

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

1. 003-A2.05 076/MODIFIED/TURKEY POINT 2005 EX/H/3/SRO///

Given the following conditions:

- Unit 1 is at 100% power
- VCT level is initially 52%
- VCT pressure is initially 30 psig

The OATC notes 1-CH-LCV-1115A, VCT Level Control valve, is in the DIVERT position.

The following conditions exist:

- VCT automatic makeup initiates
- 1-CH-LC-1112C, VCT Level Controller, indicates 100% demand
- VCT level is stable at 23%
- VCT pressure is stable at 17 psig

Based on the change in plant conditions, leakoff from the **RCP number 2 seal** to the standpipe will _____.

To mitigate this event, the crew will enter 1-AP-16, Increasing Primary Plant Leakage, and _____.

- A. increase;
isolate letdown by closing 1-CH-HCV-1200A, B, & C, and 1-CH-LCV-1460A & B.
- B. increase;
align 1-CH-LCV-1115A to VCT by locally opening breaker 7 on 1-EP-CB-26B.
- C. decrease;
isolate letdown by closing 1-CH-HCV-1200A, B, & C, and 1-CH-LCV-1460A & B.
- D. decrease;
align 1-CH-LCV-1115A to VCT by locally opening breaker 7 on 1-EP-CB-26B.

- a. Incorrect. Plausible if candidate does not understand the relationship between VCT pressure and # 2 seal; second part it also incorrect, however it is only taken if VCT level is NOT under control or failing the divert valve to the VCT is unsuccessful.
- b. Incorrect. First part is incorrect as discussed above; second part is correct.
- c. Incorrect. First part is correct. Second part is incorrect as discussed in Distractor a.
- d. Correct. First part is correct. Second part is also correct, the LC is operating correctly (100% demand is the controller output that positions the valve to the VCT position) so the action required by 1-AP-16 is to fail the valve to the VCT position by removing power (1-AP-16 Step 3 RNO).

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Reactor Coolant Pump System (RCPS)

Ability to (a) predict the impacts of the following malfunctions or operations on the RCPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Effects of VCT pressure on RCP seal leakoff flows
(CFR: 41.5 / 43.5/ 45.3 / 45/13)

Tier: 2
Group: 1

Importance Rating: 2.5/2.8

Technical Reference: 1-AP-16

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: modified from turkey point 2005 NRC exam to make specific for NAPS

additional info:

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

Created: Thursday, September 11, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED

source if bank: TURKEY POINT 2005 EX

cognitive level: H

difficulty level: 3

job: SRO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

2. 005-A2.02 077/NEW//H/3/SRO/NAPS/8/20/2008/

Unit 1 is in Mode 4 with a heatup in progress following a scheduled refueling outage.

The following plant conditions exist:

- RHR is in service
- RCS temperature is 270°F
- SI accumulator pressures and levels are all at normal operating level and pressure
- SI accumulator MOVs are all CLOSED

The Safeguards watchstander reports the following:

- The breaker for "B" SI accumulator MOV is ON
- The breaker for "C" SI accumulator MOV is OFF

Based on these plant conditions, which ONE of the following identifies the **action to be taken**, and the **reason for the action**?

- A. Place the breaker for "C" SI accumulator MOV in ON;
SI accumulators are maintained available for Shutdown LOCA mitigation concerns.
- B. Place the breaker for "C" SI accumulator MOV in ON;
SI accumulator MOVs are energized to prepare for the change to Mode 3.
- C. Place the breaker for "B" SI accumulator MOV in OFF;
Power is removed from the MOVs to preclude an inadvertent dilution of the RCS.
- D. Place the breaker for "B" SI accumulator MOV in OFF;
Power is removed from the MOVs for RCS overpressure protection.

- a. Incorrect. Plausible and would be correct if the Unit were at higher temperature.
- b. Incorrect. Plausible since the action is part of the startup sequence but is prohibited at the given temperature.
- c. Incorrect. Plausible since boron concentration is not stated and if the assumption was the plant is exiting a refueling outage the candidate who is unaware of the actual requirement may default to this distractor.
- d. Correct. This is a procedural and TS requirement since it is given that the Accumulators are at a pressure that requires them to be isolated with power removed from their actuators.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Residual Heat Removal System (RHRS)

Ability to (a) predict the impacts of the following malfunctions or operations on the RHRS, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Pressure transient protection during cold shutdown (CFR: 41.5 / 43.5 / 45.3 / 45.13)

Tier: 2
Group: 1

Importance Rating: 3.5/3.7

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Wednesday, August 20, 2008

Modified: Friday, January 16, 2009

Revised:

source:	NEW	source if bank:	
cognitive level:	H	difficulty level:	3
job:	SRO	plant:	NAPS
date:	8/20/2008	previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

3. 005-AG2.2.40 078/NEW//H/3/SRO/NAPS/8/20/2008/

Given the following:

- Unit 1 is at 75% power, ramping up at 0.3%/minute to return to full power

The following events occur:

- Annunciator A-D1, Rod Control Urgent failure is received
- The OATC reports that AUTO rod motion has stopped
- The ramp was held to investigate the alarm
- Local observation confirms the alarm is in the 2BD Power Cabinet

Based on these plant conditions, which ONE of the following identifies the **Technical Specification implications** and includes the **actions required by 1-AR-A-D1, Rod Control Urgent Failure?**

- A. Control Rods are INOPERABLE;
Operate Rods in MANUAL to maintain Tave and Tref matched until the problem is corrected.
- B. Control Rods are OPERABLE;
Operate Rods in MANUAL to maintain Tave and Tref matched until the problem is corrected.
- C. Control Rods are INOPERABLE;
Adjust Turbine load or RCS boron concentration to maintain Tave and Tref matched until the problem is corrected.
- D. Control Rods are OPERABLE;
Adjust Turbine load or RCS boron concentration to maintain Tave and Tref matched until the problem is corrected.

- a. Incorrect. First part is plausible since candidate may apply that since surveillance SR 3.1.4.2 cannot be met that rods would have to be declared inoperable; candidate must have knowledge of the basis (SR 3.1.4.2) that based on the given conditions the subject rods are still trippable and thus still considered operable. Second part also incorrect but plausible since movement in bank select is an option however since the controlling bank is affected the AR doesn't permit this.
- b. Incorrect. First part is correct as discussed above rods remain trippable and are thus operable. Second part is incorrect but plausible since movement in bank select is an option however since the controlling bank is affected the AR doesn't permit this.
- c. Incorrect. First part is incorrect but plausible as discussed in Distractor A. Second part is correct since the controlling bank is affected the AR directs using changes to boron concentration or turbine load.
- d. Correct. First part is correct as discussed in Distractor B. Second part also correct as discussed in Distractor C.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Inoperable/Stuck Control Rod

Ability to apply Technical Specifications for a system.
(CFR: 41.10 / 43.2 / 43.5 / 45.3)

Tier: 1
Group: 2

Importance Rating: 3.4/4.7

Technical Reference: TS

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Wednesday, August 20, 2008

Modified: Friday, January 16, 2009

Revised:

source:	NEW	source if bank:	
cognitive level:	H	difficulty level:	3
job:	SRO	plant:	NAPS
date:	8/20/2008	previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

4. 008-G2.2.38SRO 079/MODIFIED/NAPS/L/3/SRO/NAPS//

Both units are at 100% power.

The Technical Specification LCO for the Component Cooling Water (CC) System requires _____ to be operable. The basis for this requirement is to ensure that _____.

- A✓ 3 CC subsystems;
one unit can be cooled down rapidly while the other unit is maintained at full power
- B. 3 CC subsystems;
both units can be cooled down rapidly
- C. 4 CC subsystems;
one unit can be cooled down rapidly while the other unit is maintained at full power
- D. 4 CC subsystems;
both units can be cooled down rapidly

- a. Correct. Number of required subsystems is correct and this is the Basis for the LCO requirement of TS 3.7.19.
- b. Incorrect. Number of required subsystems is correct; second part incorrect but plausible since certain scenarios such as an appendix R fire could be applicable to both units and the candidate may conclude that this is a logical selection based on a limited volume of ECST inventory.
- c. Incorrect. Number of required subsystems is incorrect but plausible since this is the total number of CC subsystems and typically anytime a component is unavailable there is an action associated with it, an example of this is the service water LCO that requires all 4 pumps and both loops in order to not be in an action; second part is the correct basis.
- d. Incorrect. First part incorrect but plausible as discussed above; second part also incorrect but plausible as discussed in distractor b.

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Component Cooling Water

Knowledge of conditions and limitations in the facility license.
(CFR: 41.7 / 41.10 / 43.1 / 45.13)

Tier: 2
Group: 1

Importance Rating: 3.6/4.5

Technical Reference: TS 3.7.19 & TS Basis

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: modified

additional info:

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

Created: Friday, January 16, 2009

Modified: Friday, January 16, 2009

Revised:

source:	MODIFIED	source if bank:	NAPS
cognitive level:	L	difficulty level:	3
job:	SRO	plant:	NAPS
date:		previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

5. 016-G2.4.6 080/NEW//H/3/SRO/NAPS//

Given the following conditions:

- Unit 1 tripped from 100% power due to a small-break LOCA
- RCS temperature is stable at approximately 500°F
- All SG pressures are stable at approximately 670 psig
- Containment pressure is 21 psia and increasing 1 psia every 30 minutes
- CDA has not actuated

Operators have transitioned from 1-E-0, Reactor Trip or Safety Injection, to 1-E-1, Loss of Reactor or Secondary Coolant.

Based on these plant conditions, which ONE of the following identifies the action(s) required by 1-E-1?

- A. Start Outside Recirc Spray pumps and inject the Chemical Addition Tank.
- B. Start Outside Recirc Spray pumps, but DO NOT inject the Chemical Addition Tank.
- C. Start Quench Spray pumps and inject the Chemical Addition Tank.
- D. Start Quench Spray pumps, but DO NOT inject the Chemical Addition Tank.

- a. Incorrect. First part is plausible since containment pressure is on a slowly increasing trend candidate and recirc spray will control containment pressure, but it is not the procedure strategy; second part is correct.
- b. Incorrect. First part is incorrect but plausible as discussed in Distractor A; second part is also incorrect but plausible since candidate may assume that actions are only needed for CNTMT pressure control and disregard the additional action that is required for Iodine control.
- c. Correct. These actions are both required by 1-E-1 for the given event (SBLOCA), based on the conditions provided and taken for Iodine control purposes.
- d. Incorrect. First part correct. Second part is incorrect but plausible since candidate may assume that actions are only needed for CNTMT pressure control and disregard the additional action that is required for Iodine control.

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Non-Nuclear Instrumentation

Knowledge of EOP mitigation strategies.
(CFR: 41.10 / 43.5 / 45.13)

Tier: 2
Group: 2

Importance Rating: 3.7/4.7

Technical Reference: 1-E-1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Friday, August 22, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: SRO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

6. 024-AA2.04 081/NEW//H/3/SRO/NAPS/8/20/2008/

The crew is performing 1-ES-0.1, Reactor Trip Response, and is establishing emergency boration due to four (4) control rods indicating greater than 10 steps.

The crew was unable to open 1-CH-MOV-1350, Emergency Boration valve from the control room or locally.

Based on the given conditons, which ONE of the following identifies the **valve manipulations required** to align the boration flowpath IAW the procedure in effect, and includes the **indication used** to determine when the required amount of boric acid has been added?

- A. Open 1-CH-MOV-1115B & D, charging pump suction from RWST, then close 1-CH-MOV-1115C & E, charging pump suction from VCT;
Charging flow
- B. Open 1-CH-MOV-1115B & D, charging pump suction from RWST, then close 1-CH-MOV-1115C & E, charging pump suction from VCT;
RWST level
- C. Open 1-CH-FCV-1113A, boric acid to blender, and 1-CH-241, manual emergency borate valve;
Boric Acid and PG Controller Integrators
- D. Open 1-CH-FCV-1113A, boric acid to blender, and 1-CH-241, manual emergency borate valve;
Boric Acid Storage Tank level

- a. Incorrect. First part plausible since this alternative is used by FR-S.1 if emergency boration from the control room does not work, FR-S.1 prefers this method vice waiting for local actions to be taken; second part also incorrect but plausible since by swapping suction to the RWST makeup flow would be a direct indication of boric acid solution being added to the RCS.
- b. Incorrect. First part incorrect as noted above; second part incorrect but plausible and was chosen as a distractor since tank level is used when done in accordance with the procedure, but the procedure uses the BAST not the RWST.
- c. Incorrect. First part is correct in accordance with ES-0.1; second part incorrect but plausible as it would be an indication of flow but the attachment on ES-0.1 stipulates BAST level is used when manual emergency borate flowpath is required.
- d. Correct. First part is correct as noted above; second part also correct per ES-0.1, Attachment 2.

QUESTIONS REPORT
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Emergency Boration

Ability to determine and interpret the following as they apply to the Emergency Boration: Availability of BWST
(CFR: 43.5 / 45.13)

Tier: 1
Group: 2

Importance Rating: 3.4/4.2

Technical Reference: 1-ES-0.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Friday, January 16, 2009

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: SRO

plant: NAPS

date: 8/20/2008

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

7. 025-AG2.4.11 082/NEW//H/3/SRO/NAPS//

Given the following conditions:

- Unit 1 is in Mode 5 for drained-down RCS maintenance
- Reactor coolant loops are isolated
- RCS level is +12" above centerline
- A loss of RHR occurs
- The crew is performing actions of 1-AP-11, Loss of RHR
- RCS temperature is rising, and NEITHER RHR pump can be started

Which ONE of the following describes the **preferred method**, and the **actions that will be taken** to restore core cooling in accordance with 1-AP-11?

- A✓ Hot Leg Injection Forced Feed and Spill;
start ONE charging pump, and if necessary, ONE LHSI pump.
- B. Cold Leg Injection Forced Feed and Spill;
start TWO charging pumps and BOTH LHSI pumps.
- C. Cold Leg Injection Forced Feed and Spill;
start ONE charging pump, and if necessary, ONE LHSI pump.
- D. Hot Leg Injection Forced Feed and Spill;
start TWO charging pumps and BOTH LHSI pumps.

- a. Correct. This is the preferred method per attachment 5 of AP-11, the other method (cold leg injection) would only be used if this were not available; under these plant conditions only 1 train is necessary for core cooling thus the procedure only permits operation of 1 train of equipment.
- b. Incorrect. As noted above cold leg path is only used if hot leg is unavailable, the candidate who does not have detailed knowledge of the procedure may overlook this and default to this distractor since the normal injection flowpath at power is via the cold legs; similarly the candidate may have a sense of urgency and if they do not have detailed procedure knowledge may conclude that starting all available pumps to cool the core is preferred.
- c. Incorrect. Flow path incorrect but plausible as previously noted; operation of only one train is correct per AP-11.
- d. Incorrect. Flowpath is correct as previously noted; operation of more than one train is not permitted by the procedure, but plausible as discussed in Distractor b.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Loss of Residual Heat Removal System (RHRS)

Knowledge of abnormal condition procedures.
(CFR: 41.10 / 43.5 / 45.13)

Tier: 1
Group: 1

Importance Rating: 4.0/4.2

Technical Reference: 1-AP-11

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Friday, September 26, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: SRO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

8. 032-AA2.06 083/NEW//H/3/SRO///

Given the following conditions:

- Unit 1 was initially in Mode 2 starting up following a reactor trip
- Burnup is 14,000 MWD/MTU
- The "A" main steamline failed catastrophically inside containment
- Operators have completed 1-E-0, Reactor Trip or Safety Injection and are preparing to transition
- The OATC notes that "A" loop cold-leg temperature indicates 325°F

Based on these plant conditions, which ONE of the following identifies **the procedure** operators will implement upon leaving 1-E-0, and **the indication** that will be used to monitor the Subcriticality CSF Status Tree?

- A. 1-FR-P.2, Response to Anticipated Pressurized Thermal Shock Condition;
Source Range SUR.
- B. 1-FR-P.2, Response to Anticipated Pressurized Thermal Shock Condition;
Gamma-Metrics Wide-Range.
- C. 1-E-2, Faulted Steam Generator Isolation;
Source Range SUR.
- D✓ 1-E-2, Faulted Steam Generator Isolation;
Gamma-Metrics Wide-Range.

- a. Incorrect. First part plausible since a large cooldown has occurred and if the candidate does not know CSF paths from memory they may conclude that this is correct; second part also incorrect but plausible since the candidate may conclude that at this point adverse containment conditions would no longer apply and select this distractor; F-0 however requires use of gamma metrics for the duration of the event.
- b. Incorrect. First part incorrect but plausible as discussed above; second part is correct since for a MSL break the threshold for adverse containment conditions will be crossed and the note in F-0 mentioned above requires use of gamma metrics.
- c. Incorrect. First part is correct based on the information provided. Second part incorrect as previously discussed.
- d. Correct. First part is correct since there are no red or orange path conditions the procedural transition will be to E-2; Second part is also correct as discussed above.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Loss of Source Range Nuclear Instrumentation

Ability to determine and interpret the following as they apply to the Loss of Source Range Nuclear Instrumentation:
(CFR: 43.5 / 45.13)

Tier: 1
Group: 2
Importance Rating: 3.9/4.1

Technical Reference: 1-F-0 and 1-E-0

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

not a direct KA match but intent is met; question does not present a situation involving an obvious loss of source range, (e.g. pegged low, no hi volts indicated, etc.), however the plant conditions given effectively result in a loss of source range since these instruments are not qualified. The SRO should recognize this.

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

Created: Friday, January 16, 2009

Modified: Friday, January 16, 2009

Revised:

source: NEW source if bank:
cognitive level: H difficulty level: 3
job: SRO plant:
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

9. 039-G2.1.25 084/MODIFIED/NAPS/H/3/SRO///

Given the following conditions:

- Unit 1 is at 100% power
- RCS boron is 1120 ppm
- Engineering identified calculation errors during the previous Main Steam Safety Valve (MSSV) Testing

The data was recalculated, and the following lists the **actual** setpoints for the affected SG MSSVs:

MS-SV-101A -- 1092 psig	MS-SV-102B -- 1103 psig
MS-SV-103A -- 1115 psig	MS-SV-103B -- 1120 psig
MS-SV-104A -- 1160 psig	MS-SV-105B -- 1170 psig

Which ONE of the following identifies the Technical Specification **Required Action**, and the Technical Specification **Bases for the action**?

(Reference provided)

- A. Reduce power to < 52% RTP within 4 hours;
ensure primary-to-secondary pressure limitations are not exceeded.
- B. Reduce power to < 37% RTP within 4 hours and reduce PR HI Flux trip to a maximum of 37% RTP within 36 hours;
ensure primary-to-secondary pressure limitations are not exceeded.
- C. Reduce power to < 52% RTP within 4 hours;
provide protection against overpressurizing the Reactor Coolant System.
- D. Reduce power to < 37% RTP within 4 hours and reduce PR HI Flux trip to a maximum of 37% RTP within 36 hours;
provide protection against overpressurizing the Reactor Coolant System.

- a. Incorrect. First part is correct as there are two inoperable safeties but only one on each steam line; second part is incorrect but plausible, the candidate who does not have detailed knowledge of the basis may correlate the role of the MSSVs solely with the function of limiting SG pressure and conclude that by virtue of that pri-sec D/P is limited. There are design limits for both sec-pri and pri-sec (with one of the limit curves displayed on the ICCM), but that is not the bases for MSSV TS requirements.
- b. Incorrect. First part is correct as there are two inoperable safeties; second part incorrect but plausible as discussed in distractor a.
- c. Correct. Action is correct per TS with 1 MSSV inoperable in A SG and 1 inoperable in B SG; bases is correct per TS.
- d. Incorrect. First part incorrect but plausible as discussed in Distractor b; second part is the correct Bases.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Main and Reheat Steam System (MRSS)

Ability to interpret reference materials, such as graphs, curves, tables, etc.
(CFR: 41.10 / 43.5 / 45.12)

Tier: 2
Group: 1

Importance Rating: 3.9/4.2

Technical Reference: TS 3.7.1 and Bases

Proposed references to be provided to applicants during examination: TS 3.7.1

Learning Objective:

Question History: modified from 2006-1 audit

Associated objective(s):

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

Created: Tuesday, October 07, 2008

Modified: Friday, January 16, 2009

Revised:

source:	MODIFIED	source if bank:	NAPS
cognitive level:	H	difficulty level:	3
job:	SRO	plant:	
date:		previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

10. 045-A2.17 085/BANK/NAPS/H/3/SRO/NAPS//

Given the following conditions:

- Unit 1 is at 25% power
- The shift is raising power at 0.3% per minute IAW 1-OP-2.1, Unit Startup from Mode 2 to Mode 1

The following alarms are received in succession:

- EH FLUID RESERVOIR LOW LEVEL
- EH FLUID RESERVOIR LOW-LOW LEVEL
- HP FLUID PUMP LOCKOUT

Which ONE of the following identifies the correct operator response?

- A. ✓ Go to 1-AP-2.1, Turbine Trip Without Reactor Trip Required; place the running EHC pump in PULL-TO-LOCK.
- B. Go to 1-AP-2.1, Turbine Trip Without Reactor Trip Required; verify the running EHC pump tripped.
- C. Go to 1-E-0, Reactor Trip or Safety Injection; verify the running EHC pump tripped.
- D. Go to 1-E-0, Reactor Trip or Safety Injection; place the running EHC pump in PULL-TO-LOCK.

- a. Correct. Since power is below 30% a Reactor trip is not required provided steam dumps are available (which is the normal condition) although implied by the title "HP fluid pump lockout" the running EHC pump is not tripped so the operator is directed to place the running pump in PTL to prevent damage from loss of suction (previous to performing a design change the running pump DID trip, now function only prevents start of the standby pump, thus operators may rely on past knowledge and select an incorrect distractor).
- b. Incorrect. Plausible since the candidate who does not have detailed systems knowledge may conclude that the running pump will trip; second part is correct as noted above.
- c. Incorrect. First part is plausible as discussed in Distractor b; second part is plausible and would be correct if power level were higher or steam dumps were unavailable.
- d. Incorrect. First part incorrect as discussed in Distractor c; second part is correct.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Main Turbine Generator (MT/G) System

Ability to (a) predict the impacts of the following malfunctions or operation on the MT/G system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Malfunction of electrohydraulic control
(CFR: 41.5 / 43.5 / 45.3 / 45.5)

Tier: 2
Group: 2

Importance Rating: 2.7/2.9

Technical Reference: 1-AR-T-E3

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: bank but never used as of 8/20/2008

additional info:

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

Created: Friday, January 16, 2009

Modified: Friday, January 16, 2009

Revised:

source: BANK source if bank: NAPS
cognitive level: H difficulty level: 3
job: SRO plant: NAPS
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

11. 054-AG2.1.27 086/NEW//H/3/SRO//

Given the following conditions:

- Unit shutdown was in progress for scheduled refueling
- Power was held, and the unit has been stabilized at 40% because the "A" MFRV did not appear to be responding to decreasing controller demand
- Local inspection revealed that "A" MFRV is mechanically bound, and is NOT capable of closing

Based on these plant conditions, which ONE of the following completes the statement to identify the **safety-related function that is not met**, and the associated Technical Specification **required action**?

