the panel failure?
- A** (1) SBGT SPING Noble Gas is NOT representative of the Total Offsite Release.  
(2) OSCAR whole body dose readings will increase.
- B** (1) SBGT SPING Noble Gas is NOT representative of the Total Offsite Release.  
(2) OSCAR whole body dose readings will NOT change.
- C** (1) SBGT SPING Noble Gas IS representative of the Total Offsite Release.  
(2) OSCAR whole body dose readings will increase.
- D** (1) SBGT SPING Noble Gas IS representative of the Total Offsite Release.  
(2) OSCAR whole body dose readings will NOT change.

# Question Number: 850

Answers: A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - YES

CHOICE (B) - NO

WRONG: OSCAR readings as release rate increases. Release rate increases through the siding failure.

VALID DISTRACTOR: Applicant may misunderstand how OSCAR works and think it sees the increased release. SBT part is correct.

CHOICE (C) - NO

WRONG: The panel failure cause bypass of SBT.

VALID DISTRACTOR: OSCAR does see increase

CHOICE (D) - NO

WRONG: The panel failure causes bypass of SBT

VALID DISTRACTOR: Applicant may misunderstand how OSCAR works and think it sees the increased release. Mirror imaging.

## References

SSES Bank  
TM-OP-070

## Comments and Question Modification History

EXJ  THF  RJC  SSES

10 CFR 55.43 (b)(4).

Gil 10/16/05 - No K/A statement with question. Looks like a system-level, not SRO level (no choice of procedures). How does OSCAR "see" the release?

R - K/A statement added. OSCAR is an Off-site Rad Monitoring team.

Gil 10/17/05 - K/A match is acceptable. Accepts SRO under (b)(4).

Todd/Rich 10/31/05 - editorial changes.

SQ 11/14/05 - significant editorial changes. Saved original as 851.

## NRC K/A System/E/A

**System** 29503 Secondary Containment High Differential Pressure  
5

**Number** EA2.02 **RO** 2.8 **SRO** 4.1 **CFR Link** (CFR 41.8 to 41.10)

Ability to determine and/or interpret the following as they apply to SECONDARY CONTAINMENT HIGH DIFFERENTIAL PRESSURE: Off-site release rate: Plant-Specific.

## NRC K/A Generic

**System**

**Number** **RO** **SRO** **CFR Link**

**Question Number: 881**

**# 88**

RO

SRO

**Question ID:**

**29664 Origin: New**

**Memory Level**

Both SSES Units are at full power. The 13.8-kVAC, 4.16-kVAC and 480-VAC electrical power distribution systems are in their NORMAL configurations. A fault develops in ESS Transformer T-201 (OX203)?

- (1) How does the Electric Plant respond to this event?
- (2) What action MUST the Operator take to mitigate this event?

- A** (1) ESS buses 1D (1A204) and 2D (2A204) remain ENERGIZED from ESS Transformer T-201 (OX203).  
(2) Dispatch an Operator to perform LA-OX203-001 OX203 Engineered Safeguards Transformer Local Alarm Response.
- B** (1) ESS buses 1D (1A204) and 2D (2A204) are ENERGIZED from Emergency Diesel Generator "D".  
(2) Dispatch an Operator to perform LA-OX203-001 OX203 Engineered Safeguards Transformer Local Alarm Response.
- C** (1) ESS buses 1D (1A204) and 2D (2A204) are DEENERGIZED and Feeder Breakers can NOT be closed.  
(2) Restore RBCW to Reactor Recirculation Pump (RRP) motor winding coolers.
- D** (1) ESS buses 1D (1A204) and 2D (2A204) are ENERGIZED from ESS Transformer T-101 (OX201).  
(2) Restore RBCW to Reactor Recirculation Pump (RRP) motor winding coolers.

**Question Number: 881**

Answers: **A**  **B**  **C**  **D**

References Provided to Applicant:

**Justification**

CHOICE (A) - NO

WRONG: Fault in T-201 causes the 13.8-kVAC feeder to T201 to trip open. All four 4.16-kVAC feeders to ESS busses receive trip signals. Correct to dispatch AO but not top priority.

VALID DISTRACTOR: Applicant could misunderstand severity of the condition.

CHOICE (B) - NO

WRONG: EDGs are the EMERGENCY, not ALTERNATE source.

VALID DISTRACTOR: Fault on the buss would start the EDG on UV (although, it would not load). Correct to dispatch AO but not top priority.

CHOICE (C) - NO

WRONG: ALTERNATE feeders are expected to close within 0.5 seconds.

VALID DISTRACTOR: correct if fault existed on the buss instead of the transformer. Correct concern (cross-tie CIG with IA)

CHOICE (D) - YES.

**References**

ON-104-204

TM-OP-004

**Comments and Question Modification History**

**GXJ**       **TWF**       **RJC**       **SSES**

10 CFR 55.43 (b)(5)

**NRC K/A System/E/A**

**System** 26200 A.C. Electrical Distribution  
1

**Number** A2.05      **RO** 2.9      **SRO** 3.3      **CFR Link** (CFR 41.5 / 45.6)

Ability to (a) predict the impacts of Bus grounds on the A.C. ELECTRICAL DISTRIBUTION ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations

**NRC K/A Generic**

**System**

**Number**      **RO**      **SRO**      **CFR Link**

**Question Number: 920**

**# 92**

RO

SRO

**Question ID:**

**29679 Origin: New**

**Memory Level**

SSES Unit 2 is at full power when a Relay Room fire forces a Control Room Evacuation. Which ONE of the following correctly describes RPV instrumentation available at the Remote Shutdown Panel that is protected in the event of an Appendix R fire?