The "A" MFRV is NOT capable of providing isolation _____. TS-required action is to _____.

- A. following a reactor trip to prevent an uncontrolled RCS cooldown; enter information-only action for "A" MFRV.
- B. following a high-energy line break on the "A" SG secondary side; enter information-only action for "A" MFRV.
- C. following a reactor trip to prevent an uncontrolled RCS cooldown; close OR isolate "A" MFRV within 72 hours.
- D✓ following a high-energy line break on the "A" SG secondary side; close OR isolate "A" MFRV within 72 hours.

- a. Incorrect. Plausible since this would be a logical concern but the stem specifically elicits the safety related function so this is incorrect; second part is plausible since redundancy is provided by the MFIV, however since single failure is lost tech specs require action within 72 hours.
- b. Incorrect. First part is correct regarding the safety related function discussed in the TS basis and UFSAR. Second part is incorrect as discussed in distractor A.
- c. Incorrect. First part is incorrect as discussed in distractor A. Second part is correct as discussed in distractor A.
- d. Correct. As previously discussed the safety related function is correct and the given action to close or isolate the subject valve is also correct.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Loss of Main Feedwater (MFW)

Knowledge of system purpose and/or function.
(CFR: 41.7)

Tier: 1
Group: 1

Importance Rating: 3.9/4.0

Technical Reference: Technical Specification 3.7.3 and basis

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info: The KA did not seem to be a logical tie since it related system function to an APE; discussed with USNRC on 9/4/2008 for clarification. Writing a question on a component within the feedwater system and relating it to safety related function and technical specification actions tests SRO level knowledge at the appropriate discriminatory level and satisfies the KA.

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

Answer: DDDDDDDDDD Items Not Scrambled

Created: Thursday, September 04, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: SRO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

12. 055-EA2.03 087/NEW//H/3/SRO//

Given the following conditions:

- Unit 1 was initially at 100% power with 1H EDG tagged out for voltage regulator replacement
- A loss of offsite power occurred, and 1J EDG tripped on overspeed and cannot be restarted
- Letdown automatically isolated due to decreasing PRZR level, and PRZR level is still slowly decreasing

The crew is performing 1-ECA-0.0, Loss of All AC Power.

Based on these plant conditions, which ONE of the following identifies the **procedure used to restore power**, and the **recovery actions once power is restored**?

- A. Use 0-OP-6.4, Operation of the SBO Diesel to energize an Emergency Bus; Following power restoration, manually actuate Safety Injection and go to 1-ECA-0.2, Loss of All AC Power with SI Required.
- B. Use 0-AP-10, Loss of Electrical Power to energize an Emergency Bus; Following power restoration, manually actuate Safety Injection and go to 1-ECA-0.2, Loss of All AC Power with SI Required.
- C. Use 0-OP-6.4, Operation of the SBO Diesel to energize an Emergency Bus; Following power restoration, go to 1-ECA-0.2, Loss of All AC Power with SI Required and manually load required equipment.
- D. Use 0-AP-10, Loss of Electrical Power to energize an Emergency Bus; Following power restoration, go to 1-ECA-0.2, Loss of All AC Power with SI Required and manually load required equipment.

- a. Incorrect. First part is correct. Second part is plausible since conditions exist that would normally require manual SI initiation, this is not correct in this case however since ECA-0.0 does not have Si initiation criteria because controlled loading of equipment is preferred so as not to jeopardize the only source of power to the unit.
- b. Incorrect. First part is incorrect but plausible, use of 0-AP-10 is required by ECA-0.0 to perform other actions required as a result of losing offsite power. For events where one bus is powered it would provide guidance to restore power to the de-energized bus, however for the SBO event 0-OP-6.4 performs that function; second part is incorrect but plausible as discussed in Distractor a.
- c. Correct. 0-OP-6.4 is the correct procedure for restoring power; second part is also correct for reason given in Distractor a.
- d. Incorrect. First part is incorrect as discussed in Distractor b; second part is correct for reason given in Distractor a.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Loss of Offsite and Onsite Power (Station Blackout)

Ability to determine or interpret the following as they apply to a Station Blackout: Actions necessary to restore power
(CFR 43.5 / 45.13)

Tier: 1
Group: 1

Importance Rating: 3.9/4.7

Technical Reference: 1-ECA-0.0, 0-AP-10, 0-OP-6.4

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

Associated objective(s):

additional info: Two part question to expand on KA; the SRO should know the importance of NOT taking certain actions that could jeopardize the power supply, as well as the procedure used to restore power.

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

Created: Thursday, September 11, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: SRO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

13. 056-A2.04 088/MODIFIED/NAPS/H/3/SRO//

Given the following conditions:

- Unit 1 is at 90% power
- "A" & "C" MFW pumps are running, and "B" MFW pump is tagged out
- "A" & "C" Condensate pumps are running, and "B" Condensate pump is tagged out

The following alarms and conditions occur:

- G-G6, CONDENSATE PP 1A-1B-1C AUTO TRIP, alarms and the OATC notes that "A" Condensate pump is tripped
- F-B6, MAIN FD PPS SUCT HDR LO PRESS, and F-B5, MAIN FD PPS LO DIFF PRESS, are subsequently received
- MFW pump suction pressure is 270 psig and slowly lowering
- MFW pump differential pressure is 680 psig and slowly lowering

Based on these plant conditions, which ONE of the following identifies the direction(s) the SRO should provide to the OATC?

- A. Reduce turbine load until the MAIN FD PPS LO DIFF PRESS alarm is clear.
- B. Reduce turbine load until steam flow is less than available feed flow.
- C. Trip the reactor and go to 1-E-0, Reactor Trip or Safety Injection.
- D. Reduce turbine load until MFW pump suction pressure is greater than 300 psig.

- a. Incorrect. This is normally a strategy and clearing of the alarm is a milestone in the load reduction, however based on the plant conditions of low suction pressure a running feed pump will automatically trip long before plant load can be reduced and require a reactor trip; the candidate should realize that the situation is non-recoverable based on the max load reduction rate of 5%/min. and trip the unit.
- b. Incorrect. This is normally a strategy and reducing steam flow to less than available feed flow is a milestone in the load reduction, however based on the plant conditions of low suction pressure a running feed pump will automatically trip long before plant load can be reduced and require a reactor trip; the candidate should realize that the situation is non-recoverable based on the max load reduction rate of 5%/min. and trip the unit.
- c. Correct. As discussed above it is not possible to reduce load quickly enough given the initial power level and a Reactor Trip is required.
- d. Incorrect. This is normally a strategy and clearing of the alarm is a milestone in the load reduction, however based on the plant conditions of low suction pressure a running feed pump will automatically trip long before plant load can be reduced and require a reactor trip; the candidate should realize that the situation is non-recoverable based on the max load reduction rate of 5%/min. and trip the unit.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Condensate System

Ability to (a) predict the impacts of the following malfunctions or operations on the Condensate System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of condensate pumps
(CFR: 41.5 / 43.5 / 45.3 / 45.13)

Tier: 2
Group: 2

Importance Rating: 2.6/2.8

Technical Reference: 1-AP-31

Proposed references to be provided to applicants during examination: None

Learning Objective: 5039

Question History: modified

Associated objective(s):

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

Created: Thursday, September 04, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED source if bank: NAPS
cognitive level: H difficulty level: 3
job: SRO plant:
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

14. 058-AA2.02 089/NEW//L/3/SRO///

Given the following conditions:

- Unit 1 is at 100% power
- Annunciator H-B2, BATTERY CHGR 1-II TROUBLE alarms
- Battery Charger 1-II DC Output breaker has tripped and CANNOT be reset

Based on these plant conditions, which ONE of the following identifies the **Technical Specification required action**, and the **action required by AR-H-B2**?

- A✓ Restore DC electrical power subsystem to OPERABLE status within 2 hours;
Place battery charger 1C-I in service.
- B. Restore DC electrical power subsystem to OPERABLE status within 6 hours;
Place battery charger 1C-I in service.
- C. Restore DC electrical power subsystem to OPERABLE status within 2 hours;
Place battery charger 1C-II in service.
- D. Restore DC electrical power subsystem to OPERABLE status within 6 hours;
Place battery charger 1C-II in service.

- a. Correct. The applicable TS action is 3.8.4 A with a completion time of 2 hours; charger 1C-1 is the spare for battery charger 1-I or 1-II so it will be placed in service.
- b. Incorrect. Plausible since the candidate may not have knowledge of the TS basis of the battery to supply loads for 2 hours and the 6 hour time would not seem unreasonable and is the shutdown action if the subsystem isn't restored within the 2 hours; second part is correct as discussed above.
- c. Incorrect. Action time is correct; second part is incorrect but plausible since the affected chgr is 1-II, the candidate who does not have knowledge of the system configuration may assume that 1C-II would be the logical choice of spare chargers.
- d. Incorrect. Action time is incorrect but plausible as discussed in Distractor c; second part is incorrect but plausible since the affected chgr is 1-II, the candidate who does not have knowledge of the system configuration may assume that 1C-II would be the logical choice of spare chargers.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Loss of DC Power

Ability to determine and interpret the following as they apply to the Loss of DC Power: 125V dc bus voltage, low/critical low, alarm
(CFR: 43.5 / 45.13)

Tier: 1
Group: 1

Importance Rating: 3.3/3.6

Technical Reference: TS 3.8.7 and AR

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

Associated objective(s):

additional information:

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

Created: Friday, September 26, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: SRO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

15. 074-EG2.1.23 090/NEW//H/3/SRO//

Given the following conditions:

- Unit 1 has experienced a LOCA with multiple equipment failures
- The crew is implementing 1-FR-C.1, Response to Inadequate Core Cooling
- Attempts to establish safety injection flow have been unsuccessful
- The crew is at step 20 of 1-FR-C.1, which directs the operator to "Check if RCPs Should be Started"
- Core-exit TCs (CETC) are 1250°F and rising at approximately 3°F/min
- All RCPs are stopped

SG levels are as follows:

- "A" -- 25% **narrow-range** and slowly increasing
- "B" -- 30% **narrow-range** and stable
- "C" -- 50% **wide-range** and slowly decreasing

Containment pressure peaked at 38 psia, and is now 24 psia and slowly decreasing.

Based on these plant conditions, which ONE of the following identifies the **actions and sequence** required by 1-FR-C.1?

- A✓ Start "A" RCP; if CETCs remain the same after "A" RCP is running, then start "B" RCP; if CETCs remain the same after "B" RCP is running, then open PRZR PORVs and block valves.
- B. Start "A" RCP; if CETCs remain the same after "A" RCP is running, then start "B" RCP; if CETCs remain the same after "B" RCP is running, then open all Reactor vent valves and PRZR vent valves.
- C. Start ALL RCPs; if CETCs remain the same after all RCPs are running, then open PRZR PORVs and Block Valves, and open all available RCS vent paths to containment.
- D. Start ALL RCPs; if CETCs remain the same after all RCPs are running, then go to 1-SACRG-1, Severe Accident Control Room Guideline Initial Response.

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

- a. Correct. Operator must realize that starting 'C' RCP is not permitted due to insufficient level in the SG, the concern is creep rupture failure of the U-tubes.
- b. Incorrect. Plausible since first portion of choice (start "A" RCP, then start "B" RCP) is correct, and second portion is an alternative means of establishing an RCS bleed path (similar to FR-H.1 bleed & feed).
- c. Incorrect. Plausible since the candidate may assume that at this stage of the game it is desirable to throw everything you have at it in an attempt to cool the core, but as noted above starting 'C' RCP is specifically prohibited by the procedure, the second part is a procedural action based on Core Exit TCs continuing to increase so it flows with plausibility.
- d. Incorrect. First part is plausible as noted above; the second part is a procedural action based on Core Exit TCs continuing to increase so it flows with plausibility.

Inadequate Core Cooling

Ability to perform specific system and integrated plant procedures during all modes of plant operation.
(CFR: 41.10 / 43.5 / 45.2 / 45.6)

Tier: 1
Group: 2

Importance Rating: 4.3/4.4

Technical Reference: 1-FR-C.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Friday, January 16, 2009

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: SRO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

16. 076-A2.02 091/NEW//H/3/SRO/NAPS/8/20/2008/

Given the following conditions:

- Both units are at 100% power
- 1-SW-P-1A and 1-SW-P-1B are running
- Service Water is throttled in accordance with 0-OP-49.6, Service Water System Throttling Alignment

The OATC observes 1-SW-P-1A discharge pressure is 0 psig, and motor current is 10 amps.

Which ONE of the following identifies the **procedurally required action**, and describes the **status of the SW system AFTER** the applicable pump is started?

- A. Start 2-SW-P-1A;
The Service Water System can perform its required safety function in the event of a DBA only if NO additional failures occur.
- B. Start 2-SW-P-1A;
The Service Water System can perform its required safety function in the event of a DBA assuming ONE additional failure.
- C. Start 2-SW-P-1B;
The Service Water System can perform its required safety function in the event of a DBA only if NO additional failures occur.
- D✓ Start 2-SW-P-1B;
The Service Water System can perform its required safety function in the event of a DBA assuming ONE additional failure.

- a. Incorrect. Plausible since although the candidate realizes the need to start a pump they may not have detailed knowledge of the procedure which specifically requires that a pump is running on each header, to comply with that requirement 2-SW-P-1B is the pump that must be started; second part is also incorrect but plausible since it would be true if service water were NOT throttled as given in the stem.
- b. Incorrect. First part incorrect but plausible as discussed above; second part is true in that with one pump OOS and the system throttled the system can accommodate one additional single failure.
- c. Incorrect. First part is correct, based on these plant conditions 0-AP-12 Step 2c RNO directs the operator to start pumps to establish one running on each header, for this case since 1-SW-P-1A is tripped 2-SW-P-1B will be started to establish flow in that header; second part also incorrect as discussed in distractor a.
- d. Correct. First part is correct as discussed in Distractor c; second part is correct per TS 3.7.8 Basis (action A.1 describes why system is throttled and that the action maintains single failure proof) given the information provided in the stem stating that the system is throttled.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Service Water System (SWS)

Ability to (a) predict the impacts of the following malfunctions or operations on the SWS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Service water header pressure
(CFR: 41.5 / 43.5 / 45/3 / 45/13)

Tier: 2
Group: 1

Importance Rating: 2.7/3.1

Technical Reference: 0-AP-12 and TS 3.7.8 Bases

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Wednesday, August 20, 2008

Modified: Friday, January 16, 2009

Revised:

source:	NEW	source if bank:	
cognitive level:	H	difficulty level:	3
job:	SRO	plant:	NAPS
date:	8/20/2008	previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

17. 077-AA2.03 092/NEW//H/3/SRO/NAPS/8/20/2008/

The following initial conditions existed:

- Both Units at 100% power
- The 1H Diesel Generator is tagged out for pre-planned minor maintenance

The following alarms and indications occur:

- Annunciator 1T-D3, FREQUENCY 59.8 HERTZ
- Annunciator 2T-D3, FREQUENCY 59.8 HERTZ
- Operators have verified the alarms are valid
- 500kV switchyard voltage is 503kV and stable
- System Operator reports frequency is 59.6 Hertz and stable

Based on these plant conditions, which ONE of the following identifies the **most limiting Technical Specification required action?**
(REFERENCE PROVIDED)

- A. Restore one offsite circuit to operable status within 24 hours.
- B. Restore 1H EDG to operable status within 14 days.
- C. Restore either the offsite circuit or the 1H EDG to operable within 12 hours.
- D. Enter LCO 3.0.3 immediately.

- a. Incorrect but plausible since it would be correct if it were only the two offsite circuits were inoperable.
- b. Incorrect but plausible since it would be correct if the offsite circuits were operable (i.e. candidate is unaware that 503kV renders SWYD, and thus both offsite circuits inoperable).
- c. Incorrect but plausible since it would be correct if it were an EDG and ONE offsite circuit inoperable.
- d. Correct. Conditions (swyd voltage) render two required offsite sources inoperable and with the EDG tagged 3 out a 4 logic of 3.8.1 a. & b. is made up so 3.0.3 applies as per TS 3.8.1, Action M.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Generator Voltage and Electric Grid Disturbances

Ability to determine and interpret the following as they apply to Generator Voltage and Electric Grid Disturbances: Generator current outside the capability curve (CFR: 41.5 and 43.5 / 45.5, 45.7, and 45.8)

Tier: 1
Group: 1

Importance Rating: 3.5/3.6

Technical Reference: TS 3.8.1 and basis, 0-AP-8

Proposed references to be provided to applicants during examination: TS 3.8.1

Learning Objective:

Question History: new

additional info: Requirement to analyze plant conditions, coupled with the fact that TS 3.8.1 is lengthy and complicated requires use of reference. None of the validators felt it would be possible to answer without a reference.

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

Created: Wednesday, August 20, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: SRO

plant: NAPS

date: 8/20/2008

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

18. G2.1.28SRO 093/NEW//L/3/SRO/NAPS//

For the Emergency Condensate Storage Tank to be OPERABLE, it must contain a minimum volume of _____; the Basis for this requirement is to _____.

- A. 100,000 gallons ; maintain the unit in MODE 3 for 8 hours.
- B. 100,000 gallons ; maintain the unit in MODE 3 for 16 hours.
- C. 110,000 gallons ; maintain the unit in MODE 3 for 8 hours.
- D. 110,000 gallons ; maintain the unit in MODE 3 for 16 hours.

- a. Incorrect. Plausible this is close to the requirement and the tank is sometimes called 'the 100k tank' (term differentiates it from the CST which is called the 300k tank); time is correct per the basis.
- b. Incorrect. Volume incorrect as noted above; times are also incorrect but plausible especially since CC system has a design time of 16 hrs from RHR entry to cold shutdown.
- c. Correct. Volume is correct per surveillance requirement of TS, time is correct per basis.
- d. Incorrect. Volume is correct per surveillance requirement of TS, time is incorrect but plausible as discussed in Distractor b.

Conduct of Operations

2.1.28 Knowledge of the purpose and function of major system components and controls.
(CFR: 41.7)

Tier: 3

Importance Rating: 4.1/4.1

Technical Reference: 1-E-1 and Background document

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: C C C C C C C C C C Items Not Scrambled

Created: Wednesday, September 17, 2008

Modified: Friday, December 05, 2008

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: SRO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

19. G2.1.32 094/NEW//H/3/SRO/NAPS//

Operators are performing 1-ES-1.1, SI Termination, and are preparing to isolate the BIT.

The OATC is not able to open 1-CH-MOV-1373, Charging Pump Recirc Header Isolation Valve.

Based on these plant conditions, which ONE of the following identifies the **sequence of actions** required in accordance with 1-ES-1.1?

- A. Establish normal charging and maintain **25 gpm** charging flow using 1-CH-FCV-1122 in MANUAL, then isolate the BIT.
- B✓** Establish normal charging and maintain **60 gpm** charging flow using 1-CH-FCV-1122 in MANUAL, then isolate the BIT.
- C. Isolate the BIT, then establish normal charging and maintain **25 gpm** charging flow using 1-CH-FCV-1122 in MANUAL.
- D. Isolate the BIT, then establish normal charging and maintain **60 gpm** charging flow using 1-CH-FCV-1122 in MANUAL.

- a. Incorrect. Plausible since 25 gpm is the normal value when preparing to reestablish letdown, however since the Charging pump recirc path is isolated this value is inadequate.
- b. Correct. Per the caution and procedure step 60 gpm must be maintained to ensure adequate charging pump cooling.
- c. Incorrect. As noted in Distractor A 25 gpm is the normal amount and if the recircs were open this would be the normal sequence.
- d. Incorrect. Plausible as noted in distractor C; candidate may assume that momentarily reducing Charging flow below the minimum for a short period of time is acceptable under the circumstances.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Conduct of operations

Ability to explain and apply system limits and precautions.
(CFR: 41.10 / 43.2 / 45.12)

Tier: 3

Importance Rating: 3.8/4.0

Technical Reference: 1-ES-1.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Thursday, August 28, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: SRO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

20. G2.2.21SRO 095/NEW//L/3/SRO/NAPS//

In accordance with OP-AA-102, Operability Determination, the _____ is responsible for approving prompt Operability Determinations (ODs).

- A✓ Shift Manager
- B. Operations Manager
- C. Engineering Manager
- D. Licensing Manager

- a. Correct. This person (by title) has the final approval authority.
- b. Incorrect. Plausible since the candidate who is not knowledgeable of the process may default to this individual considering he is of higher authority than the SM.
- c. Incorrect. Plausible since again the candidate who is not knowledgeable of the process may conclude that since Engineering personnel are involved in the process it would be the Engineering Manager who would have approval.
- d. Incorrect. Plausible since again the flavor of the question implies that Licensing (who normally processes changes to the TS and TRM) would have the approval responsibility .

Equipment Control

Knowledge of pre- and post-maintenance operability requirements.
(CFR: 41.10 / 43.2)

Tier: 3

Importance Rating: 2.9/4.1

Technical Reference: VPAP-2003

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: A C A C D B B B D C Scramble Range: A - D

Created: Friday, January 16, 2009

Modified: Friday, January 16, 2009

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

source: NEW
cognitive level: L
job: SRO
date:

source if bank:
difficulty level: 3
plant: NAPS
previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

21. G2.2.5 096/MODIFIED/NAPS/H/4/SRO/NAPS//

An activity has been proposed that constitutes a test not described in the UFSAR. Additionally, performance of the activity conflicts with the requirements of the Technical Specifications.

Which ONE of the following identifies the requirements to conduct the activity?

- A. The activity will NOT require a 10 CFR 50.59 Evaluation; prior approval from the NRC is NOT required.
- B. The activity will NOT require a 10 CFR 50.59 Evaluation; prior approval from the NRC is required.
- C. The activity will require a 10 CFR 50.59 Evaluation; prior approval from the NRC is NOT required.
- D. The activity will require a 10 CFR 50.59 Evaluation; prior approval from the NRC is required.

a. and b. are incorrect but plausible since the student may assume that since a change to the license is required, that 10CFR50.59 does not apply. This is the case if a change to Tech Specs is the only aspect of a proposed change, since the change also involves (as stated) a change, test, or experiment not described in the FSAR, both processes must be performed. The candidate who does not have detailed knowledge of the process may conclude that based on a satisfactory License ammendment request that would demonstrate no significant hazadrns exist, that there may (or may not) be a requirement to have prior approval.

c. is also incorrect but is plausible since if unfamiliar with the process the student may perceive that an evaluation is all that is needed to proceed.

d. is correct since 1) the screening has determined that the activity constitutes a test not described in the FSAR so it must be further evaluated against the eight criteria of 10 CFR 50.59 c.ii, and 2) since there is a TS conflict a license ammendment request must be submitted and approval obtained prior to conducting the activity.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Equipment Control

Knowledge of the process for making design or operating changes to the facility.
(CFR: 41.10 / 43.3 / 45.13)

Tier: 3

Importance Rating: 2.2/3.2

Technical Reference: Design Change VPAP

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info: Ro rating is 2.2 but this is an sro only question (SRO has a 3.2 value).

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

Created: Friday, January 16, 2009

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED

source if bank: NAPS

cognitive level: H

difficulty level: 4

job: SRO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

22. G2.3.4SRO 097/NEW//L/2/SRO/NAPS//

Given the following conditions:

- A General Emergency has been declared and an off-site release is in progress
- All Emergency Response Organization facilities are manned and operational
- The TSC has determined that the release point can be isolated by sending an operator into the Auxiliary Building to isolate the flowpath

Which ONE of the following identifies the exposure limit for this activity per EPIP-4.04, Emergency Exposure Limits, and the person (by title) who has the FINAL approval for authorizing emergency exposure limits?

- A. 5 rem ; Station Emergency Manager.
- B. 10 rem ; Station Emergency Manager.
- C. 5 rem ; Radiological Assessment Director.
- D. 10 rem ; Radiological Assessment Director.

- A. Incorrect. Plausible since the candidate who is not knowledgeable of the procedure may conclude that this is the limit since there is not indication of large amounts of radioactivity being released; second part is correct ONLY the SEM has waiver authority.
- B. Correct. To limit off-site releases up to 10 rem is allowed; second part also correct as discussed above.
- C. Incorrect. First part plausible as discussed in distractor a; second part also incorrect but plausible since RWPs are associated with an HP (Radiation Protection) function and the candidate who is not knowledgeable of the procedure would likely default to this distractor.
- D. Incorrect. First part correct; second part incorrect but plausible as discussed in distractor a.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Radiation Control

Knowledge of radiation exposure limits under normal or emergency conditions.
(CFR: 41.12 / 43.4 / 45.10)

Tier: 3

Importance Rating: 3.2/3.7

Technical Reference: EPIP-4.04

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: Crystal river 2007 exam

additional info:

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

Answer: B B B B B B B B B B Items Not Scrambled

Created: Wednesday, September 17, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 2

job: SRO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

23. G2.4.28SRO 098/NEW//H/4/SRO///

Both Units are at 100% power.

A report is received from the FAA that credible insider information has identified that an air threat exists from a Boeing 747 inbound from Miami, Florida with an estimated time of arrival at the station of 30 minutes.

Which ONE of the following identifies the **agency that is contacted** to confirm the threat, and **the action required** by 0-AP-9.01, Station Security Air Threat Operations Response, once the threat is verified to be authentic?

- A. Department of Homeland Security (DHS);
maintain both units stable; shutdown the units only if the threat becomes imminent.
- B. Nuclear Regulatory Commission (NRC);
maintain both units stable; shutdown the units only if the threat becomes imminent.
- C. Department of Homeland Security (DHS);
commence a rapid shutdown of both units using AP-2.2, Fast Load Reduction.
- D. Nuclear Regulatory Commission (NRC);
commence a rapid shutdown of both units using AP-2.2, Fast Load Reduction.

- a. Incorrect. Plausible since DHS would not seem illogical as this situation is germane to their function, but in all cases the procedure requires confirmation thru the NRC; second part also incorrect but plausible as this would allow resources to be used to perform other activities needed to prepare. Taking both units off could jeopardize the offsite power source which would result in further complications, thus waiting till you know for sure seems logical considering both units could be tripped and stabilized in a few minutes (given no other complications).
- b. Incorrect. First part correct per 0-AP-9.01; second part plausible but incorrect as discussed above; further, the candidate who is not knowledgeable of the procedure may conclude that this is the preferred course of action in all cases.
- c. Incorrect. First part incorrect but plausible as discussed in Distractor a; second part is correct per 0-AP-9.01 for a threat that is 30 minutes or less away.
- d. Correct. First part correct as noted in Distractor b; second part is correct per 0-AP-9.01 for a threat that is 30 minutes or less away.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Emergency Procedures / Plan

Knowledge of procedures relating to a security event (non-safeguards information).
(CFR: 41.10 / 43.5 / 45.13)

Tier: 3

Importance Rating: 3.2/4.1

Technical Reference: 0-AP-9.01

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info: This procedure is withheld from public disclosure under 10 CFR 2.390

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

Answer: DDDDDDDDDD Items Not Scrambled

Created: Wednesday, October 01, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 4

job: SRO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

24. G2.4.30SRO 099/BANK/MILSTONE 2005/L/3/SRO/NAPS//

Which ONE of the following describes a **condition required to be reported** to the NRC under 10CFR50.72, and the **correct time limit** for reporting?

- A✓ Deviation from the plant Technical Specifications authorized pursuant to 10CFR50.54(x); report within 1 hour.
- B. Condition that could have prevented fulfillment of a safety function needed to mitigate consequences of an accident; report within 1 hour.
- C. Failure to perform required surveillance test within technical specification allowable time limits; report within 4 hours.
- D. The nuclear power plant in an unanalyzed condition that significantly degrades plant safety; report within 4 hours.

CHOICE (A) - YES

10CFR50.72(b)(1) requires a 1 hour ENS notification if provisions of CFR50.54(x) invoked.

CHOICE (B) - NO

WRONG: Fulfillment of a safety function is an 8 hour notification under 10CFR50.72(b)(3)(v).

VALID DISTRACTOR: Plausible that safety function needed for accident mitigation would be a 1 hour report.

CHOICE (C) - NO

WRONG: Failure to perform a surveillance test within allowable time limits is not 1, 4 or 8 hour reportable.

VALID DISTRACTOR: Plausible that missed surveillance would be reportable as a violation of technical specification requirements.

CHOICE (D) - NO

WRONG: 10CFR50.72(b)(3) requires an 8 hour notification.

VALID DISTRACTOR: Plausible that an unanalyzed condition would require a 4 hour report.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Emergency Procedures / Plan

Knowledge of events related to system operation/status that must be reported to internal organizations or external agencies, such as the State, the NRC, or the transmission system operator.
(CFR: 41.10 / 43.5 / 45.11)

Tier: 3

Importance Rating: 2.7/4.1

Technical Reference: VPAP-2802

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: milestone exam

additional info:

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

Created: Wednesday, September 17, 2008

Modified: Wednesday, December 03, 2008

Revised:

source:	BANK	source if bank:	MILSTONE 2005
cognitive level:	L	difficulty level:	3
job:	SRO	plant:	NAPS
date:		previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC SRO RE-TAKE exam final submittal

25. WE05-EG2.4.6 100/NEW//H/3/SRO/NAPS//

Given the following conditions:

- Unit 1 was at 100% power
- The reactor tripped due to a loss of offsite power
- A loss of all SG feedwater occurred, and operators transitioned from 1-E-0, Reactor Trip or Safety Injection to 1-FR-H.1, Response to Loss of Secondary Heat Sink
- Operators could not restore a source of feedwater, and are establishing RCS bleed and feed in accordance with 1-FR-H.1

Operators were able to open ONLY ONE PRZR PORV.

Based on these plant conditions, the RCS bleed path is _____, and the crew should _____.

- A. adequate;
depressurize SGs to less than 610 psig while continuing efforts to re-establish a high pressure source to feed SGs.
- B. adequate;
open Reactor and PRZR vents and align a low-pressure water source to feed SGs.
- C. inadequate;
depressurize SGs to less than 610 psig while continuing efforts to re-establish a high pressure source to feed SGs.
- D. inadequate;
open Reactor and PRZR vents and align a low-pressure water source to feed SGs.

- a. Incorrect. Plausible since one might deduce that this would be a necessary design feature to accommodate a single failure; second part is a procedure strategy but not correct for the given conditions .
- b. Incorrect. First part incorrect as discussed above; second part is correct.
- c. Incorrect. First part is true per analysis; second part again is a procedure strategy but not correct for the given conditions.
- d. Correct. First part is correct; second part is also correct based on the given conditions.

QUESTIONS REPORT
for NAPS 2009 NRC SRO RE-TAKE exam final submittal

Loss of Secondary Heat Sink

Knowledge of EOP mitigation strategies.
(CFR: 41.10 / 43.5 / 45.13)

Tier: 1
Group: 1

Importance Rating: 3.7/4.7

Technical Reference: 1-FR-H.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Wednesday, September 17, 2008

Modified: Friday, January 16, 2009

Revised:

source:	NEW	source if bank:	
cognitive level:	H	difficulty level:	3
job:	SRO	plant:	NAPS
date:		previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

1. 001-AK1.04 001/NEW//H/3/RO/NAPS/8/20/2008/

Given the following conditions:

- RCS T_{AVE} is 572°F.
- "D" bank rods are at 190 steps.
- Rod control is in AUTOMATIC.

Median/Hi T_{AVE} input to automatic rod control fails LOW.

Which ONE of the following identifies the **Immediate Operator Action** required, and the **effect of the transient** on Shutdown Margin?

- A. Verify redundant instrument channel indication NORMAL;
Shutdown Margin has increased.
- B. Verify redundant instrument channel indication NORMAL;
Shutdown Margin has not changed.
- C. Place Rods in MANUAL;
Shutdown Margin has increased.
- D✓ Place Rods in MANUAL;
Shutdown Margin has not changed.

- a. Incorrect but plausible since this is an immediate operator action (IOA) of AP-3 and would be correct if the failure were Tref vice tave; second part is plausible since rods have moved out.
- b. Incorrect. First part is incorrect but plausible as discussed above; second part is correct there is no change in core reactivity so despite the fact that rods are further out SDM is still the same.
- c. Incorrect. First part is correct as this is an IOA of AP-1.1. Second part is incorrect but plausible as discussed in distractor a..
- d. Correct. first part is the correct IOA for the given plant conditions; second part is also correct as discussed in distractor b.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Continuous Rod Withdrawal

Knowledge of the operational implications of the following concepts as they apply to Continuous Rod Withdrawal: Effect of continuous rod withdrawal on insertion limits and SDM (CFR 41.8 / 41.10 / 45.3)

Tier: 1

Group: 2

Importance Rating: 3.7/3.9

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: DDDDDDDDDD Items Not Scrambled

Created: Wednesday, August 20, 2008

Modified: Wednesday, March 11, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date: 8/20/2008

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

2. 002-K1.11 002/BANK/NAPS/H/2/RO/NAPS//

Given the following conditions:

- Unit 1 is at 25% power and slowly ramping up following a refueling outage
- The "B" Condensate Pump and "B" Main Feedwater Pump are both tagged out
- Power is lost to the "B" Station Service Bus

As a result of this transient, the OATC should **initially** expect to see level in the "B" SG _____, and level in the "A" and "C" SGs _____.

(Assume no operator action)

- A. increase ; increase
- B. increase ; decrease
- C✓ decrease ; increase
- D. decrease ; decrease

- a. Incorrect but plausible since candidate may assume since heat input is reduced to 'B' SG it will over feed; second part is correct since the unaffected SGs will swell as a result of picking up load.
- b. Incorrect. First part is plausible as discussed above; second part incorrect but plausible since steam will increase above feed on these SGs but the affect of swell is the overriding contributor to the level response.
- c. Correct. As discussed the reduction in heat input to 'B' SG will cause it to shrink while increase demand on unaffected SGs causes them to swell.
- d. Incorrect. First part is correct as discussed above; second part is incorrect but plausible as discussed in Distractor b.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Reactor Coolant System (RCS)

Knowledge of the physical connections and/or cause-effect relationships between the RCS and the following systems: S/GS, feedwater systems
(CFR: 41.2 to 41.9 / 45.7 to 45.8)

Tier: 2
Group: 2

Importance Rating: 4.1/4.2

Technical Reference: Lesson Plan Reactor Coolant System

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: bank

additional info:

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

Created: Friday, September 12, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK source if bank: NAPS
cognitive level: H difficulty level: 2
job: RO plant: NAPS
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

3. 003-A2.02 003/NEW//L/2/RO/NAPS//

With Unit 1 at 100% power, annunciator A-E5, RCP 1A VIBRATION ALERT/DANGER, is received.

The Backboards Operator reports the following:

- "A" RCP Seismic vibration = 7 mils
- "A" RCP Proximity vibration = 12 mils

Which ONE of the following identifies the **status of "A" RCP vibration**, and the **actions required** by AR-A-E5, RCP 1A VIBRATION ALERT/DANGER?

- A. Seismic vibration is above the ALERT level;
Increase frequency of monitoring RCP vibration and consider shutting down "A" RCP if increasing trend continues.
- B. Seismic vibration is above the DANGER level;
Trip the reactor and perform the immediate operator actions of 1-E-0, Reactor Trip or Safety Injection, then stop "A" RCP.
- C. Proximity vibration is above the ALERT level;
Increase frequency of monitoring RCP vibration and consider shutting down "A" RCP if increasing trend continues.
- D. Proximity vibration is above the DANGER level;
Trip the reactor and perform the immediate operator actions of 1-E-0, Reactor Trip or Safety Injection, then stop "A" RCP.

- a. Incorrect. Plausible if candidate is not familiar with the annunciator response procedure, or does not know the thresholds where action is required.
- b. Correct. Limit has been exceeded and this is the required action.
- c. Incorrect. Plausible if candidate reverses action for seismic vs. proximaty. Would be true for a value of 15 mils or greater, but 7 is well below the alert and there is no action required for this condition.
- d. Incorrect. Plausible if candidate reverses action for seismic vs. proximaty. Action is correct but, threshold for proximaty is 20 mils not 7 as given.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Reactor Coolant Pump System (RCPS)

Ability to (a) predict the impacts of the following malfunctions or operations on the RCPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Conditions which exist for an abnormal shutdown of an RCP in comparison to a normal shutdown of an RCP
(CFR: 41.5 / 43.5/ 45.3 / 45/13)

Tier: 2
Group: 1

Importance Rating: 3.7/3.9

Technical Reference: 1-AR-A-E5

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Tuesday, September 09, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

4. 003-A3.02 004/NEW//H/3/RO///

As the RCS is cooled down from Hot Standby to Cold Shutdown, RCP seal **injection** flows will _____, and running RCP motor current will _____.

- A. decrease ; increase
- B. increase ; increase
- C. increase ; remain the same
- D. decrease ; remain the same

- a. Incorrect. Plausible since candidate may not properly relate the effect of system pressure changes with seal injection flow rate; second part is correct, since more work is done pumping denser water the pump will draw more current.
- b. Correct. First part is true the change in pressure causes an increase in flow rate; second part is correct as discussed above.
- c. Incorrect. First part correct as discussed in Distractor b; second part incorrect but plausible, since other pumps have control valves that vary flow rate and RCPs do not, student may associated changes in pump motor current with these type pumps (e. g. MFPs) but not RCPs.
- d. Incorrect. First part is incorrect but plausible as discussed in Distractor a; second part incorrect but plausible as discussed above.

Reactor Coolant Pump System (RCPS)

Ability to monitor automatic operation of the RCPS, including: Motor current
(CFR: 41.7 / 45.5)

Tier: 2
Group: 1

Importance Rating: 2.6/2.5

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: B B B B B B B B B B Items Not Scrambled

Created: Tuesday, September 02, 2008

Modified: Thursday, December 04, 2008

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

5. 004-K6.13 005/NEW//H/3/RO/NAPS//

Given the following conditions:

- The OATC has established a 65 gpm dilution in accordance with 1-GOP-8.3.1, Placing the Blender in the Dilute Mode of Operation
- The operator has adjusted the flow rate to the desired value, and matched the setpoint on the controller

Shortly thereafter, the demand on controller 1-CH-FC-1114A, Primary Water to Blender Flow Controller, fails to 100%.

Which ONE of the following identifies the response of the Blender?

- A. Annunciator B-D7, PG WATER TO BLENDER FLOW DEV, alarms as soon as the failure occurs; 1-CH-FCV-1114A, PG to Blender Flow Control Valve, automatically closes.
- B. Annunciator B-D7, PG WATER TO BLENDER FLOW DEV, alarms as soon as the failure occurs; 1-CH-FCV-1114B, Blender Makeup to VCT, automatically closes.
- C. Annunciator B-D7, PG WATER TO BLENDER FLOW DEV, alarms approximately 20 seconds after the failure occurs; 1-CH-FCV-1114A, PG to Blender Flow Control Valve, automatically closes.
- D. Annunciator B-D7, PG WATER TO BLENDER FLOW DEV, alarms approximately 20 seconds after the failure occurs; 1-CH-FCV-1114B, Blender Makeup to VCT, automatically closes.

- a. Incorrect. Plausible since the failure will create a deviation, the candidate who does not have detailed knowledge of the system may conclude that this response is logical; Second part is incorrect this valve will open because of the failure and only manual action would close it.
- b. Incorrect. First part incorrect but plausible as discussed above; second part is correct this valve will automatically close because of the deviation.
- c. Incorrect. First part is correct, the alarm only activates if the deviation is present for at least 20 seconds; second part incorrect but plausible as discussed above additionally similarity of nomenclature between alarm and valve tend to reinforce this distractor.
- d. Correct. After approximately 20 second with a sustained flow deviation the annunciator will alarm and the subject valve will close concurrently.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Chemical and Volume Control System

Knowledge of the effect of a loss or malfunction on the following CVCS components: Purpose and function of the boration/dilution batch controller
(CFR: 41.7 / 45.7)

Tier: 2
Group: 1

Importance Rating: 3.1/3.3

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Friday, September 19, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

6. 005-A4.04 006/NEW//H/3/RO//

Given the following conditions:

- RHR is in-service with 1-RH-P-1A running and 1-CC-P-1B running
- 1-RH-P-1B and 1-CC-P-1A are available with their respective control switches in AFTER-STOP

The normal supply breaker to 1H 4160-Volt Bus is inadvertently opened.

Which ONE of the following identifies the pump configuration after EDG loading is complete?

- A. ONLY 1-RH-P-1B running and ONLY 1-CC-P-1B running.
- B. ONLY 1-RH-P-1B running and BOTH 1-CC-P-1A & 1-CC-P-1B running.
- C. NO RHR pumps running and ONLY 1-CC-P-1B running.
- D✓ NO RHR pumps running and BOTH 1-CC-P-1A & 1-CC-P-1B running.

- a. Incorrect. First part incorrect but plausible since some loads like charging pumps “ride the bus”; second part also incorrect but plausible since this pump never lost power.
- b. Incorrect. First part incorrect but plausible as discussed above; second part is correct since 1-CC-P-1A is sequenced on following the bus UV.
- c. Incorrect. First part correct, UV opens the RHR pump breaker; second part is incorrect since 1-CC-P-1A is sequenced on following the bus UV.
- d. Correct. First part correct as discussed above; second part is also correct because as noted previously 1-CC-P-1A is sequenced on.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Residual Heat Removal System (RHRS)

Ability to manually operate and/or monitor in the control room: Controls and indication for closed cooling water pumps

(CFR: 41.7 / 45.5 to 45.8)

Tier: 2
Group: 1

Importance Rating: 3.1/2.9

Technical Reference: RHR & CC lesson plans

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: DDDDDDDDDDD Items Not Scrambled

Created: Tuesday, September 30, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

7. 005-AK2.02 007/NEW/NAPS/H/3/RO/NAPS//

Given the following conditions:

- Rod H-2, Control Bank D group 1 is mis-aligned LOW
- Operators are preparing to realign the rod in accordance with 1-AP-1.3, Control Rod Out of Alignment

1-AP-1.3 will direct the crew to _____; as a result of this action, the crew should expect a _____ alarm when Rod H-2 is withdrawn.

- A. Open the lift coil disconnect switches for Control Bank D, Gp 1 rods ONLY, EXCEPT for Rod H-2; Rod Control Non-Urgent Failure.
- B. Open the lift coil disconnect switches for Control Bank D, Gp 1 rods ONLY, EXCEPT for Rod H-2; Rod Control Urgent Failure.
- C. Open the lift coil disconnect switches for ALL Control Bank D rods, EXCEPT for Rod H-2; Rod Control Non-Urgent Failure.
- D. Open the lift coil disconnect switches for ALL Control Bank D rods, EXCEPT for Rod H-2; Rod Control Urgent Failure.

- a. Incorrect. Plausible since the affected rod is in this group; second part is plausible since an urgent failure locks up rods (but only in the AFFECTED cabinet) and the candidate who does not have detailed systems knowledge may eliminate the urgent failure as a possibility and default to this distractor.
- b. Incorrect. First part incorrect but plausible as noted above; second part is correct provided the action to open lift coil disconnects is performed correctly.
- c. Incorrect. First part is correct an necessary to prevent movement of rods in the other group within the bank; second part incorrect but plausible as discussed in Distractor a.
- d. Correct. First part is correct as discussed in Distractor c; second part is also correct the source of the urgent failure is the regulation failure in power cabinet 2BD caused all of the lift coil disconnects for Bank D Grp II being open with rod motion demanded (will be demanded once the operator starts withdrawing H-2).

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Inoperable/Stuck Control Rod

Knowledge of the interrelations between the Inoperable / Stuck Control Rod and the following: Breakers, relays, disconnects, and control room switches.

(CFR 41.7 / 45.7)

Tier: 1
Group: 2

Importance Rating: 2.5/2.6

Technical Reference: 1-AP-1.3

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Friday, September 19, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW source if bank: NAPS
cognitive level: H difficulty level: 3
job: RO plant: NAPS
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

8. 005-K5.09 008/NEW//H/3/RO/NAPS//

Unit 1 is in Mode 6.

Technical Specifications require ONE RHR loop operable and in operation whenever water level is _____; compliance with this LCO ensures _____.