- A** RPV Extended Range water level (LI-14203A/B)  
RPV Narrow Range pressure (PI-14262)
- B** RPV Wide Range water level (LT-14201A/B)  
RPV Wide Range pressure (PI14202A/B)
- C** RPV Extended Range water level (LI-14203A/B)  
RPV Wide Range pressure (PI14202A/B)
- D** RPV Wide Range water level (LT-14201A/B)  
RPV Wide Range pressure (PI-14262)

Question Number: 920

Answers:

A

B

C

D

References Provided to Applicant:

Justification

Question never completed

DO NOT USE

References

Comments and Question Modification History

GXJ

THF

RJC

SSES

**NRC K/A System/E/A**

System 21600  
0

Number RO SRO CFR Link

**NRC K/A Generic**

System 2.4 Emergency Procedures /Plan

Number 2.4.27 RO 3.0 SRO 3.5 CFR Link (CFR: 41.10 / 43.5 / 45.13)

Knowledge of fire in the plant procedure.

**Question Number: 960**

**# 96**

RO

SRO

**Question ID:**

**29709 Origin: Bank**

**Memory Level**

SSES Unit 1 is at full rated power.

During performance of SO-151-B02, QUARTERLY CORE SPRAY FLOW VERIFICATION DIVISION II, a System Engineer has asked that Core Spray Pump 1P206B be started with its discharge (CORE SPRAY LOOP B TEST TO SUPP POOL HV-152-F015B) path Manually throttled to 75% open instead of full closed. This is not described in any approved procedure.

What approval is required to perform this test?

Operators may perform the test . . .

- A** . . . with an approved Safety Evaluation only.
- B** . . . with approval from ISI/IST Engineering only.
- C** . . . with approval of the Manager - Nuclear Operations only.
- D** . . . with approval of the Vice President - Nuclear Operations only.



**Question Number: 961**

**# 96**

**RO**

**SRO**

**Question ID: 29683 Origin: Bank**

**Memory Level**

SSES Unit 1 is at full rated power.

During performance of SO-151-B02, QUARTERLY CORE SPRAY FLOW VERIFICATION DIVISION II, a System Engineer has asked that Core Spray Pump 1P206B be started with its discharge (CORE SPRAY LOOP B TEST TO SUPP POOL HV-152-F015B) path Manually throttled to 75% open instead of full closed. This is not described in any approved procedure.

Which ONE of the following is the correct response to this request?

Operations may . . .

- A** . . . NOT authorize or perform the test without an approved Safety Evaluation.
- B** . . . NOT authorize or perform the test without approval from the ISI/IST Engineering.
- C** . . . perform the test if two SROs and the STA concur and approve it.
- D** . . . perform the test after completing the surveillance if the Shift Manager approves it.

# Question Number: 961

Answers:  A  B  C  D

References Provided to Applicant:

## Justification

CHOICE (A) - YES

CHOICE (B) - No

WRONG: a Safety Evaluation is required.

VALID DISTRACTOR: SSES' screening process includes a break out for ISI/IST stuff.

CHOICE (C) - No

WRONG: not true

VALID DISTRACTOR: some stations permit pen and ink changes or "n/a" with concurrence of two SROs.

CHOICE (D) - No

WRONG: not true

VALID DISTRACTOR: Shift Manager does have authority to direct activities outside the scope of existing procedures if necessary to protect the PH&S.

## References

10 CFR 55.43 (b)(3)

NDAP-QA-0726

LaSalle exam of November 2000 (Question ID 19300)

## Comments and Question Modification History

**GXJ**  **TMF**  **RJC**  **SSES**

10 CFR 55.43 (b)(3)

Gil 10/16/05 - Add "With the plant at 100% power..." ...path Manually throttled...Delete after described in and replace with "any approved procedure" (too many "buzz" words that cue the applicant) Is there a manual valve that can be throttled? Would make a better case for outside UFSAR without cuing excessively

R - all done except Manual valve because there is no manual valve (no Pp discharge isolation).

Gil 10/17/05 - deleted " nor in SSES's Safety Analysis Report" from end of stem to eliminate another cue.

R - done.

## NRC K/A System/E/A

System

Number RO SRO CFR Link

## NRC K/A Generic

System 2.2 Equipment Control

Number 2.2.7 RO 2.0 SRO 3.2 CFR Link (CFR: 43.3 / 45.13)

Knowledge of the process for conducting tests or experiments not described in the safety analysis report.

**Question Number: 971**

**# 97**

RO

SRO

**Question ID: 29684 Origin: New**

**Memory Level**

A failure of transmitter TT-11305 has forced the Control Room to take manual control of Service Water Temperature Control Valve TV11028 at Temperature Controller TIC-11028 on panel 1C668. With this configuration, Operators are able to maintain RBCCW Heat Exchanger outlet temperature at the normal value of 90 degrees Fahrenheit. Adjustments are generally infrequent and predictable. Auxiliary Operators report RBCCW heat exchanger outlet temperature hourly from local indicators TI-11307A/B because the failed transmitter also causes the Control Room to lose RBCCW HX DISCH TEMP TI-11305 indication and disables RBCCW HEADER HI TEMP alarm (AR-123-E05).

As Unit Supervisor, you are reviewing the AR to repair TT-11305. What is the CLASSIFICATION and PRIORITY of this work?

- A** Classification is Corrective Maintenance (A)  
Priority is 1, work that should be scheduled and started within 24 hours.
- B** Classification is Corrective Maintenance (A)  
Priority is 2, schedule at earliest opportunity within four weeks (short cycle)
- C** Classification is Elective Maintenance (B)  
Priority is 3, schedule at next available system window.
- D** Classification is Elective Maintenance (B)  
Priority is 4, schedule as resources allow within the normal 13-week schedule process.