- A. greater than or equal to 23 feet above the top of the reactor vessel flange; proper mixing of RCS coolant to minimize the possibility of localized dilution.
- B. greater than or equal to 23 feet above the top of the reactor vessel flange; acceptable limits are maintained in the event of a fuel handling accident.
- C. less than 23 feet above the top of the reactor vessel flange; proper mixing of RCS coolant to minimize the possibility of localized dilution.
- D. less than 23 feet above the top of the reactor vessel flange; acceptable limits are maintained in the event of a fuel handling accident.

- a. Correct. Because of the large heat sink only one loop is required. One of the LCO functions is mixing (prevent thermal stratification).
- b. Incorrect. First part is correct. Second part is incorrect but plausible since fuel handling accident is a concern; the LCO for water level is established for the FHA however, this LCO is only for mixing and decay heat removal.
- c. Incorrect. First part is incorrect but plausible since some candidates associate the need for two loop only during fuel movement and not directly with water inventory. Second part is correct, as mixing is a function in both conditions (high or low water level)
- d. Incorrect. First part is incorrect as discussed above; second part is incorrect as discussed in distractor b.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Residual Heat Removal System (RHRS)

Knowledge of the operational implications of the following concepts as they apply the RHRS: Dilution and boration considerations
(CFR: 41.5 / 45.7)

Tier: 1
Group: 2

Importance Rating: 3.2/3.4

Technical Reference: TS 3.9.5, 3.9.6 & basis

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Wednesday, September 03, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

9. 006-A1.17 009/NEW//H/3/RO/NAPS//

Operators are responding to a LOCA and are performing Step 12 of 1-E-1, Loss of Reactor or Secondary Coolant, which directs them to "Check if Low-Head SI Pumps Should be Stopped."

The following plant conditions exist:

- One charging pump is running and no others are available to be started
- RCS pressure is 350 psig and stable
- Containment pressure is 17 psia and slowly decreasing
- RWST level is 58% and slowly decreasing

Based on these plant conditions, which ONE of the following identifies the **action required** by 1-E-1, and the **basis for the action**?

- A. Leave Low-Head SI pumps running since they are providing core cooling.
- B. Leave Low-Head SI pumps running to prepare for the transfer to Cold Leg Recirc.
- C✓ Stop Low-Head SI pumps to minimize the potential for pump and motor overheating.
- D. Stop Low-Head SI pumps to minimize the potential for contaminating the RWST.

- a. Incorrect. Plausible since the candidate who does not have detailed systems/EOP knowledge may assume the LHSI pumps are injecting and/or that under loca conditions where SI termination criteria is NOT met the pumps would not be shutdown.
- b. Incorrect. Plausible since plant conditions indicate this is imminent, however the background document states that shutting down the pumps to ensure future operability (i.e. cold leg recirc) is the correct action.
- c. Correct. Since LHSI pumps are running on recirc they are stopped to ensure they do not over heat and subsequently fail, thus resulting in a loss of cold leg recirc capability.
- d. Incorrect. Plausible since they do recirc to the RWST and this is a concern for loca scenarios.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Emergency Core Cooling System (ECCS)

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ECCS controls including: ECCS flow rate
(CFR: 41.5 / 45.5)

Tier: 2
Group: 1

Importance Rating: 4.2/4.3

Technical Reference: 1-E-1 and Background Document

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Friday, September 19, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

10. 007-A3.01 010/BANK/NAPS/L/2/RO/NAPS//

During 100% power operation, PRT in-leakage is identified as increasing.

Which ONE of the following identifies a possible source?

- A. RCP #2 seal leakoff.
- B. RCP seal return relief valve leakage.
- C. RCS loop stop valve stem leakoff.
- D. Reactor vessel head vent valve leakage.

a. Incorrect. Plausible since both the PRT and PDTT have several loads and which goes to what could easily be confused by the candidate who lacks detailed systems knowledge.

b. Correct. this component relieves to the PRT.

c. Incorrect. Plausible as discussed in Distractor a.

d. Incorrect. Plausible as discussed in Distractor a.
Pressurizer Relief Tank/Quench Tank System (PRTS)

Ability to monitor automatic operation of the PRTS, including: Components which discharge to the PRT (CFR: 41.7 / 45.5)

Tier: 2
Group: 1

Importance Rating: 2.7/2.9

Technical Reference: Lesson Plan

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Answer: B B B B B B B B B B Items Not Scrambled

Created: Wednesday, September 03, 2008

Modified: Tuesday, January 13, 2009

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

11. 008-AG2.4.30 011/MODIFIED/NAPS/L/2/RO/NAPS//

Unit 1 is at 100% power when the following events occur:

0830 An instrument malfunction results in a PORV opening. The OATC attempts to close the affected PORV, but it remains full open. The OATC attempts to close the associated PORV block valve, but the PORV block valve breaker trips as soon as the switch is taken to CLOSE. The OATC manually trips the Unit and the crew enters 1-E-0, Reactor trip or Safety Injection.

0845 The Shift Manager classifies the event in accordance with EPIP-1.01, Emergency Manager Controlling Procedure.

Based on reporting requirements, the **latest** time that state and local authorities must be notified is _____, and the **latest** time that the NRC must be notified is _____.

- A✓ 0900 ; 0945
- B. 0900 ; 1000
- C. 0930 ; 0930
- D. 0930 ; 1030

- a. Correct. State must be notified within 15 minutes and NRC notification as required as soon as possible after state notification and in all cases within 1 hour if the event DECLARATION.
- b. Incorrect. Candidate who does not have detailed knowledge of reporting requirements could easily misconstrue that NRC notification is ONE hour AFTER state notification, vice one hour after event declaration.
- c. Incorrect. Candidate who does not have detailed knowledge of reporting requirements could easily misconstrue that both parties need to be notified within one hour of the event.
- d. Incorrect. Candidate who does not have detailed knowledge of reporting requirements could easily misconstrue that state notification is within ONE hour AFTER the event, and again that the NRC must be notified within an hour after the state notification is complete.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Pressurizer Vapor Space Accident

Knowledge of events related to system operation/status that must be reported to internal organizations or external agencies, such as the State, the NRC, or the transmission system operator.
(CFR: 41.10 / 43.5 / 45.11)

Tier: 1
Group: 1

Importance Rating: 2.7/4.1

Technical Reference: EPIP-1.01 and VPAP-2802

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: modified

additional info:

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

Created: Tuesday, September 02, 2008

Modified: Friday, December 05, 2008

Revised:

source: MODIFIED source if bank: NAPS
cognitive level: L difficulty level: 2
job: RO plant: NAPS
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

12. 008-G2.1.27 012/BANK/NAPS/L/2/RO/NAPS//

One of the purposes of the CC System is to cool the unit from _____ to 140°F within _____ assuming a Service Water Temperature of 95°F.

- A. 350°F ; 16 hours
- B. 350°F ; 24 hours
- C. 547°F ; 16 hours
- D. 547°F ; 24 hours

- a. Correct. this is identified in the lesson plan and the safety analysis section of the Tech Spec Basis.
 - b. Incorrect. Temperature is correct; time is incorrect but plausible since this is consistent with Tech Spec requirements for getting to Mode 5 and the candidate who does not have detailed knowledge of the system may default to this Distractor.
 - c. Incorrect. Temperature is incorrect but plausible since the candidate may perceive that since the CC system is required by TS in mode 4 and above and a SGTR accident would likely occur in mode 1 that this would be a logical performance requirement; time is correct, but again it is for starting at 350 not 547.
 - d. Incorrect. First part incorrect but plausible as discussed above; time requirement incorrect but plausible as discussed in distractor b.
- Component Cooling Water

Knowledge of system purpose and/or function.
(CFR: 41.7)

Tier: 2
Group: 1
Importance Rating: 3.9/4.0

Technical Reference: lesson plan and TS Basis

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: Bank

additional info:

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

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Thursday, August 28, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

13. 009-EK1.02 013/MODIFIED/NAPS/H/3/RO/NAPS//

Unit 1 was operating at 100% power when a LOCA occurred inside containment.

The following plant conditions exist:

- The crew is currently implementing 1-E-0, Reactor Trip or Safety Injection
- Containment pressure is 21 psia and stable
- Containment pressure peaked at 25 psia
- Core Exit TCs indicate 510°F
- RCS pressure is 1100 psig.
- Total high-head safety injection flow to the core is 500 gpm

Based on these plant conditions, the Reactor Coolant Pumps should _____.

- A. not be secured
- B. be secured because RCS pressure is less than 1275 psig
- C✓ be secured due to low subcooling
- D. be secured due to loss of component cooling flow

- a. Incorrect. Plausible since this would be correct if not for adverse containment conditions.
- b. Incorrect. Plausible as low RCS pressure is one component of subcooling, however this is part of Charging pump recirc criteria (which also checks if RCPs are secured), NOT RCP trip criteria.
- c. Correct. RCS subcooling is ~50 degrees F which is above the normal setpoint but less than the adverse setpoint so the action is required based on plant conditions.
- d. Incorrect but plausible under LOCA conditions, however since CNTMT pressure peaked at 25 psia CDA is NOT actuated (28 psia setpoint) so CC flow would still be available to the RCPs.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Small Break LOCA

Knowledge of the operational implications of the following concepts as they apply to the small break

LOCA: Use of steam tables

(CFR 41.8 / 41.10 / 45.3)

Tier: 1

Group: 1

Importance Rating: 3.5/4.2

Technical Reference: 1-E-0

Proposed references to be provided to applicants during examination: Steam Tables

Learning Objective:

Question History: New

additional info:

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

Answer: C C C C C C C C C C Items Not Scrambled

Created: Thursday, August 28, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED

source if bank: NAPS

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

14. 010-K5.01 014/NEW//H/3/RO/NAPS//

Operators are stabilizing the plant following a reactor trip due to a loss of offsite power.

The following plant conditions exist:

- RCS temperature is 551°F and stable.
- PRZR pressure is 2100 psig and stable with one group of heaters energized.
- PRZR liquid temperature is 600°F and stable.
- Charging flow is 40 gpm and constant with 1-CH-FCV-1122 in MANUAL.
- Seal injection flows are 8 gpm each.
- Seal leakoff flows are 3 gpm each.

PRZR level increased to 35%; the crew has just placed 1-CH-HCV-1200B in service and letdown flow indicates 73 gpm.

Which ONE of the following describes the plant response?

- A. PRZR level will remain stable;
PRZR pressure will remain stable
- B. PRZR level will decrease;
PRZR pressure will remain stable
- C. PRZR level will remain stable;
PRZR pressure will decrease
- D✓ PRZR level will decrease;
PRZR pressure will decrease

- a. Incorrect. Second part plausible if candidate bases pressure response on vapor temperature or concludes that level is constant and pressure will be held up because of that; first part plausible if flow balance not correctly determined.
- b. Incorrect. Second part plausible if candidate bases pressure response on vapor temperature; first part correct flow balance given means there is an 18 gpm mismatch so level will decrease.
- c. Incorrect. Second part is correct; first part plausible if flow balance not correctly determined.
- d. Correct. Second part is correct, as level decreases due to charging letdown mis-match pressure will approach saturation pressure for PRZR liquid temperature (decrease); first part correct flow balance given means there is an 18 gpm mismatch so level will decrease.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Pressurizer Pressure Control System (PZR PCS)

Knowledge of the operational implications of the following concepts as they apply to the PZR PCS:
Determination of condition of fluid in PZR, using steam tables
(CFR: 41.5 / 45.7)

Tier: 2
Group: 1

Importance Rating: 3.5/4.0

Technical Reference: 1-ES-0.1 and background document

Proposed references to be provided to applicants during examination: Steam Tables

Learning Objective:

Question History: New

additional info: Question based on flow balance and generic EOP step "turn on PRZR heaters to saturate the PRZR".

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

Answer: DDDDDDDDDDD Items Not Scrambled

Created: Tuesday, September 09, 2008

Modified: Thursday, December 04, 2008

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

15. 012-K5.02 015/MODIFIED/NAPS/H/3/RO/NAPS//

The _____ ensures that the allowable heat generation rate (kw/ft) is not exceeded; the setpoint for this trip is _____.

- A✓ Overpower ΔT trip ; 107.9%
- B. Overpower ΔT trip ; 126.4%
- C. Power Range Neutron Flux trip - High S/P ; 109%
- D. Power Range Neutron Flux trip - High S/P ; 110%

- a. Correct. Trip is correct, second part is also correct.
- b. Incorrect. Trip is correct, second part is incorrect but plausible since this is the OT ΔT setpoint.
- c. Incorrect. Plausible since kw/ft does imply "power" but this trip is to prevent DNB as discussed in Tech Spec Bases 3.3.1, second part is correct.
- d. Incorrect. This trip is for DNB as discussed above, second part incorrect but plausible since this is the allowable value from Table 3.3.1-1 of Tech Specs.

Reactor Protection System

Knowledge of the operational implications of the following concepts as they apply to the RPS: Power density

(CFR: 41.5 / 45.7)

Tier: 2
Group: 1

Importance Rating: 3.1/3.3

Technical Reference: RPS lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Thursday, August 28, 2008

Modified: Tuesday, January 13, 2009

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: MODIFIED

source if bank: NAPS

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

16. 013-K6.01 016/MODIFIED/NAPS/H/3/RO/NAPS//

Given the following conditions:

- Unit 1 is at 100% power
- Containment Pressure Protection Channel II (1-LM-P-100B) failed on the previous shift
- All bistables for the failed channel have been placed in TEST in accordance with 1-MOP-55.75, Containment Pressure Protection Instrument

Subsequently, Containment Pressure Protection Channel III (1-LM-P-100C) fails HIGH.

Which ONE of the following identifies the response of the Engineered Safeguards Features Actuation System?

- A. No automatic actuations.
- B. Safety Injection actuation ONLY.
- C✓ Safety Injection actuation and Main Steam Line Isolation ONLY.
- D. Safety Injection actuation, Main Steam Line Isolation, and CDA.

- a. Incorrect. Plausible since Ch. I of containment pressure is ONLY used for CDA, thus if Ch. I were the failed channel vice channel II this answer would be the correct answer.
- b. Incorrect. Plausible because this will occur; only the Hi-Hi bistables are bypassed when placing a channel in test, but if candidate mistakenly assumes the intermediate hi-hi bistables are also bypassed they would conclude that this is the correct answer.
- c. Correct. 2/3 logic is made up and these functions will actuate.
- d. Incorrect. Plausible since candidate may not be aware that the hi-hi bistable is bypassed when taken to test and thus conclude that this is the correct answer.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Engineered Safety Features Actuation System (ESFAS)

Knowledge of the effect of a loss or malfunction on the following will have on the ESFAS: Sensors and detectors
(CFR: 41.7 / 45.5 to 45.8)

Tier: 2
Group: 1

Importance Rating: 2.7/3.1

Technical Reference: RPS lesson plan and MOP-56.75

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Friday, September 19, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED source if bank: NAPS
cognitive level: H difficulty level: 3
job: RO plant: NAPS
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

17. 015-A2.04 017/NEW//H/3/RO/NAPS//

Given the following conditions:

- A spurious turbine runback occurs and is terminated at 80% power
- Operators are stabilizing the unit, and annunciator A-H7, A.F.D MONITOR, has just alarmed

Which ONE of the following identifies the **MINIMUM** number of NI channels with an AFD that exceeds the allowable limits of the Reactor Data book to consider the alarm valid, and the Technical Specification **required action**?

- A. 1 NI channel;
reduce power to < 50% within 30 minutes.
- B. 1 NI channel;
reduce power to < 75% within 30 minutes.
- C. 2 NI channels;
reduce power to < 50% within 30 minutes.
- D. 2 NI channels;
reduce power to < 75% within 30 minutes.

- a. Incorrect. First part incorrect but plausible as discussed in Distractor B; second part is correct.
- b. Incorrect. Plausible since there are TS associated with a single power range channel failed, and in fact most single instrument issues/parameters out-of-spec require action; thus the candidate who is not knowledgeable of the AFD TS would likely default to this distractor, especially when considering the wording "minimum" in the stem. Second part also incorrect as discussed in Distractor D.
- c. Correct. First part is correct; action requirement (second part) is also correct.
- d. Incorrect. First part is correct; second part is incorrect but plausible since other specs (e.g. rods) have 75% power reductions as required actions.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Nuclear Instrumentation System

Ability to (a) predict the impacts of the following malfunctions or operations on the NIS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Effects on axial flux density of control rod alignment and sequencing, xenon production and decay, and boron vs. control rod reactivity changes
(CFR: 41.5 / 43.5 / 45.3 / 45.5)

Tier: 2
Group: 2

Importance Rating: 3.3/3.8

Technical Reference: AR-A-H-7

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Tuesday, September 02, 2008

Modified: Tuesday, January 20, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

18. 015-AA1.22 018/BANK/NAPS/L/3/RO/NAPS/8/22/08/

Which ONE of the following responses is **NOT** an indication that the #2 seal has failed on a Reactor Coolant Pump?

- A✓ Increasing seal injection flow.
- B. Increased level in the Primary Drains Transfer Tank.
- C. #1 seal leakoff is lower than normal.
- D. RCP Standpipe Hi level alarm lit.

- a. Correct. The inverse would be true for a excessive #2 seal leakage.
- b. Incorrect. Plausible since the candidate may not link the cause and effect relationship unless they have a detailed understanding of the RCP seals.
- c. Incorrect. Plausible since again the candidate who does not have detailed knowledge in this are may conclude that there is no relationship between this parameter and the #2 seal.
- d. Incorrect. Plausible since again the candidate without detailed knowledge may conclude that a problem would involve lack of sufficient leakoff (often a concern with the #1 seal) and if anything standpipe level would be low, and thereby default to this distractor.

Reactor Coolant Pump (RCP) Malfunctions

Ability to operate and / or monitor the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): RCP seal failure/malfunction (CFR 41.7 / 45.5 / 45.6)

Tier: 1
Group: 1

Importance Rating: 4.0/4.2

Technical Reference: 1-AP-33.1

Proposed references to be provided to applicants during examination: None

Learning Objective: U60058

Question History: Bank

additional info:

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

Created: Friday, August 22, 2008
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Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: BANK
cognitive level: L
job: RO
date: 8/22/08

source if bank: NAPS
difficulty level: 3
plant: NAPS
previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

19. 016-K3.03 019/MODIFIED/NAPS/H/3/RO/NAPS//

Given the following conditions:

- Unit 1 was initially at 100% power
- The crew started ramping the unit 10 minutes ago to perform a Turbine Valve Freedom Test
- T_{AVE} is presently 3 degrees higher than T_{REF}
- 1-MS-PT-1446, Channel III First Stage Pressure, is selected for control

Based on these plant conditions, which ONE of the following identifies how the steam dumps will respond if 1-MS-PT-1447, Channel IV First Stage Pressure fails LOW?

- A✓ Steam dumps arm but remain closed because there is insufficient demand signal.
- B. Steam dumps arm and ONLY banks 1 & 2 modulate open until T_{AVE} matches T_{REF} .
- C. Steam dumps DO NOT arm and are disabled since the T_{REF} input is failed LOW.
- D. Steam dumps arm and all valves modulate open until T_{AVE} matches T_{REF} .

- a. Correct. 447 produces an arming signal based on the load reject program, and for the given conditions the T_{avg}/T_{ref} delta is insufficient to cause actuation of the dumps in either the trip open or modulate modes.
- b. Incorrect. Plausible as dumps arm as discussed above and the candidate who does not have detailed knowledge of the load rejection program may assume that there is sufficient delta to cause them to open.
- c. Incorrect. Plausible since the other channel (446) provides the t_{ref} input; the candidate may reverse the function of the two channels and thus select this distractor.
- d. Incorrect. Plausible since all would be armed due to the magnitude of the failure and the candidate who does not understand the cause and effect relationship between the Turbine EHC controls and the dumps may erroneously conclude that this distractor is correct.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Non-Nuclear Instrumentation

Knowledge of the effect that a loss or malfunction of the NNIS will have on the following: SDS
(CFR: 41.7 / 45.6)

Tier: 2

Group: 2

Importance Rating: 3.0/3.1

Technical Reference: STeam Dump Lesson Plan

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: Modified

additional info:

MCS Time: 1 Points: 1.00

Version: 0 1 2 3 4 5 6 7 8 9

Answer: A A A A A A A A A A

Items Not Scrambled

Created: Thursday, August 28, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED

source if bank: NAPS

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

20. 017-K5.01 020/NEW//L3/RO/NAPS//

10 CFR 50.46, ECCS Acceptance Criteria, states that the ECCS is designed to ensure peak cladding temperature is maintained less than or equal to _____ during a Large Break LOCA; The CETC temperature that is used to monitor the Core Cooling CSF Status tree is _____.

- A. 1200°F;
the average temperature of ALL CETCs in that ICCM train.
- B. 1200°F;
the average temperature of the five highest CETCs in that ICCM train.
- C. 2200°F;
the average temperature of ALL CETCs in that ICCM train.
- D✓ 2200°F;
the average temperature of the five highest CETCs in that ICCM train.

- a. Incorrect. Plausible since this is the transition to FR-C.1; second part also plausible since the candidate who does not have detailed knowledge might assume the using an average would be more representative and default to this distractor.
- b. Incorrect. Plausible since this is the transition to FR-C.1; second part is correct the ICCM algorithm performs this function to meet design requirements.
- c. Incorrect. First part is correct this ECCS acceptance criteria; second part plausible as discussed in distractor a.
- d. Correct. This is the ECCS acceptance criteria as discussed in the safety analysis section of the TS Basis; second part also correct as discussed in distractor b.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

In-Core Temperature Monitor System (ITM)

Knowledge of the operational implications of the following concepts as they apply to the ITM system:
Temperature at which cladding and fuel melt
(CFR: 41.5 / 45.7)

Tier: 2
Group: 2

Importance Rating: 3.1/3.9

Technical Reference: ITM lesson plan and TS Basis/10 CFR 50.46 acceptance criteria

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Tuesday, September 23, 2008

Modified: Thursday, December 04, 2008

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

21. 022-AK1.01 021/MODIFIED/NAPS/L/2/RO/NAPS//

1-ECA-0.0, Loss of All AC Power, Attachment 4 (Attempting to Restore Power to 1H [1J] Emergency Bus) directs the crew to place all charging pumps in Pull-To-Lock if RCP _____ temperature exceeds 235°F; this action is taken to _____ .

- A. ✓ Seal Water Outlet;
prevent damage to the RCP seal package
- B. Seal Water Outlet;
prevent damage to the thermal barrier heat exchanger
- C. Pump Radial Bearing;
prevent damage to the RCP seal package
- D. Pump Radial Bearing;
prevent damage to the thermal barrier heat exchanger

- a. Correct. This parameter is used in determining when seal cooling CANNOT be reestablished. The concern (thermal shock to seal package) for exasperating seal leakage is also correct.
- b. Incorrect. This parameter is used in determining when seal cooling CANNOT be reestablished. The concern is not correct but is plausible since there is discussion in the background document regarding steam forming in CC system, etc.
- c. Incorrect. This parameter is NOT used in determining when seal cooling CANNOT be reestablished, but is plausible since pump radial bearing will increase since all seal cooling is lost in this scenario. The concern (thermal shock to seal package) for exasperating seal leakage is correct.
- d. Incorrect. This parameter is NOT used in determining when seal cooling CANNOT be reestablished, but is plausible since pump radial bearing will increase since all seal cooling is lost in this scenario. The concern is not correct but is plausible since there is discussion in the background document regarding steam forming in CC system, etc.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Reactor Coolant Makeup

Knowledge of the operational implications of the following concepts as they apply to Loss of Reactor Coolant Makeup: Consequences of thermal shock to RCP seals (CFR 41.8 / 41.10 / 45.3)

Tier: 1
Group: 1

Importance Rating: 2.8/3.2

Technical Reference: ECA-0.0 and background document

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: modified

additional info:

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

Created: Tuesday, September 02, 2008

Modified: Wednesday, December 03, 2008

Revised:

source:	MODIFIED	source if bank:	NAPS
cognitive level:	L	difficulty level:	2
job:	RO	plant:	NAPS
date:		previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

22. 022-K4.03 022/NEW//H/3/RO//

Given the following conditions:

- The crew has tripped Unit 1 and initiated Safety Injection due to a loss of RCS inventory
- Conditions continue to degrade and CDA automatically actuates

Based on the above conditions, which ONE of the following identifies the automatic response of the Containment Cooling System?

- A. CARFs tripped when Safety Injection was initiated;
Cooling water to CARFs isolated when Safety Injection was initiated.
- B. CARFs tripped when CDA actuated;
Cooling water to CARFs isolated when Safety Injection was initiated.
- C. CARFs tripped when Safety Injection was initiated;
Cooling water to CARFs isolated when CDA actuated.
- D.** CARFs tripped when CDA actuated;
Cooling water to CARFs isolated when CDA actuated.

- a. Incorrect. Plausible since neither the CARFs nor the CRDM fans are needed for accident mitigation.
- b. Incorrect. Plausible since the candidate may mistakenly assume that cooling water to CARFs are phase A valves, these are in fact Phase B valves that will remain open until CDA.
- c. Incorrect. Plausible since as noted above CARFs are not needed for accident mitigation, additionally they trip on UV/DV on their associated emergency bus and candidate may conclude that under SI conditions the CARFs would be tripped; cooling water isolation is correct.
- d. Correct. Actuation of CDA will result in CARFs tripping and cooling water isolation.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Containment Cooling System (CCS)

Knowledge of CCS design feature(s) and/or interlock(s) which provide for the following: Automatic containment isolation
(CFR: 41.7)

Tier: 2
Group: 1

Importance Rating: 3.6/4.0

Technical Reference: RPS lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: modified

additional info:

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

Created: Friday, September 19, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

23. 024-AA1.10 023/NEW//H/4/RO///

Given the following conditions:

- Following a reactor trip, Unit 1 was stabilized with all parameters on program and stable
- The crew initiated emergency boration in accordance with 1-ES-0.1, Reactor Trip Response

With 1-CH-P-1B initially in service, a loss of off-site power occurs.

Following the loss of offsite power, the OATC notes the following:

- 1-CH-P-1A breaker closed with 75 amps indicated
- 1-CH-P-1B breaker closed with 10 amps indicated
- 1-CH-P-1C secured
- Annunciator C-G6, RCP 1A-B-C LABYTH SEAL LO FLOW, is lit
- Annunciator C-C5, CHG PP TO REGEN HX HI-LO FLOW, is lit
- Annunciator C-A7, CHG PP 1C 15H7 LOCKOUT, is lit
- PRZR level 20% and **slowly decreasing**
- VCT level 44% and **slowly increasing**

Which ONE of the following identifies the **cause of these conditions**, and the **procedure that should be implemented** to correct these conditions?

- A. Discharge check valve failure on 1-CH-P-1B;
1-AP-49, Loss of Normal Charging.
- B. Charging line rupture upstream of 1-CH-FCV-1122;
1-AP-16, Excessive RCS Leakage.
- C. Alarms are consistent with the loss of offsite power;
0-AP-10, Loss of Electrical Power.
- D. Rupture of RCP seal injection line upstream of 1-CH-HCV-1186;
1-AP-33.2, Loss of RCP Seal Cooling.

QUESTIONS REPORT
for NAPS 2009 NRC RO RE-TAKE exam final submittal

- a. Correct. High amps on 'A' chg pp with low amps on 'B' chg pp indicate 'B' chg pp has a sheared shaft and its associated discharge check has failed to close; AP-49 contains the steps necessary to isolate the failed chg pp and restore normal chg.
- b. Incorrect. Plausible since the candidate may key on the flow indications and not properly evaluate other indications which are not consistent with a leak.
- c. Incorrect. Plausible since the candidate may conclude that the electrical transient precipitated this event, that in itself is not unreasonable, implementing AP-10 (which would be done as a result of the loss of offsite power), will not correct the condition as specified in the question stem.
- d. Incorrect. Plausible since again the candidate may focus on the reduction or loss of seal injection and assume that AP-33.2 would need to be implemented, however once again AP-33.2 will not correct the problem with 'B' chg pp and its associated discharge check valve.

Emergency Boration

Ability to operate and / or monitor the following as they apply to Emergency Boration: CVCS centrifugal charging pumps
(CFR 41.7 / 45.5 / 45.6)

Tier: 1
Group: 2

Importance Rating: 3.5/3.4

Technical Reference: 1-Ap-49

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

additional info:

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

Created: Friday, September 26, 2008

Modified: Friday, January 16, 2009

Revised:

source:	NEW	source if bank:	
cognitive level:	H	difficulty level:	4
job:	RO	plant:	
date:		previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

24. 025-AK1.01 024/BANK/NAPS/H/3/RO/NAPS//

Following successful completion of maintenance, Unit 1 is exiting an outage that began 4 days ago.

Given the following conditions:

- The RCS is solid
- RCS temperature is 256°F and stable
- RCS pressure is 300 psig and stable
- RHR is in service

A loss of ALL instrument air (**inside and outside containment**) occurs, and the crew entered 1-AP-28, Loss of Instrument Air, but was unable to restore a source of air.

Which ONE of the following identifies the **RCS temperature response**, and the **action required** by 1-AP-28 assuming the crew is unable to restore IA pressure?

- A✓ RCS temperature will increase;
open RHR H/X CC Outlet Isolation Valves 1-CC-TV-103A & -103B locally.
- B. RCS temperature will decrease;
open RHR H/X CC Outlet Isolation Valves 1-CC-TV-103A & -103B locally.
- C. RCS temperature will increase;
adjust RHR Heat Exchanger Return Valves 1-CC-MOV-100A & -100B.
- D. RCS temperature will decrease;
adjust RHR Heat Exchanger Return Valves 1-CC-MOV-100A & -100B.

- a. Correct. AP-28 has specific action to locally restore CC to RHR HXs if air cannot be restored, based on the information provided this action is necessary to restore RHR cooling.
- b. Incorrect. Plausible since the candidate who does not have detailed systems and integrated plant knowledge may conclude that since RHR flow control valve will fail open that would cause the temperature to decrease and default to this distractor. Second part is correct as discussed above.
- c. Incorrect. Plausible temperature will increase and normally these valve can be used to control temperature but would not be effective since the CC-TVs will be closed based on the information (Loss of all air) provided in the stem. Several valves at NAPS have backup seismic air flasks a common misconception would be to assume these valves because of their importance are so equipped, this however is not the case.
- d. Incorrect. First part incorrect but plausible as discussed above since the failure mode that would assure cooling would seem logical; second part also incorrect but plausible as discussed above.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Residual Heat Removal System (RHRS)

Knowledge of the operational implications of the following concepts as they apply to Loss of Residual Heat Removal System: Loss of RHRS during all modes of operation (CFR 41.8 / 41.10 / 45.3)

Tier: 1
Group: 1

Importance Rating: 3.9/4.3

Technical Reference: 1-AP-11 and 1-AP-28

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Thursday, August 28, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK source if bank: NAPS
cognitive level: H difficulty level: 3
job: RO plant: NAPS
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

25. 026-AA2.04 025/NEW//L/2/RO///

Unit 1 is at 100% power and a loss of ALL CC flow has occurred.

In accordance with 1-AP-15, Loss of Component Cooling, the reactor shall be tripped and affected RCPs stopped if RCP _____ rises to 195°F.

- A✓ Motor Bearing temperature
- B. Pump Radial Bearing temperature
- C. Stator Winding temperature
- D. Seal Water Outlet temperature

- a. Correct. This is the RNO for temperature < 195°F, thus if temperature increases to the given value the action is required.
- b. Incorrect. Plausible since this component is monitored by 1-AP-15 but the threshold for action is 225°F.
- c. Incorrect. Plausible since this component is monitored by 1-AP-15 but the threshold for action is 300°F.
- d. Incorrect. Plausible since although not specifically looked at by 1-AP-15 it is monitored in other APs related to RCP cooling and there is a PCS alarm point associated with this parameter.

Loss of Component Cooling Water (CCW)

Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water:
The normal values and upper limits for the temperatures of the components cooled by CCW
(CFR: 43.5 / 45.13)

Tier: 1
Group: 1

Importance Rating: 2.5/2.9

Technical Reference: 1-AP-15

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: A A A A A A A A A A

Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Wednesday, August 27, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 2

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

26. 026-K2.01 026/MODIFIED/2006-01 AUDIT/L/2/RO/NAPS/8/20/2008/

Given the following conditions:

- A large-break LOCA occurred with Unit 1 initially at 100% power
- A loss of offsite power occurs
- All equipment functioned as designed EXCEPT that 1J1, 480-Volt Emergency Bus in Rod Drive, deenergized due to an electrical fault

Based on these plant conditions, which ONE of the following identifies the Quench Spray and Recirc Spray pumps that have power available?

- A. BOTH Quench Spray pumps and ONLY three Recirc Spray pumps.
- B. ONLY one Quench Spray pump and ONLY three Recirc Spray pumps.
- C. BOTH Quench Spray pumps and ONLY two Recirc Spray pumps.
- D. ONLY one Quench Spray pump and ONLY two Recirc Spray pumps.

- a. Incorrect. The QS pumps are power from 480v swgr so only one will be operating; plausible is candidate assumes they are 4160v loads.
- b. Correct. 2 of the six subject pumps (one of the QS pumps and 1 of the ISRS pumps) are powered from this swgr. Thus 1 QS pump and 3 of th RS pumps have power available.
- c. Incorrect. First part plausible as described in Distractor A; second part plausible since there are 2 RS pumps on each emergency train.
- d. Incorrect. First part is correct; second part plausible since there are 2 RS pumps on each emergency train.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal
Containment Spray System (CSS)

Knowledge of bus power supplies to the following: Containment spray pumps
(CFR: 41.7)

Tier: 2
Group: 1

Importance Rating: 3.4/3.6

Technical Reference: 1-OP-26A

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Wednesday, August 20, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED source if bank: 2006-01 AUDIT
cognitive level: L difficulty level: 2
job: RO plant: NAPS
date: 8/20/2008 previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

27. 026-K3.02 027/NEW//L/3/RO/NAPS//

Given the following conditions:

- A large-break LOCA occurred with Unit 1 initially at 100% power
- All equipment functions as designed EXCEPT that 1-QS-P-1A, "A" Quench Spray Pump, shaft shears on startup

Based on this malfunction, which ONE of the following describes the impact on the Quench Spray System, and on the Recirculation Spray System?

- A✓ ONLY ONE QS Spray Ring will receive flow;
ONLY ONE Inside Recirc Spray Pump sump will receive design flow from Quench Spray.
- B. ONLY ONE QS Spray Ring will receive flow;
BOTH Inside Recirc Spray Pump sumps will receive design flow from Quench Spray.
- C. BOTH QS Spray Rings will receive flow;
ONLY ONE Inside Recirc Spray Pump sump will receive design flow from Quench Spray.
- D. BOTH QS Spray Rings will receive flow;
BOTH Inside Recirc Spray Pump sumps will receive design flow from Quench Spray.

- a. Correct. Each train consists of a QS pump and dedicated spray ring header, each QS pump is also dedicated to its associated train recirc sump.
- b. Incorrect. First part is correct as discussed in Distractor A; second part is incorrect, each QS sump is dedicated to its associated train recirc sump, but the candidate who lacks detailed system knowledge may assume that it would be logical to flow to both sumps since flowrate is only a fraction if the QS pump capacity.
- c. Incorrect. First part incorrect but plausible since candidate may confuse QS ring capacity with RS ring capacity and conclude to both rings need to flow in order to provide proper spray pattern and provide 100% capacity. Second part incorrect but plausible as discussed in distractor B.
- d. Incorrect. First part incorrect but plausible as discussed above; second part also incorrect but plausible as discussed above.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal
Containment Spray System (CSS)

Knowledge of the effect that a loss or malfunction of the CSS will have on the following: Recirculation
spray system
(CFR: 41.7 / 45.6)

Tier: 2
Group: 1

Importance Rating: 4.2/4.3

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Wednesday, August 27, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

28. 027-A4.01 028/MODIFIED/NAPS/L/2/RO/NAPS//

Which ONE of the following describes the automatic operation of 1-QS-MOV-102A, Chemical Addition Tank outlet valve?

- A. 1-QS-MOV-102A will open **immediately** provided BOTH the "A" Quench Spray Pump breaker is closed AND CDA is actuated.
- B. 1-QS-MOV-102A will open **immediately** provided EITHER the "A" Quench Spray Pump breaker is closed OR CDA is actuated.
- C. 1-QS-MOV-102A will open **after a 5-minute time delay** provided BOTH the "A" Quench Spray Pump breaker is closed AND CDA is actuated.
- D. 1-QS-MOV-102A will open **after a 5-minute time delay** provided EITHER the "A" Quench Spray Pump breaker is closed OR CDA is actuated.

- a. Incorrect. Plausible since candidate may assume that it would only be needed under CDA conditions and would require a QS pump running to inject into containment. Candidate may not be aware of the purpose of the time delay.
- b. Incorrect. Plausible since candidate may not be aware of the purpose of the time delay. Second part for opening logic is correct.
- c. Incorrect. Time delay to prevent undesired Naoh injection is correct but opening logic is incorrect as discussed above.
- d. Correct. Time delay to prevent undesired Naoh injection is correct and opening logic is correct.

Containment Iodine Removal System (CIRS)

Ability to manually operate and/or monitor in the control room: CIRS controls (CFR: 41.7 / 45.5 to 45.8)

Tier: 2
Group: 2

Importance Rating: 3.3/3.3

Technical Reference: 1-E-O Att. 2 and lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective: U5955

Question History: modified from uid 270

additional info:

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

Answer: DDDDDDDDDDD Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Wednesday, September 10, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: MODIFIED

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

29. 027-AK3.02 029/NEW//H/3/RO/NAPS//

Unit 1 is at 100% power.

The OATC notes that all PRZR heaters are energized, and RCS pressure is 2270 psig and rising.

Based on these plant conditions, which ONE of the following identifies the **failed channel** and includes the **plant response** if no operator action is taken?

- A. 1-RC-PT-1444 failed low;
1-RC-PCV-1455C will cycle open and closed
- B✓** 1-RC-PT-1444 failed low;
1-RC-PCV-1456 will cycle open and closed
- C. 1-RC-PT-1445 failed low;
1-RC-PCV-1456 will cycle open and closed
- D. 1-RC-PT-1445 failed low;
1-RC-PCV-1455C will cycle open and closed

- a. Correct transmitter but incorrect because the PORV is the one associated with the failed channel and it will not respond.
- b. Correct transmitter and since this channel also controls the PRZR spray valves not actions will occur until pressure reaches 2335 psig as seen by the opposite control channel at which time PORV-1456 will cycle to limit the pressure rise.
- c. Incorrect transmitter, plausible since candidate must know the features of both of the control channels to positively identify the answer and eliminate distractors; PORV is correct.
- d. Plausible as discussed in distractor C; also incorrect PORV.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Pressurizer Pressure Control System (PZR PCS) Malfunction

Knowledge of the reasons for the following responses as they apply to the Pressurizer Pressure Control Malfunctions: Verification of alternate transmitter and/or plant computer prior to shifting flow chart transmitters

(CFR 41.5,41.10 / 45.6 / 45.13)

Tier: 1

Group: 1

Importance Rating: 2.9/3.0

Technical Reference: 1-AP-44

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Wednesday, August 27, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

30. 028-G2.2.44 030/NEW//H/3/RO/NAPS//

Given the following conditions:

- Unit 1 is at 100% power
- The Pressurizer Level Channel Defeat Switch is selected to position 461/460
- Annunciator B-G7, PRZ LO LEV HTRS OFF LETDOWN ISOL, alarms

The OATC notes the following:

- PRZR level is 66% and slowly increasing
- Demand on 1-RC-LC-1459G, PRZR Level Controller, is approximately 35% and slowly decreasing

Based on these plant conditions, which ONE of the following identifies the **failed instrument**, and the **Immediate Operator Action** required by 1-AP-3, Loss of Vital Instrumentation?

- A. ✓ 1-RC-LI-1460 is failed low;
Place 1-CH-FCV-1122, Charging Flow Control valve, in MANUAL and control level at program.
- B. 1-RC-LI-1460 is failed low;
Place Pressurizer Level Channel Defeat Switch in position 459/461, then verify Annunciator B-G7, PRZ LO LEV HTRS OFF LETDOWN ISOL, clears.
- C. 1-RC-LI-1461 is failed low;
Place 1-CH-FCV-1122, Charging Flow Control valve, in MANUAL and control level at program.
- D. 1-RC-LI-1461 is failed low;
Place Pressurizer Level Channel Defeat Switch in position 459/460, then verify Annunciator B-G7, PRZ LO LEV HTRS OFF LETDOWN ISOL, clears.

- a. Correct. If the controlling channel failed low then the master controller output would increase to 100%, it would not be throttling back as indicated; second part is the correct IOA (this is a resent change to the procedure to add this as an IOA).
- b. Incorrect. Channel is correct as noted above; second part is incorrect, but plausible as this is a subsequent action of the procedure and ultimately required to correct the condition.
- c. Incorrect. Channel is incorrect but plausible since if the candidate does not have detailed systems knowledge they could easily confuse which channel controls and may not be aware of the expected master controller response; second part is correct as discussed in Distractor a.
- d. Incorrect. Both parts incorrect but plausible as discussed in Distractors b & c.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Pressurizer (PZR) Level Control Malfunction

Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.
(CFR: 41.5 / 43.5 / 45.12)

Tier: 1
Group: 2

Importance Rating: 4.2/4.4

Technical Reference: 1-AP-3 and PRZR level control lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info: Resent change to procedure 1-AP-3

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Friday, September 19, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

31. 029-A1.03 031/BANK/NAPS/H/2/RO/NAPS//

Unit 1 is in Mode 6 with core off-load in progress.

A containment purge exhaust fan is started by the Backboards Operator. As a result of this action, reactor cavity level will _____ and spent fuel pit level will _____.

- A✓ increase slightly; decrease slightly
- B. increase slightly; not be affected
- C. not be affected; not be affected
- D. decrease slightly; increase slightly

- a. Correct. Starting the purge fan would lower pressure slightly and thus allow water to sluice from the SFP to the cavity via the canal, the candidate must have detailed knowledge of the procedure and/or refueling process.
- b. Incorrect. Plausible since the candidate who does not have detailed systems knowledge may conclude that this would affect level via a source such as cavity purification system and since it is in containment would not relate it back to the SFP.
- c. Incorrect. Plausible since the candidate may conclude that a fan would not be significant enough to cause a change in level.
- d. Incorrect. Plausible if the candidate reverses the cause and effect relationship this distractor would make sense.

Containment Purge System (CPS)

Ability to predict and/or monitor changes in parameters associated with operating the Containment Purge System controls including: Containment pressure, temperature, and humidity (CFR: 41.5 / 45.5)

Tier: 2
Group: 2

Importance Rating: 3.0/3.3

Technical Reference: 1-OP-21.2

Proposed references to be provided to applicants during examination: None

Learning Objective: 50739 Effects of ventilation on pool levels

Question History: bank

additional info:

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

Answer: A A A A A A A A A A

Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Thursday, August 28, 2008

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Revised:

source: BANK

source if bank: NAPS

cognitive level: H

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

32. 029-EK2.06 032/MODIFIED/L/2/RO/NAPS/8/20/2008/

Which ONE of the following describes the actions required by 2-FR-S.1, Response to Nuclear Power Generation/ATWS, Attachment 4 (Remote Reactor Trip) if attempts to locally trip the reactor from the Rod Drive room are unsuccessful?

- A. De-energize BOTH 2A1 and 2C2 480-Volt Station Service Busses by opening their respective supply breakers.
- B. De-energize BOTH 2A1 and 2B2 480-Volt Station Service Busses by opening their respective supply breakers.
- C. Open BOTH Rod Drive M-G Set Motor Supply Breakers locally at the 2A1 and 2C2 480-Volt Station Service Busses.
- D. Open BOTH Rod Drive M-G Set Motor Supply Breakers locally at the 2A1 and 2B2 480-Volt Station Service Busses.

- a. Incorrect. This will trip the reactor but is NOT IAW the attachment; the candidate who is not knowledgeable of the attachment may default to this distractor.
- b. Incorrect. Plausible as discussed in Distractor A; also these busses are the power supplies on Unit 1 (knowledge of Unit differences is also required to answer this test item).
- c. Correct. Action and location (power supply) are both correct.
- d. Incorrect. Action is correct but locations wrong for Unit 2 as noted above.

Anticipated Transient Without Scram (ATWS)

Knowledge of the interrelations between the and the following an ATWS: Breakers, relays, and disconnects
(CFR 41.7 / 45.7)

Tier: 1
Group: 1

Importance Rating: 2.9/3.1

Technical Reference: 2-FR-S.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info: this question also qualifies as a Unit differences topic for dual unit license

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

Answer: C C C C C C C C C C Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Wednesday, August 20, 2008

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source: MODIFIED

source if bank:

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date: 8/20/2008

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

33. 032-AK3.02 033/BANK/NAPS/L/3/RO/NAPS//

Unit 1 tripped from 100% power 22 minutes ago.

The following plant conditions exist:

- Intermediate Range Channel N-35 indicates 8×10^{-10} amps and stable.
- Intermediate Range Channel N-36 indicates 1×10^{-11} amps and stable.
- High voltage is de-energized on BOTH Source Range Channels N-31 & N-32.

1-ES-0.1, Reactor Trip Response, is in effect and the crew is at the step, "Check If Source Range Detectors Should Be Energized."

Based on these plant conditions, which ONE of the following identifies the **malfunction** that has occurred, and the **action required** by 1-ES-0.1?

- A✓ N-35 is **under-compensated**;
Manually energize Source Range Detectors using the Source Range Block and Reset switches.
- B. N-35 is **over-compensated**;
Manually energize Source Range Detectors using the Source Range Block and Reset switches.
- C. N-35 is **over-compensated**;
Energize Source Range Detectors by bypassing N-35 and removing the instrument power fuses.
- D. N-35 is **under-compensated**;
Energize Source Range Detectors by bypassing N-35 and removing the instrument power fuses.

- a. Correct. N-35 exhibits characteristics of being under-compensated; the action provided is correct based on plant conditions and the time from reactor trip.
- b. Incorrect. Plausible since candidate may have a misconception regarding the effect/purpose of compensating voltage; second part is correct.
- c. Incorrect. Plausible AP-4.2, Loss of intermediate range contains this action but again it is not for this stated purpose and not per ES-0.1 as asked by the question..
- d. Incorrect. First part correct as discussed above; second part plausible if candidate is unaware of the method employed by ES-0.1 to restore source range monitoring.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Source Range Nuclear Instrumentation

Knowledge of the reasons for the following responses as they apply to the Loss of Source Range Nuclear Instrumentation: Guidance contained in EOP for loss of source-range nuclear instrumentation (CFR 41.5,41.10 / 45.6 / 45.13)

Tier: 1
Group: 2

Importance Rating: 3.7/4.1

Technical Reference: 1-ES-0.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: Bank

Associated objective(s):

Explain the following concepts concerning the restoration of source-range nuclear instrumentation (SRNI) in 1-ES-0.1, "Reactor Trip Response."

Two conditions indicating SRNIs should be restored following a reactor trip

How SRNIs should be restored manually

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Friday, August 22, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

34. 034-K6.02 034/NEW//H/3/RO//

Core on-load has commenced and Containment Purge is in service on Unit 1.

1-RM-RMS-159, Containment Particulate Radiation Monitor, has just pegged high due to a malfunction of the monitor.

Which ONE of the following identifies the **automatic actuations** that will occur, and the **impacts of this failure on fuel movement** IAW 1-OP-4.1, Controlling Procedure for Refueling?

- A✓ ONLY Containment Purge Isolation;
OPS Manager approval is required to resume fuel movement.
- B. Containment Purge Isolation AND Control Room Bottle Air Dump;
OPS Manager approval is required to resume fuel movement.
- C. ONLY Containment Purge Isolation;
Fuel movement may continue without any additional approvals.
- D. Containment Purge Isolation AND Control Room Bottle Air Dump;
Fuel movement may continue without any additional approvals.

- a. Correct. Pegging high causes a Hi-HI alarm resulting in automatic Containment Ventilation Isolation, but control room bottled air does not automatically dump; second part is correct per 1-OP-4.1, Controlling Procedure for Refueling.
- b. Incorrect. Plausible since other monitors related to fuel movement (e.g. fuel pool bridge crane monitor) do initiate bottled air dump; second part is correct.
- c. Incorrect. First part is correct as discussed in Distractor a; second part is incorrect but plausible since FSRC in an approval per defense-in-depth of 1-OP-4.1, but only if the subject monitor and two other monitors have are failed are unavailable.
- d. Incorrect. First part is incorrect but plausible as discussed in Distractor b; second part is incorrect but plausible as discussed in Distractor c.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Fuel Handling Equipment System (FHES)

Knowledge of the effect of a loss or malfunction on the following will have on the Fuel Handling System :
Radiation monitoring systems
(CFR: 41.7 / 45.7)

Tier: 2
Group: 2

Importance Rating: 2.6/3.3

Technical Reference: 1-OP-4.1, 1-AP-5 Att. 5

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

Additional Info:

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, October 01, 2008

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source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

35. 035-A3.02 035/NEW//H/3/RO///

The SG PORV controllers (1-MS-PCV-101A, B, & C) are designed to control RCS T_{AVE} at approximately _____; this is achieved by a controller **pot setting** of approximately _____.

- A✓ 551°F ; 5.5
- B. 551°F ; 7.0
- C. 556°F ; 5.5
- D. 556°F ; 7.0

- a. Correct. this is the temperature corresponding to 1050 psig, the pot setpoint of 5.5 based on the instrument scaling (500-1500 psig) provides this pressure.
- b. Incorrect. First part is correct. Second part incorrect but plausible since the candidate who is not familiar with the scaling or normal operating setting may assume a scaling of 0-1500psig and in that case a setting of 7.0 would correlate to 1050 psig.
- c. Incorrect. First part incorrect but plausible since candidate may not properly correlate the pressure control point for the SG with RCS temperature, pot setting is correct.
- d. Incorrect. Both parts incorrect but plausible as discussed in Distractors B & C.

Steam Generator System (S/GS)

Ability to monitor automatic operation of the S/G including: MAD valves
(CFR: 41.7 / 45.5)

Tier: 2
Group: 2

Importance Rating: 3.7/3.5

Technical Reference: 1-ES-0.1 and 1-GOP-1.0 CRO turnover

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

Additional Info: NAPS does not have MAD valves per se; discussed with USNRC via telcon on 9/4/2008 based on NAPS SG PORVs providing an equivalent function of MAD valves the intent of the KA is met with this question.

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

Answer: A A A A A A A A A A Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Thursday, September 04, 2008

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source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

36. 039-A2.04 036/MODIFIED/NAPS/H/3/RO/NAPS//

Given the following conditions:

- Unit 1 generator output breaker G-12 has just been closed following a reactor startup
- All control systems are aligned per startup procedures
- "A" train of steam dumps is isolated to repair 1-MS-TCV-1408A, which is de-energized and tagged out
- Main steam line pressure transmitter 1-MS-PT-1464 fails HIGH

Which ONE of the following identifies the **RCS temperature response**, and the **required action**?

- A. RCS temperature increases;
Manually insert rods to match T_{AVE} and T_{REF} .
- B. RCS temperature increases;
Verify rods automatically insert to match T_{AVE} and T_{REF} .
- C. RCS temperature decreases;
Close all MSTVs using Appendix R Switch.
- D. RCS temperature decreases;
Place both Steam Dump Interlock Switches to OFF/RESET.

- a. Incorrect. Plausible since candidate may confuse operation of dumps and conclude that they close because of the malfunction, using rods manually would be a logical response to increasing temperature.
- b. Incorrect. Plausible since candidate may confuse operation of dumps and conclude that they close because of the malfunction, similar to above the response of the rod control system would make sense as would the need to verify it.
- c. Incorrect. As given half the dumps will open and temperature would decrease and power increase, however while closing the MSTVs would terminate the excess steam demand it is not the action required by the procedure and would only be required if turning off steam dumps did not work.
- d. Correct. As given half the dumps will open and temperature would decrease and power increase, 1-AP-38 directs the action to turn of steam dumps which in the case will remedy the condition.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Main and Reheat Steam System (MRSS)

Ability to (a) predict the impacts of the following malfunctions or operations on the MRSS; and (b) based on predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Malfunctioning steam dump
(CFR: 41.5 / 43.5 / 45.3 / 45.13)

Tier: 2
Group: 1

Importance Rating: 3.4/3.7

Technical Reference: Steam Dump lesson plan and 1-AP-38

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: Bank (modified to more closely match KA)

Associated objective(s):

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

Answer: DDDDDDDDDDD Items Not Scrambled

Created: Wednesday, September 03, 2008

Modified: Friday, January 16, 2009

Revised:

source:	MODIFIED	source if bank:	NAPS
cognitive level:	H	difficulty level:	3
job:	RO	plant:	NAPS
date:		previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

37. 040-AA2.04 037/MODIFIED/NAPS-60323/H/3/RO/NAPS/8/2208/

Given the following conditions:

- Unit 1 was operating at 100% power when a Main Steamline break occurred inside containment
- 1-E-2, Faulted Steam Generator isolation, has been completed
- The team transitioned to 1-ES-1.1, SI Termination, and has just completed isolating the BIT and establishing normal charging

The following plant conditions exist:

- Containment pressure is 19 psia and decreasing
- Intact SG narrow-range levels are 8% and increasing
- PRZR level is 16% and decreasing
- 1-CH-FCV-1122, Charging flow control valve is full open

Based on these plant conditions, which ONE of the following identifies the action required by 1-ES-1.1, SI Termination?

- A✓ Manually start charging pumps and align the BIT; go to 1-E-1, Loss of Reactor or Secondary Coolant.
- B. When Containment pressure is less than 13 psig, then stop Quench Spray Pumps; Continue in 1-ES-1.1.
- C. Isolate letdown; if PRZR level continues to decrease, then manually actuate SI.
- D. Stop feed flow to SGs; if cooldown continues, then close MSTVs and bypass valves.

A. Correct. Based on this point in the procedure (SI terminated) SI reinitiation criteria of foldout page is met and the action MUST be performed.

B. Incorrect. Plausible since candidate may assume that reinitiation criteria is based solely on Core Exit TC's and 13 psig is a procedural requirement for shutting down Quench Spray.

C. Incorrect. Plausible and logical, but there is no guidance to actuate SI manually in ES-1.1.

D. Incorrect. Plausible and logical since this is an EOP action, however it is prohibited since NR levels are <11% because it would create a loss of heat sink and violate the procedure requirement of maintaining > 340 gpm total feed flow.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Steam Line Rupture

Ability to determine and interpret the following as they apply to the Steam Line Rupture: Conditions requiring ESFAS initiation (CFR: 43.5 / 45.13)

Tier: 1
Group: 1

Importance Rating: 4.5/4.7

Technical Reference: 1-ES-1.1

Proposed references to be provided to applicants during examination: None

Learning Objective: 60323

Question History: Modified from bank

Associated objective(s):

Evaluate a set of plant conditions associated with the E-1 series emergency operating procedures in light of the following issues (E-1, ES-1.1, ES-1.2, ES-1.3, ES-1.4, ES-1.5).

- Procedure entry conditions
- Major action categories
- Step bases
- Proper procedure usage

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Friday, August 22, 2008

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Revised:

source: MODIFIED

source if bank: NAPS-60323

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date: 8/2208

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

38. 041-K2.01 038/NEW//L/2/RO/NAPS//

Because power is lost to the steam dump arming circuit, Attachment 24, (Unit 1 CRO Loss of Power Actions), of 0-AP-10, Loss of Electrical Power, directs the operator to "Check SG PORVs controlling in AUTO or MANUAL due to loss of Steam Dumps" in the event of a loss of _____.

- A. 120-VAC Vital Bus I-I
- B. 120-VAC Vital Bus I-II
- C✓ 120-VAC Vital Bus I-III
- D. 120-VAC Vital Bus I-IV

Distractor Analysis:

All are plausible since several instruments and circuits used by steam dumps are fed from the various 120-VAC instrument busses (e.g. PT-1447 from I-IV, a train of control from I-I, etc). The loss of vital bus I-III removes all power from the arming ckt, thus disabling the steam dumps so c. is the correct answer. Although loss of other 120vac busses may have some minor "effect" on steam dumps, it is inconsequential since they do continue to function. This is why the action for controlling on SG PORVs only appears in the RNO for the loss of I-III and not any of the other 3 remaining 120-VAC instrument busses.

Steam Dump System (SDS) and urbine Bypass Control

Knowledge of bus power supplies to the following: ICS, normal and alternate power supply (CFR: 41.7)

Tier: 2
Group: 2

Importance Rating: 2.8/2.9

Technical Reference: 0-AP-10

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

Associated objective(s):

Not a direct KA match per se since ICS is a B&W system; NAPS has SSPS and the question meets the intent since it measures candidates knowledge of how SDS is affected by a loss of a power supply.

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

Answer: C C C C C C C C C C Items Not Scrambled

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QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: NEW

source if bank:

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

39. 051-AG2.4.35 039/NEW//L/2/RO/NAPS/8/20/2008/

Given the following conditions:

- Unit 1 is at 100% power when the crew notes degrading condenser vacuum
- The crew has entered 1-AP-14, Low Condenser Vacuum
- The Turbine Building operator has been dispatched to perform Attachment 2, Turbine Building Corrective Actions

The Turbine Building operator checks both condenser air ejector loop seal drain lines to condenser, and notes that one loop seal drain line is **hot** to the touch and the other is **cool** to the touch.

Which ONE of the following identifies the action required in accordance with 1-AP-14?

- A. Isolate the **hot** loop seal drain line and secure the associated set of main condenser air ejectors.
- B✓** Isolate the **hot** loop seal drain line; when at least 15 minutes have elapsed, then slowly reopen the loop seal drain isolation valve.
- C. Isolate the **cool** loop seal drain line and secure the associated set of main condenser air ejectors.
- D. Isolate the **cool** loop seal drain line; when at least 15 minutes have elapsed, then slowly reopen the loop seal drain isolation valve.

- a. Isolation of the hot loop seal is correct but the candidate who does not understand the function of the loop seal or have detailed knowledge of the procedure may not have that knowledge; the second part is also incorrect but plausible since again the candidate who does not fully understand the system lineup and operation may conclude that this action would make sense.
- b. Correct. The hot loop seal drain line indicates the seal is blown and the correct action is to isolate it, allow it to refill, and then place back in service as per AP14 Attachment 2.
- c. Incorrect. Again the candidate who does not have detailed knowledge of operation of the air ejector or procedure knowledge may conclude that this is a problem (since most things in the secondary are hot to the touch when operating and in-service; second part also incorrect but plausible as discussed in Distractor a.
- d. Incorrect. Plausible as discussed in Distractor c; second part is correct per AP-14, attachemnt 2.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Condenser Vacuum

Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects.
(CFR: 41.10 / 43.5 / 45.13)

Tier: 1
Group: 2

Importance Rating: 3.8/4.0

Technical Reference: 1-AP-14

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Wednesday, August 20, 2008

Modified: Friday, January 16, 2009

Revised:

source:	NEW	source if bank:	
cognitive level:	L	difficulty level:	2
job:	RO	plant:	NAPS
date:	8/20/2008	previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

40. 054-AK3.04 040/MODIFIED//H/3/RO/NAPS//

Given the following conditions:

- Operators have transitioned to 1-FR-H.1, Response to Loss of Secondary Heat Sink.
- SG wide-range levels are approximately 50% and slowly decreasing.
- Operators are at Step 2 of 1-FR-H.1 and are unable to establish AFW flow to any of the SGs.

Which ONE of the following identifies the action required by 1-FR-H.1 with respect to the RCPs?

- A. Stop all but ONE RCP.
- B✓ Stop all RCPs.
- C. Maintain RCPs operating unless support conditions degrade.
- D. Maintain RCPs operating until bleed and feed criteria are met.

- a. Incorrect. Plausible since several EOPs have actions to go down to ONE RCP; logical since EOPs prefer RCP operation for normal pressure control.
- b. Correct. Action is required to minimize heat input to the RCS and thus prolong the time before bleed and feed criteria are met.
- c. Incorrect. Plausible since candidate may assume that there is no urgency to perform the action and as discussed above; RCP operation for forced circulation is also desired.
- d. Incorrect. Plausible and logical for reasons noted above; candidate may rationalize that RCP operation is a good thing and they would only be stopped when we get to the point of bleed and feed where subcooling will be lost.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Main Feedwater (MFW)

Knowledge of the reasons for the following responses as they apply to the Loss of Main Feedwater (MFW): Actions contained in EOPs for loss of MFW (CFR 41.5,41.10 / 45.6 / 45.13)

Tier: 1
Group: 1

Importance Rating: 4.4/4.6

Technical Reference: 1-FR-H.1 and background document

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

Associated objective(s):

Explain the following concepts associated with the plant's response to a loss of secondary heat sink (1-FR-H.1, SOER-86-1).

Why reactor coolant pumps are tripped if the minimum auxiliary feedwater flow cannot be established immediately

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

Answer: B B B B B B B B B B Items Not Scrambled

Created: Friday, August 22, 2008

Modified: Tuesday, January 13, 2009

Revised:

source: MODIFIED

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

41. 055-EK2.04 041/NEW//H/3/RO/NAPS//

Given the following conditions:

- Both units are initially at 100% power
- 2-SW-P-1B is tagged out, and Service Water is throttled

A loss of both Unit-1 4160-Volt Emergency buses occurs, and power is eventually restored to the 1H Emergency bus from the SBO diesel.

Which ONE of the following identifies how the Unit-1 Service Water pumps are operated in accordance with 1-ECA-0.0, Loss of All AC Power?

- A. 1-SW-P-1A and 1-SW-P-1B control switches are maintained in AUTO during 1-ECA-0.0 recovery actions;
1-SW-P-1A will be started **prior to** exiting 1-ECA-0.0.
- B. 1-SW-P-1A and 1-SW-P-1B control switches are maintained in AUTO during recovery actions;
1-SW-P-1A will be started **after** exiting 1-ECA-0.0.
- C. 1-SW-P-1A and 1-SW-P-1B control switches are placed in PULL-TO-LOCK during recovery actions;
1-SW-P-1A will be started **prior to** exiting 1-ECA-0.0.
- D. 1-SW-P-1A and 1-SW-P-1B control switches are placed in PULL-TO-LOCK during recovery actions;
1-SW-P-1A will be started **after** exiting 1-ECA-0.0.

- a. Incorrect. Plausible since this is the normal configuration of the subject pumps and candidate may not recognize requirement to place them in PTL; second part is correct.
- b. Incorrect. Plausible since this is the normal configuration of the subject pumps and candidate may not recognize requirement to place them in PTL; second part is also incorrect but plausible since most other equipment is started by subsequent recovery procedures, SW is an exception to this rule since it provides the heat sink for other safety related loads.
- c. Correct. ECA-0.0 place the equipment in PTL to ensure control loading on the emergency power source; second part is also correct as discussed in Distractor b.
- d. Incorrect. First part is correct as discussed above; second part is incorrect as discussed in Distractor b.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Offsite and Onsite Power (Station Blackout)

Knowledge of the interrelations between the and the following Station Blackout: Pumps
(CFR 41.7 / 45.7)

Tier: 1

Group: 1

Importance Rating: plant specific > 2.5 (catalog is blank)

Technical Reference: 1-ECA-0.0

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

Associated objective(s):

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

Answer: C C C C C C C C C C Items Not Scrambled

Created: Wednesday, August 27, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

42. 056-AG2.4.8 042/NEW//H/3/RO//

Given the following conditions:

- Unit 1 is at 25% power ramping up following a scheduled refueling
- Annunciator A-G1, CNDSR LO VAC C-9 PERM NOT AVAIL is received
- The OATC notes that condenser vacuum is 4 in Hg abs and slowly degrading
- The crew enters 1-AP-14, Low Condenser Vacuum

Which ONE of the following identifies the action required to mitigate these plant conditions?

- A. Go to 1-AP-2.2, Fast Load Reduction, reduce load and remove the main generator from service while continuing with 1-AP-14.
- B. Exit 1-AP-14, go to 1-AP-2.2, Fast Load Reduction, reduce load and remove the main generator from service.
- C. Trip the reactor and go to 1-E-0, Reactor Trip or Safety Injection, while continuing with 1-AP-14.
- D. Exit 1-AP-14, trip the reactor and go to 1-E-0, Reactor Trip or Safety Injection.

- a. Incorrect. plausible since this would be the normal course of action at this power level if Condenser dumps were available, however for this scenario with vacuum at 4" abs C-9 permissive is not satisfied so a reactor trip is required, the procedure 1-AP-14 specifically directs performing E-0 while continuing with 1-AP-14.
- b. Incorrect. Entry into 1-AP-2.2 is plausible as discussed above; exiting 1-AP-14 is also plausible since the candidate may conclude that 1-AP-2.2 actions are taken to remedy the situation, and thus not see a need to perform 1-AP-14 concurrently.
- c. Correct. As previously discussed since Condenser dumps are unavailable a Reactor trip is required, AP-14 directs that is be performed concurrently since those actions may restore condenser vacuum and thus restore Condenser steam dumps which is the preferred method of maintaining hot standby conditions.
- d. Incorrect. As discussed in distractor b. exiting 1-AP-14 is plausible; the second part entering E-0 is correct.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal
Loss of Offsite and Onsite Power (Station Blackout)

Knowledge of how abnormal operating procedures are used in conjunction with EOPs.
(CFR: 41.10 / 43.5 / 45.13)

Tier: 1
Group: 1

Importance Rating: 3.8/4.5

Technical Reference: 1-AP-14

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

Associated objective(s):

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

Answer: C B B D B D C D B D Scramble Range: A - D

Created: Wednesday, October 22, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

43. 057-AG2.2.38 043/NEW//L/3/RO/NAPS//

Given the following conditions:

- Unit 1 is at 100% power and stable
- Following a lightening strike the OATC has identified that several instruments powered from Vital AC Bus 1-III have been lost

Which ONE of the following failed instruments requires action within 1 Hour in accordance with Technical Specifications?

- A✓ Pressurizer pressure protection channel III, 1-RC-PT-1457.
- B. Pressurizer level channel III, 1-RC-LT-1461.
- C. "B" SG steam flow channel III, 1-MS-FT-1484
- D. "A" SG narrow-range level channel III, 1-FW-LT-1476

- a. Correct. The pressurizer pressure protection channel feed ESFAS permissives which are required by TS to verified in their required state within 1 hour (reference TS Table 3.3.2-1, Function 8, condition J).
- b. Incorrect. Plausible since several instument channels have a 1 hour action associated with them, however Pressurizer level is not one of them.
- c. Incorrect. Plausible since some secondary instruments (e.g. Turbine first stage pressure) have 1 hour actions associated with them however steam flow is not one of them.
- d. Incorrect. Plausible since Hi-HI SG water level is the P-14 permisssive and being a permissive would seam to imply action may be required within 1 hour, but this is not the case.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Vital AC Electrical Instrument Bus

Knowledge of conditions and limitations in the facility license.
(CFR: 41.7 / 41.10 / 43.1 / 45.13)

Tier: 1
Group: 1

Importance Rating: 3.6/4.5

Technical Reference: TS 3.8.7

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

Associated objective(s):

additional information: NAPS Tech Spec action time for loss of vital bus is 2 hrs; since this is greater than 1hr and therefore not required from memory by ROs this was discussed with the Chief Examiner. The use of a vital bus load with a 1 hr TS action time was considered to meet the intent of the KA.

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Tuesday, September 09, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

44. 059-A1.03 044/NEW//L/2/RO/NAPS//

Which ONE of the following identifies the **power level and sequence** for securing a Main Feedwater (MFW) pump in accordance with 1-AP-2.2, Fast Load Reduction?

At approximately 55% power, _____; at approximately 50% power, _____.

- A. ✓ open one MFW recirc valve;
shutdown one MFW pump.
- B. shutdown one MFW pump;
open one MFW recirc valve.
- C. close one MFW recirc valve;
shutdown one MFW pump.
- D. shutdown one MFW pump;
close one MFW recirc valve.

- a. Correct. the valve is placed hard open to ensure cycling which causes substantial changes in thrust on the shaft do not occur as a result of automatic operation of the valve at flows that are right around setpoint; second part is correct power level per the AP.
- b. Incorrect. The order is reversed but plausible since the candidate who does not have detailed knowledge may conclude that it would make more sense to stop the pump first and then as power (and therefore the demand for feed) is reduced further to then open the valve.
- c. Incorrect. Plausible since candidate who does not have knowledge of the system operation and reasons might conclude that closing a recirc first (thus reducing feed demand) and the shutting down one of the pumps would make sense.
- d. Incorrect. Again order is reversed, but would make sense since two pumps are no longer needed one can be shutdown, and with only one running at the given power level recirc wouldn't be needed to prevent pump overheat and there is no longer the concern for the potential of a strong pump to overcome a weak one.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Main Feedwater (MFW) System

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MFW controls including: Power level restrictions for operation of MFW pumps and valves.

(CFR: 41.5 / 45.5)

Tier: 2
Group: 1

Importance Rating: 2.7/9

Technical Reference: 1-OP-2.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: New

Associated objective(s):

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Tuesday, September 23, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

45. 059-K3.03 045/BANK/NAPS/H/3/RO//

Given the following conditions:

- Unit 1 is at 70% power
- “B” Main Feedwater (MFW) pump is tagged out

The “C” MFW pump trips.

Which ONE of the following describes the plant response?

(Assume no operator action.)

- A. MFRVs modulate open, but SG levels continue to decrease.
- B. MFRVs modulate open and maintain SG levels.
- C. MFRVs and bypass valves modulate open and maintain SG levels.
- D. MFRVs and bypass valves fully open, but SG levels continue to decrease.

- a. Correct. Only the MFRVs will modulate since bypasses will be in manual and closed at this power level and at 70% power one feed pump will not maintain level.
- b. Incorrect. MFRVs will modulate open however as discussed above power level is beyond the capacity of a single feed pump.
- c. Incorrect. As noted above this is plausible since the bypass valves have an auto feature however they would normally be in manual at this power level and in any case the single feed pump will not be able to maintain level unless operator action to reduce power is taken.
- d. Incorrect. As previously discussed the bypass valve will not open since the normal configuration would be manual and closed, plausible since an auto feature exists and some APs (e.g. AP-4.3 and AP-3) have actions to place the valves in manual which tends to further support them a misconception of them being in auto normally.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Main Feedwater (MFW) System

Knowledge of the effect that a loss or malfunction of the MFW will have on the following: S/GS
(CFR: 41.7 / 45.6)

Tier: 2

Group: 1

Importance Rating: 3.5/3.7

Technical Reference: Lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective: 6097

Question History: bank

Associated objective(s):

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, September 10, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK

source if bank: NAPS

cognitive level: H

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

46. 061-K1.07 046/BANK/NAPS/LJ2/RO///

With AFW in service to supply SG feedwater, ECST level suddenly begins to decrease rapidly due to a rupture in the tank.

Which ONE of the following identifies the **preferred** source of alternate makeup water used to supply AFW pump suction?

- A. ✓ Fire Protection System using **motor-driven** pump 1-FP-P-1.
- B. **Standby** 300,000-gallon condensate storage tank.
- C. **In-service** 300,000-gallon condensate storage tank.
- D. Fire Protection System using **diesel-driven pump** 1-FP-P-2.

- a. Correct. The fire protection system is the source and the motor driven pump is preferred by AP-22.5 since it takes suction on the lake.
- b. Incorrect. This is a source but with the ECST not intact AP-22.5 bypasses this option, the candidate who does not have detailed knowledge of the procedure may conclude that this would be the first choice and select this distractor.
- c. Incorrect. This is a source but with the ECST not intact AP-22.5 bypasses this option, the candidate who does not have detailed knowledge of the procedure may conclude that this would be the first choice and select this distractor.
- d. Incorrect. Based on the conditions given the fire protection system is the source, the diesel-driven pump is thus plausible however the diesel-driven pump is the **least** preferred because of the water chemistry of the service water reservoir

Auxiliary / Emergency Feedwater (AFW) System

K1 Knowledge of the physical connections and/or cause effect relationships between the AFW and the following systems: Emergency water source
(CFR: 41.2 to 41.9 / 45.7 to 45.8)

Tier: 2
Group: 1

Importance Rating: 3.6/3.8

Technical Reference: 1-AP-22.5

Proposed references to be provided to applicants during examination: None

Learning Objective: 6098

Question History: bank

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, September 10, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

47. 061-K6.02 047/NEW//H/3/RO/NAPS/8/20/2008/

Given the following conditions:

- Unit 1 is at 100% power
- AFW pump 1-FW-P-3A is tagged out for Maintenance

A loss of offsite power occurs, and all equipment functions as designed EXCEPT the 1J EDG locked out.

Based on these plant conditions, which ONE of the following identifies the realignment that will provide flow to all 3 SGs **AND** also allows the BOP the ability to control AFW flow rate to each SG from the control board?

- A. Align 1-FW-P-2 to the MOV header.
- B.** Align 1-FW-P-2 to the HCV header.
- C. Align 1-FW-P-3B to the MOV header.
- D. Align 1-FW-P-3B to the HCV header.

- a. Incorrect. The MOV header has no power precluding remote operation from the control room.
- b. Correct. 1-FW-P-2 (terry turbine) is the only pump running and since only the HCVs have power they are the only valves that can be controlled remotely.
- c. Incorrect. Since 1J EDG is locked out this pump is unavailable; plausible if candidate is unaware of power supply.
- d. Incorrect. Plausible first part is incorrect as described in Distractor C; second part is the correct header alignment.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Auxiliary / Emergency Feedwater (AFW) System

Knowledge of the effect of a loss or malfunction of the following will have on the AFW components:

Pumps

(CFR: 41.7 / 45.7)

Tier: 2

Group: 1

Importance Rating: 2.6/2.7

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: B B B B B B B B B B Items Not Scrambled

Created: Wednesday, August 20, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date: 8/20/2008

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

48. 062-AA1.07 048/NEW//L/3/RO//

The NORMAL source of cooling water for charging pumps is the _____; in the event of a loss of the normal source, alternate cooling is aligned from the _____.

- A. Service Water System ; Component Cooling System
- B. Service Water System ; Fire Protection System
- C. Component Cooling System ; PG Water System
- D. Component Cooling System ; Fire Protection System

- a. Incorrect. First part is correct. Second part is incorrect but plausible since CC is required by Tech Specs and cools many different loads, candidate who does not have detailed systems knowledge may conclude that CC would be logical and default to this distractor.
- b. Correct. First part is correct; second part is also correct as 0-AP-12 provides the option of using fire system or PG system to align backup cooling. Incorrect.
- c. First part incorrect as discussed in Distractor a; second part is correct as 0-AP-12 provides the option of using fire system or PG system to align backup cooling.
- d. First part incorrect as discussed in Distractor a; second part is correct as 0-AP-12 provides the option of using fire system or PG system to align backup cooling.

Loss of Nuclear Service Water

Ability to operate and / or monitor the following as they apply to the Loss of Nuclear Service Water (SWS):
Flow rates to the components and systems that are serviced by the SWS; interactions among the components
(CFR 41.7 / 45.5 / 45.6)

Tier: 1
Group: 1

Importance Rating: 2.9/3.0

Technical Reference: 0-AP-12

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: B B B B B B B B B B Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Wednesday, September 10, 2008

Modified: Tuesday, January 13, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

49. 062-K1.04 049/BANK/NAPS/H/2/RO///

Given the following conditions:

- Unit 1 is at 50% power
- 15F3, "F" Transfer Bus Supply to 1H Bus, is tagged out for breaker maintenance
- The 1H 4160-Volt Emergency bus is powered from the 1B Station Service Bus

While checking neutral bus volts, the OATC inadvertently takes breaker 15B2, Station Service Transformer Supply to 1B Station Service Bus, to TRIP.

As a result of this action, **final** status of the 1B Station Service Bus will be _____, and the **final** status of the 1H 4160-Volt Emergency bus will be _____.

- A✓ de-energized; energized
- B. energized; energized
- C. energized; de-energized
- D. de-energized; de-energized

- a. Correct. The auto transfer to RSST will not occur since 15B2 was manually opened; second part is also correct ,bus UV will open all required breakers and the 1H EDG will pick up the Emergency bus.
- b. Incorrect. Plausible since there is an auto transfer feature to RSSTs however it will not occur if the breaker is manually opened.
- c. Incorrect. First part incorrect but plausible as discussed above; similarly since this is an abnormal configuration the candidate who does not have detailed systems knowledge may conclude that the logic necessary for breaker interlock and edg start and load are met and thus conclude that this distactor is correct.
- d. Incorrect. First part is correct as explained in distractor a; second part incorrect as discussed in distractor c.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

A.C. Electrical Distribution

Knowledge of the physical connections and/or causeeffect relationships between the ac distribution system and the following systems: Off-site power sources
(CFR: 41.2 to 41.9)

Tier: 2
Group: 1

Importance Rating: 3.7/4.2

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective: 3820

Question History: bank

additional info:

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

Created: Tuesday, September 09, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK source if bank: NAPS
cognitive level: H difficulty level: 2
job: RO plant:
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

50. 063-A3.01 050/NEW//H/3/RO/NAPS//

A Loss of All AC has just occurred on Unit 1.

Five minutes have elapsed, and a source of power has not yet been restored.

The operator should expect the voltage on all four (4) of the 125-Volt DC Busses to be _____ their pre-event values. Over time, vital DC bus 1-I voltage would be expected to drop _____, as compared to vital DC bus 1-II voltage.

- A. approximately the same as ; at approximately the same rate
- B. approximately the same as ; at a slower rate
- C. approximately 10 volts lower than ; at approximately the same rate
- D. approximately 10 volts lower than ; at a slower rate

- a. Incorrect. Plausible since it would not be illogical to conclude that the battery would maintain voltage about the same; second part also incorrect but plausible since the candidate who doesn't have detailed systems knowledge may conclude that there is no difference between busses.
- b. Incorrect. Plausible as discussed above; second part is correct, DC busses I-II and I-IV carry turbine DC oil pumps which will deplete their respective batteries at a faster rate as compared to DC busses I-I and I-III.
- c. Incorrect. First part is correct, initially when the charger is lost and battery picks up load it will drop roughly 6 volts as seen on the meters on the vertical board; second part incorrect but plausible as discussed in Distractor a.
- d. Correct. As noted above bus voltage will drop to approximately 125 VDC (from the initial value of approximately 130 vdc when the charger was carrying the bus); second part is also correct since bus I-I does not have turbine oil pumps on it like bus I-II its battery will deplete at a slower rate.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

D.C. Electrical Distribution

Ability to monitor automatic operation of the DC electrical system, including: Meters, annunciators, dials, recorders, and indicating lights
(CFR: 41.7 / 45.5)

Tier: 2
Group: 1

Importance Rating: 2.7/3.1

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History:

additional info:

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

Created: Thursday, October 09, 2008

Modified: Friday, December 05, 2008

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

51. 063-K4.02 051/BANK/NAPS/L/2/RO/NAPS//

Which ONE of the following methods ensures that only one DC bus at a time is supplied from the swing charger?

- A. Each swing charger supply breaker to the DC bus has a Key-operated interlock mechanism.
- B. The swing charger output breakers are interlocked such that both breakers trip if you attempt to close one with the other one already closed.
- C. Each swing charger has a single dedicated plug-in type output breaker.
- D. The swing charger output breakers are electrically interlocked to prevent simultaneous closure.

- a. Correct. Key interlock provides administrative control.
- b. Incorrect. Plausible since some breakers (e.g. RT BYP bkrs) have this feature.
- c. Incorrect. Plausible since some systems (e.g. 4160v swgr) have this feature.
- d. Incorrect. Plausible as discussed above since electrical interlocks are a common feature of several systems.

D.C. Electrical Distribution

Knowledge of DC electrical system design feature(s) and/or interlock(s) which provide for the following:
Breaker interlocks, permissives, bypasses and cross-ties
(CFR: 41.7)

Tier: 2
Group: 1

Importance Rating: 2.9/3.2

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: bank

additional info:

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, August 27, 2008

Modified: Wednesday, January 21, 2009

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

52. 064-A4.04 052/BANK/NAPS/L/2/RO/NAPS//

When the emergency diesel generator air compressors are swapped to the Lister diesels, the Lister diesel _____, and air bank pressure is maintained by the _____ loading and unloading of the air compressor.

- A✓ will run continuously; automatic
- B. will run continuously; manual
- C. is manually started each time air pressure drops to 150 psig; automatic
- D. is manually started each time air pressure drops to 150 psig; manual

- a. Correct. There are no auto start features with the lister so it runs continuously and does have pressure switches for loading and unloading automatically.
- b. Incorrect. First part is correct as discussed above, second part is incorrect but plausible since manual action is required to place it in service and start it, the candidate who does not have detailed systems knowledge may conclude that maintaining pressure is also a manual function.
- c. Incorrect. Plausible since it would be possible to operate this way, but it is not in accordance with the procedure; second part is correct.
- d. Incorrect. First part plausible but incorrect as noted above; second part also incorrect as discussed in distractor b.

Emergency Diesel Generators (ED/G)

Ability to manually operate and/or monitor in the control room: Remote operation of the air compressor switch (different modes)
(CFR: 41.7 / 45.5 to 45.8)

Tier: 2
Group: 1

Importance Rating: 3.2/3.2

Technical Reference: lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective: 3273

Question History: new

additional info:

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

Answer: A A A A A A A A A A Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Wednesday, September 03, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

53. 065-AA2.01 053/BANK//L/3/RO/NAPS//

Unit 1 is at 100% power.

After receiving annunciator J-E8, INSTRUMENT AIR LOW PRESS, operators entered 1-AP-28, Loss of Instrument Air.

The BOP notes Instrument Air pressure has decreased to _____. 1-AP-28 directs the crew to trip the reactor and close Main Steam Trip Valves. These actions are taken primarily to _____.

- A. 68 psig ; prevent an undesired automatic Safety Injection.
- B. 68 psig ; prevent an uncontrolled RCS cooldown.
- C. 88 psig ; prevent an undesired automatic Safety Injection.
- D. 88 psig ; prevent an uncontrolled RCS cooldown.

- a. Correct. AP-28 has a continuous action to trip the reactor if pressure is less than 70 psig and the main steam trip valves fail closed on a loss of instrument air, thus if one drifted into the steam flow and closed a safety injection on high steam flow low SG pressure on the other 2 generators could result.
- b. Incorrect. First part is correct as discussed above, second part is incorrect but plausible if the candidate does not fully understand the implications of the loss of instrument air as relates to the main steam trip valves they may conclude that the concern is for over cooling due to secondary valves failing open resulting in colder feedwater etc. the fact that procedures do direct closing MSTVs in the event of excessive cooldown (e.g. ES-0.1) further reinforces this misconception.
- c. Incorrect. Plausible since this pressure is well below the normal value and below 94 psig which is an action point in the procedure for taking actions such as bypassing the instrument air dryers; second part is correct as discussed in Distractor a.
- d. Incorrect. First part incorrect but plausible as discussed above; second part also incorrect but plausible as discussed in Distractor b.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Instrument Air

Ability to determine and interpret the following as they apply to the Loss of Instrument Air: Cause and effect of low-pressure instrument air alarm
(CFR: 43.5 / 45.13)

Tier: 1
Group: 1

Importance Rating: 2.9/3.2

Technical Reference: 1-AP-28

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Thursday, August 28, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK source if bank:
cognitive level: L difficulty level: 3
job: RO plant: NAPS
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

54. 067-AK1.01 054/NEW//L/3/RO/NAPS/8/20/2008/

If an oil fire occurs in the North Fuel Oil Pump House, a _____ will actuate to suppress the fire; the fire is classified as a _____.

- A. pre-action sprinkler system ; Class B fire
- B. pre-action sprinkler system ; Class A fire
- C. high-pressure CO₂ system ; Class B fire
- D. high-pressure CO₂ system ; Class A fire

- a. Incorrect. Plausible since water is commonly used for equipment that contains oil (e.g. transformers) and has the potential for spreading rapidly. Second part is correct.
- b. Incorrect. Plausible since water is commonly used for equipment that contains oil (e.g. transformers) and has the potential for spreading rapidly. Second part is also incorrect.
- c. Correct. This is the correct suppression system. Second part is also correct.
- d. Incorrect. This is the correct suppression system. Second part is incorrect as this is the classification for an electrical fire.

Plant fire on site

Knowledge of the operational implications of the following concepts as they apply to Plant Fire on Site: Fire classifications, by type (CFR 41.8 / 41.10 / 45.3)

Tier: 1
Group: 2

Importance Rating: 2.9/3.9

Technical Reference:

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: C C C C C C C C C C Items Not Scrambled

Created: Wednesday, August 20, 2008

Modified: Wednesday, December 03, 2008

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date: 8/20/2008

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

55. 073-K3.01 055/BANK/NAPS/L/2/RO//

Which ONE of the following components is automatically affected by a high alarm on 1-GW-RI-178-1, MGP Process Vent Radiation Monitor?

- A. Containment Vacuum Pump Discharge Valves
- B. Low Level Liquid Waste Tank Vents
- C. Boron Recovery Tank Vents
- D. Containment Purge Exhaust Valves

- a. Correct. Actuation of alarm results in trip valves closing and pumps tripping to isolate potential source of release from this pathway.
- b. Incorrect. Plausible since these valves are required to be closed by the AP but these are MANUAL actions, not automatic actions.
- c. Incorrect. Plausible as discussed in Distractor b.
- d. Incorrect. Plausible since several RMs will automatically close these valves but this RM is not one of them.

Process Radiation Monitoring (PRM) System

Knowledge of the effect that a loss or malfunction of the PRM system will have on the following:
Radioactive effluent releases
(CFR: 41.7 / 45.6)

Tier: 2
Group: 1
Importance Rating: 3.6/4.2

Technical Reference: 0-AP-5.2

Proposed references to be provided to applicants during examination: None

Learning Objective: 5679

Question History: bank

additional info:

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, September 10, 2008

Modified: Wednesday, December 03, 2008

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

56. 075-K4.01 056/NEW//H/3/RO//

Both units are at 100% power.

Breaker 15G10, 1G/2G bus crosstie, will automatically close if power is lost to the _____.

- A. "A" RSST provided lake level is **greater than** 251 feet
- B. "A" RSST provided lake level is **less than** 251 feet
- C. "C" RSST provided lake level is **greater than** 251 feet
- D. "C" RSST provided lake level is **less than** 251 feet

- a. Incorrect. Plausible if candidate is unaware of the purpose of the feature or the requirement to defeat it contained in 0-AP-40.
- b. Incorrect. Plausible as discussed in distractor a.
- c. Incorrect. The loss of C RSST is part of the logic, however the feature is required to be defeated by 0-AP-40 for the given lake level.
- d. Correct. For the stated condition the automatic closure will occur and maintain CW pumps running (maintain Heat Sink) on the affected Unit.

Circulating Water System

Knowledge of circulating water system design feature(s) and interlock(s) which provide for the following:
Heat sink
(CFR: 41.7)

Tier: 2
Group: 2

Importance Rating: 2.5/2.8

Technical Reference: 0-AP-40 and basic electrical lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: DDDDDDDDDD Items Not Scrambled

Created: Wednesday, September 10, 2008

Modified: Friday, December 05, 2008

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: NEW
cognitive level: H
job: RO
date:

source if bank:
difficulty level: 3
plant:
previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

57. 076-K4.01: 057/MODIFIED/NAPS/H/3/RO/NAPS//

Given the following conditions:

- Both units are at 100% power
- 1-SW-P-1A and 2-SW-P-1A are running
- Unit 1 experiences a large-break LOCA

Service Water flow to the CCHXs isolates _____.

- A. on Unit 1 ONLY, and 3 Service Water pumps will be running.
- B. on BOTH units, and 3 Service Water pumps will be running.
- C. on Unit 1 ONLY, and 4 Service Water pumps will be running.
- D. on BOTH units, and 4 Service Water pumps will be running.

- a. Incorrect. First part is correct; second part incorrect but plausible since the candidate who does not have detailed knowledge of the interaction of the ESFAS system and the service water system may conclude that only the accident unit pumps receive and start signal and thus select this distractor.
- b. Incorrect. First part incorrect but plausible since the CC system has no accident mitigation function, and because of the heat dissipation capability of the CC system service water could be isolated for a period of time and then reestablished; second part incorrect but plausible as discussed above.
- c. Correct. First part is correct, for the valves only the accident unit gets a close signal; second part also correct, for the pumps both units get a start signal so 4 will be running.
- d. Incorrect. First part incorrect but plausible as discussed in Distractor b; second part is correct as discussed in Distractor c.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Service Water System (SWS)

Knowledge of SWS design feature(s) and/or interlock(s) which provide for the following: Conditions initiating automatic closure of closed cooling water auxiliary building header supply and return valves (CFR: 41/7)

Tier: 2

Group: 1

Importance Rating: 2.5/2.9

Technical Reference: 1-E-1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: Modified

additional info:

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

Answer: C C C C C C C C C C Items Not Scrambled

Created: Thursday, August 28, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED

source if bank: NAPS

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

58. 077-AA1.03 058/NEW//L3/RO/NAPS//

Unit 1 is at 100% power with approximately 960 MW and 100 MVAR OUT.

The OATC notes the following conditions:

- Sustained Generator output voltage increase
- MVAR sustained increase consistent with Generator output voltage
- MW stable

Which ONE of the following identifies the required operator actions based on these plant conditions?

- A. Maintain Voltage Regulator in AUTO and adjust voltage using Base Adjust;
Maintain less than 200 MVAR OUT.
- B. Maintain Voltage Regulator in AUTO and adjust voltage using Base Adjust;
Maintain less than 200 MVAR IN.
- C. Place Voltage Regulator control switch in OFF and adjust voltage using Base Adjust;
Maintain less than 200 MVAR OUT.
- D. Place Voltage Regulator control switch in OFF and adjust voltage using Base Adjust;
Maintain less than 200 MVAR IN.

- a. Incorrect. First part is incorrect but plausible since the action would be correct if the cause were grid disturbances; second part also incorrect but plausible since candidate may conclude that zeroing vars is the conservative course of action.
- b. Incorrect. First part is incorrect as discussed above; second part is the correct subsequent action of the AP.
- c. Incorrect. First part is the correct action for the AP in effect; Second part is incorrect but plausible as discussed in distractor a.
- d. Correct. First part is the correct action and required by AP-26; second part is also correct as it is a required subsequent step of the AP.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Generator Voltage and Electric Grid Disturbances

Ability to operate and/or monitor the following as they apply to Generator Voltage and Electric Grid Disturbances: Voltage regulator controls
(CFR: 41.5 and 41.10 / 45.5, 45.7, and 45.8)

Tier: 1

Group: 1

Importance Rating: 3.8/3.7

Technical Reference: 1-AP-26

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: DDDDDDDDDDD Items Not Scrambled

Created: Wednesday, August 20, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

59. 078-K2.02 059/MODIFIED/NAPS/L/2/RO/NAPS//

The Service Air Compressors are powered from their respective unit's _____ and the Instrument Air Compressors are powered from their respective unit's _____.

- A✓ "B" 480-Volt Station Service Bus ; "H" 480-Volt Emergency Bus
- B. "B" 480-Volt Station Service Bus ; "J" 480-Volt Emergency Bus
- C. "G" 480v Station Service Bus ; "H" 480-Volt Emergency Bus
- D. "G" 480-Volt Station Service Bus ; "J" 480-Volt Emergency Bus

- a. Correct. Power supplies are correct.
- b. Incorrect. power supplies for SACs is correct, however power supplies for IACs is incorrect but plausible since each unit has a containment instrument air compressor powered from 'J' train and candidate may confuse this.
- c. Incorrect. Plausible since the units have an auto transfer feature for the 'G' busses making them more reliable, since SACs are the normal source of Instrument air, the candidate who is not knowledgeable of compressor power supplies may consider 'G' bus a logical choice from the reliability standpoint and thus select this distractor; power supply for IACs is correct.
- d. Incorrect. Both parts incorrect but plausible as discussed above.
Instrument Air System (IAS)

Knowledge of bus power supplies to the following: Emergency air compressor
(CFR: 41.7)

Tier: 2
Group: 1

Importance Rating: 3.3/3.5

Technical Reference: Station Load list

Proposed references to be provided to applicants during examination: none

Learning Objective:

Question History: modified (two questions combined to provide more depth)

additional info: NAPS does not have a specific 'emergency' air compressor, however the instrument air compressors are powered from the emergency busses where as the service air compressors that normally run to supply the system come from station service. Knowledge of the specific emergency bus is important since for loss of offsite power events the operator must be aware of the importance of having at least one 'H' bus energized to supply instrument air (a loss of instrument air would complicate recovery actions).

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

Answer: A A A A A A A A A A Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Friday, September 19, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: MODIFIED

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

60. 103-A1.01 060/MODIFIED/NAPS/H/3/RO///

If Chilled Water to Containment is lost, the indicated containment partial air pressure will _____ and the digital containment partial air pressure indicators are _____.

- A✓ decrease ; inoperable
- B. decrease ; operable
- C. increase ; inoperable
- D. increase ; operable

- a. Correct. The loss of cooling flow will cause the decrease; second part is also correct the indicators are not considered accurate and thus are declared inoperable per 1-AP-35 until cooling water flow is reestablished.
- b. Incorrect. First part is correct; second part incorrect but plausible since the candidate who does not have detailed knowledge of the procedure would likely not see any reason to declare the indicators inoperable solely because chilled water flow is interrupted to the fan coolers, and thus select this distractor.
- c. Incorrect. First part incorrect but plausible since the candidate who lacks detailed systems knowledge could easily reverse the cause and effect relationship and thus select this distractor; second part is correct.
- d. Incorrect. First part incorrect but plausible as discussed in Distractor c; second part also incorrect but plausible as discussed in Distractor b.

Containment System

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the containment system controls including: Containment pressure, temperature, and humidity .

(CFR: 41.5 / 45.5)

Tier: 2

Group: 1

Importance Rating: 3.7/4.1

Technical Reference: 1-AP-35

Proposed references to be provided to applicants during examination: none

Learning Objective:

Question History: modified

additional info:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, September 03, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: MODIFIED

source if bank: NAPS

cognitive level: H

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

61. 103-G2.4.2 061/NEW//L/3/RO/NAPS//

Unit 1 has experienced a DBA LOCA.

The following plant conditions exist:

- Containment pressure is 25 psia
- Containment sump level is 11 feet 4 inches

Which ONE of the following identifies the status of the Containment CSF Status Tree?

- A. An ORANGE path exists for both Containment Pressure and Containment Sump level.
- B. An ORANGE path exists for Containment Pressure ONLY.
- C. An ORANGE path exists for Containment Sump level ONLY.
- D. An ORANGE path does NOT exist for Containment Pressure or Containment Sump level.

- a. Incorrect. Plausible since containment pressure is above adverse value and higher than would be expected at this stage of the game.
- b. Incorrect. Plausible as discussed in Distractor A.
- c. Correct. Sump level is above the threshold of 11 feet.
- d. Incorrect. Plausible since neither condition is that extreme; candidate that lacks in depth knowledge of F-0 may conclude that these conditions are consequences of the DBA and default to this Distractor.

Containment System

Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.
(CFR: 41.7 / 45.7 / 45.8)

Tier: 2
Group: 1
Importance Rating: 4.5/4.6

Technical Reference: 1-F-0

Proposed references to be provided to applicants during examination: none

Learning Objective:

Question History: new

additional info:

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

Answer: CCCCCCCCCC

Items Not Scrambled

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Created: Tuesday, September 09, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

62. G2.1.28RO 062/BANK/NAPS/H/3/RO/NAPS//

Both units are at 100% power with no equipment out of service (except as noted below).

Which ONE of the following events would initiate an automatic start of the SBO diesel?

- A✓ With "C" RSST out of service, a loss of 34.5 KV bus #4 occurs.
- B. With "B" RSST out of service, a loss of 34.5 KV bus #4 occurs.
- C. Spurious trip of breaker 15F1, "F" transfer bus supply.
- D. Spurious trip of breaker 15D1, "D" transfer bus supply.

- a. Correct. Both transfer busses to a unit emergency busses must lose power to start the SBO, given 'C' RSST (normal feed to F xfer bus which feeds 2J emergency bus) lossing bus 4 would take out B RSST and thus E xfer bus which feeds 2H so both unit 2 normal supplies are lost and the SBO start logic is made up.
- b. Incorrect. Plausible since the electrical distribution system is complicated and easily confused, moreover there are off-normal alignments that are possible that would make this distractor correct, so the candidate must have detailed knowledge of the normal alignment as well as the knowledge of the SBO start logic to eliminate this distractor. For this distractor only 2H bus does not have its normal feed so start logic is not made up.
- c. Incorrect. Plausible as discussed above. In this case a bus on each unit losses normal feed so two are lost but again it is not two lost on THE SAME unit which is needed to make up start logic.
- d. Incorrect. Plausible as discussed above, again the candidate who does not have systems knowledge of both the electrical distribution system AND the SBO start logic may conclude that it would be desirable to have the SBO start under these conditions, particularly since there are no adverse consequences of starting it.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

2.1.28 Knowledge of the purpose and function of major system components and controls.
(CFR: 41.7)

Tier: 3

Importance Rating: 4.1/4.1

Technical Reference: SBO lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective: 6539

Question History: bank

additional info:

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, September 03, 2008

Modified: Friday, January 16, 2009

Revised:

source: BANK

source if bank: NAPS

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

63. G2.1.4RO 063/BANK/NAPS/L/2/RO/NAPS//

In order to maintain an active license, a Reactor Operator must stand a **MINIMUM** of ____ 12-hour shifts per calendar quarter.

- A. 4
- B. 7
- C✓ 5
- D. 8

- a. Incorrect. since more than 40 hours is stood and that sounds like a reasonable minimum time.
- b. Incorrect. plausible as discussed in Distractor A this would be slightly greater than 80 hours and is reasonable considering the 90 day time frame.
- c. Correct. First part is the minimum for maintaining the License active.
- d. Incorrect. Plausible as discussed above.

Conduct of operations

Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc.
(CFR: 41.10 / 43.2)

Tier: 3

Importance Rating: 3.3/3.8

Technical Reference: admin procedure and activation paperwork from LORP

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: modified

additional info: combines to test items one for activation one for reactivation

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

Answer: CCCCCCCCCC Items Not Scrambled

Created: Wednesday, September 17, 2008

Modified: Monday, January 26, 2009

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

64. G2.2.15RO 064/NEW//H/3/RO/NAPS//

Given the following conditions:

- Unit 1 is at 100% power
- Annunciator B-H2, PRZ POWER RELIEF LINE HI TEMP is received
- During the next 1 hour, PRT level increases from 72% to 76%
- RCS Leakage **prior to the event** was 0.5 gpm Identified, and 0.3 gpm Unidentified

Based on the above conditions, which ONE of the following describes the Technical Specification implications of the leaking PORV?

(Reference provided)

- A✓ The limit for RCS Operational Leakage has NOT been exceeded.
- B. The limit for Identified Leakage has been exceeded.
- C. The limit for Pressure Boundary Leakage has been exceeded.
- D. The limit for RCS Pressure Isolation Valve (PIV) Leakage has been exceeded.

- a. Correct. Inleakage from the PORV is approximately 6.7 gpm this is defined as IDENTIFIED LEAKAGE by TS, TS 3.4.13 limit for identified leakage is 10 gpm so $6.7+0.5 = 7.2$ which is less than 10.
- b. Incorrect. Plausible since candidate may mis-read curve, not recall the limit for identified leakage, or make a calculatonal error.
- c. Incorrect. Plausible as discussed above and also candidate may not have detailed knowledge of TS definitions and erroneously default to this distractor.
- d. Incorrect. Plausible as discussed above, and again if the candidate does not realize that a PORV is NOT classified as a RCS PIV they may erroneously select this distractor.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Equipment Control

Ability to determine the expected plant configuration using design and |
configuration control documentation, such as drawings, line-ups, tag-outs, etc. |
(CFR: 41.10 / 43.3 / 45.13)

Tier: 3

Importance Rating: 3.9/4.3

Technical Reference: PRT curve and TS and TS basis

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, September 17, 2008

Modified: Monday, January 19, 2009

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

65. G2.2.43 065/NEW//L/3/RO/NAPS//

The status of annunciator patch cords is checked on a _____ basis using 0-GOP-2.7, Annunciator Patchcord Control, and the _____ is used to track the total number of disabled annunciators.

- A. quarterly; Central Reporting System
- B. quarterly; Operations Aggregate Impact Report
- C. weekly; Central Reporting System
- D. weekly; Operations Aggregate Impact Report

- a. Incorrect. First part is correct, this is a quarterly surveillance; second part is incorrect but plausible since some individual items (like the case where a tagout removes a patchcord) could be found by a report query, but ops aggregate impact report is the controlling document that lists and tracks the status of the collective disabled annunciators for each unit.
- b. Correct. First part correct as discussed above; second part also correct as the procedure Operations Aggregate Impact delineates the requirements for tracking of disabled annunciators.
- c. Incorrect. First part is plausible since annunciator status is important and performing this on a weekly basis would not create any undue burden, thus the candidate who does not have detailed knowledge of the surveillance frequency may default to this distractor; second part incorrect but plausible as discussed in distractor a.
- d. Incorrect. First part incorrect as discussed in distractor c; second part is correct as discussed in distractor b.

Equipment Control

Knowledge of the process used to track inoperable alarms.
(CFR: 41.10 / 43.5 / 45.13)

Tier: 3

Importance Rating: 3.0/3.3

Technical Reference: gop-2.7 and admin procedure ops aggregate impact

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

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

Answer: B C C C A B D B D C Scramble Range: A - D

Created: Friday, October 10, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

66. G2.3.15 066/MODIFIED/NAPS/L/3/RO/NAPS//

The SG N-16 Radiation Monitors are required by Technical Requirements in _____, and can not be declared functional until reactor power is at least _____.

- A. Modes 1, 2, and 3 ; 5%
- B. Modes 1, 2, and 3 ; 25%
- C. Modes 1 & 2 ; 5%
- D✓ Modes 1 & 2 ; 25%

- a. Incorrect. Plausible since this spec requires several different monitors and contingencies for monitoring. It is just as likely to have a SGTL in Mode 3 as it is in mode 2, and most instrumentation specs are 1-3 which further reenforces the plausibility.
- b. Incorrect. Plausible for Modes as discussed above. Power level in this case is correct.
- c. Incorrect. Modes required is correct. Power level incorrect but plausible as discussed in Distractor a.
- d. Correct. Modes required is correct and per the TRM basis power level must be at least 25% before RCS N-16 activity is sufficient for the monitor to be functional to meet TRM requirements.

Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.

(CFR: 41.12 / 43.4 / 45.9)

Tier: 3

Importance Rating: 2.9/3.1

Technical Reference: trm 3.4.5 and basis

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info: Ro rating is 2.2 but this is an sro only question (SRO has a 3.2 value).

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

Answer: DDDDDDDDDD Items Not Scrambled

Created: Friday, September 12, 2008

Modified: Friday, January 16, 2009

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: MODIFIED

source if bank: NAPS

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

67. G2.3.4RO 067/BANK/NAPS/L/3/RO/NAPS//

In accordance with VPAP-2101, Radiation Protection Program, a Radiation Worker's Annual Administrative Dose Limit for Total Effective Dose Equivalent (TEDE) is _____ rem/calendar year at the worker's home site.

- A. 1
- B. 2
- C. 3
- D. 4

- A. Incorrect. Plausible since 1 is a limit, but this is associated with 1 per each year of age.
- B. Correct. 2 at any given site not to exceed 3 cumulative without an extension.
- C. Incorrect. Plausible since 3 is the limit for all sites.
- D. Incorrect. Plausible since 4 is less than the 10CFR20 limit of 5 rem/year.

Radiation Control

Knowledge of radiation exposure limits under normal or emergency conditions.
(CFR: 41.12 / 43.4 / 45.10)

Tier: 3

Importance Rating: 3.2/3.7

Technical Reference: VPAP-2101

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: bank

additional info:

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

Answer: B B B B B B B B B B Items Not Scrambled

Created: Wednesday, September 17, 2008

Modified: Tuesday, January 20, 2009

Revised:

source: BANK

source if bank: NAPS

cognitive level: L

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

68. G2.3.5RO 068/NEW//L/2/RO/NAPS//

Unit 1 is at 100% power.

1-SV-RM-121, Condenser Air Ejector Radiation Monitor, spikes high resulting in a Hi alarm **AND** a Hi-Hi alarm on the drawer, and then the indication returns to normal.

Based on the above, which ONE of the following describes the response of 1-SV-RM-121, Condenser Air Ejector Radiation Monitor?

- A✓ The Hi alarm clears when the indication returns to normal; the Hi-Hi alarm remains in and must be reset by the operator.
- B. The Hi alarm clears when the indication returns to normal; the Hi-Hi alarm remains in and must be reset by I&C.
- C. The Hi-Hi alarm clears when the indication returns to normal; the Hi alarm remains in and must be reset by the operator.
- D. The Hi-Hi alarm clears when the indication returns to normal; the Hi alarm remains in and must be reset by I&C.

- a. Correct. The Hi alarm does not seal in; the hi-hi alarm must be reset by taking the operations selector switch to reset.
- b. Incorrect. The Hi alarm does not seal in; the hi-hi alarm must be reset by taking the operations selector switch to reset, this is plausible since the MGPIs do require I&C to reset them and the candidate may confuse the two.
- c. Incorrect. This is opposite of how they operate but the candidate who is not knowledgeable of the system could easily confuse which alarm seals in and which clears on its own.
- d. Incorrect. Plausible as described above and also as discussed in Distractor b.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Radiation Control

Ability to use radiation monitoring systems, such as fixed radiation monitors and |
alarms, portable survey instruments, personnel monitoring equipment, etc. |
(CFR: 41.11 / 41.12 / 43.4 / 45.9)

Tier: 3

Importance Rating: 2.9/2.9

Technical Reference: radiation monitoring lesson plan

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Answer: A A A A A A A A A A Items Not Scrambled

Created: Wednesday, September 17, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

69. G2.4.20 069/NEW//L3/RO//

1-FR-H.1, Response to Loss of Secondary Heat Sink, is in effect.

When attempting to establish SG feed flow from the Condensate System, there is a NOTE prior to the step "Initiate depressurization of all SGs to less than 610 psig by dumping steam to condenser at maximum rate."

This NOTE states that each Main Steamline flow should be kept less than 1.0E6 LBM/HR.

The purpose of this NOTE is to remind the operator that exceeding 1.0E6 LBM/HR may result in _____.

- A. a RCS cooldown rate in excess of Technical Specification limits.
- B. a challenge to the PTS status tree.
- C. an inadvertant Steamline DP Safety Injection.
- D. an undesired Main Steamline Isolation.

- a. Incorrect. Plausible since most EOPs limit C/D to the TS 100 degree/hr.
- b. Incorrect. Plausible since most EOPs try to avoid intentionally causing a challenge to CSF trees.
- c. Incorrect. Plausible since depending on plant conditions this would be a concern and has the potential to complicate recovery, however this is not the reason for the caution.
- d. Correct. MSLI signal is not blockable.

Emergency Procedures / Plan

Knowledge of the operational implications of EOP warnings, cautions, and notes.
(CFR: 41.10 / 43.5 / 45.13)

Tier: 3

Importance Rating: 3.8/4.3

Technical Reference: 1-FR-H.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

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

Answer: DDDDDDDDDDD Items Not Scrambled

Created: Thursday, September 11, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW

source if bank:

cognitive level: L

difficulty level: 3

job: RO

plant:

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

70. G2.4.37 070/MODIFIED/NAPS/L/2/RO/NAPS//

Once the TSC is fully operational, the relief Station Emergency Manager will assume all of the following responsibilities from the on-shift SEM **EXCEPT** _____.

- A. authorizing notification to state and local governments.
- B. classifying the emergency (escalation/de-escalation).
- C. making protective action recommendations (PAR).
- D.** authorizing deviations to procedures pursuant to 10 CFR 50.54x.

- a. Incorrect. Plausible since there are several lines of control with varying responsibilities once the emergency organization is activated, and the candidate who lacks detailed knowledge of various roles/responsibilities of the ERO at different stages of the accident may default to this distractor.
- b. Incorrect. Plausible as discussed above, moreover the on-shift SEM makes initial classification and again the candidate without detailed knowledge may assume that this responsibility always resides in the control room.
- c. Incorrect. Plausible as discussed in distractor b.
- d. Correct. This is always an on-shift function.

Knowledge of the lines of authority during implementation of the emergency plan.
(CFR: 41.10 / 45.13)

Tier: 3

Importance Rating: 3.0/4.1

Technical Reference: EPIP-3.02

Proposed references to be provided to applicants during examination: None

Learning Objective: 6171

Question History: bank

additional info:

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

Answer: DDDDDDDDDD Items Not Scrambled

Created: Wednesday, September 03, 2008

Modified: Wednesday, December 03, 2008

Revised:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

source: MODIFIED

source if bank: NAPS

cognitive level: L

difficulty level: 2

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

71. G2.4.45RO 071/MODIFIED/NAPS/H/3/RO/NAPS//YES - 2004

Operators are responding to a large-break LOCA with a loss of offsite power.

The team is implementing 1-E-1, Loss of Reactor or Secondary Coolant.

The OATC reports that the following alarms have just been received:

- F-E8, AFW SUPPLY 20 MIN WATER REMAINING
- J-A2, RWST LO LEVEL
- H-H1, EMER DIESEL GEN #1H DIFFERENTL
- J-F5, LHSI PP 1B LO OR OL TRIP

Based on these alarms, the crew will _____.

- A. verify LHSI pump suction has transferred to containment sump and continue in 1-E-1, Loss of Reactor or Secondary Coolant.
- B. perform 1-AP-22.5, Loss of Emergency Condensate Storage Tank 1-CN-TK-1, in order to preclude implementing 1-FR-H.1, Loss of Secondary Heat Sink.
- C. transition to 1-ES-1.3, Transfer to Cold Leg Recirculation, then return to 1-E-1, Loss of Reactor or Secondary Coolant.
- D. transition to 1-ES-1.3, Transfer to Cold Leg Recirculation, then transition to 1-ECA-1.1, Loss of Emergency Coolant Recirculation.

- a. Incorrect. Plausible since auto-transfer is a design feature, however ES-1.3 is still required to be performed in order to verify proper system and support system alignment.
- b. Incorrect. Plausible since there is a CAP item for this, but it is not required till level in the tank is 40% (alarm is at 46%).
- c. Incorrect. Plausible since the transition is required and when leaving ES-1.3 the operator would normally return to E-1, however in this case the flowpath is to ECA-1.1.
- d. Correct. Transition to ES-1.3 is required and because of the given conditions ES-1.3 will direct the operator to transition to ECA-1.1.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Emergency Procedures / Plan

Ability to prioritize and interpret the significance of each annunciator or alarm.
(CFR: 41.10 / 43.5 / 45.3 / 45.12)

Tier: 3

Importance Rating: 4.1/4.3

Technical Reference: ES-1.3, E-1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: NRC exam from 3 Exams ago

additional info: modified 1 alarm in stem

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

Answer: D C C A A D D D A C Scramble Range: A - D

Created: Thursday, October 02, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED

source if bank: NAPS

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc: YES - 2004

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

72. WE04-EK3.2 072/NEW//H/3/RO/NAPS//

Operators have entered 1-ECA-1.2, LOCA Outside Containment.

1-ECA-1.2 will have the operator isolate cold leg injection piping from _____, and if RCS pressure is **INCREASING** AFTER the isolation, the crew will transition to _____.

- A. High-Head SI pumps ; 1-E-1, Loss of Reactor or Secondary Coolant.
- B. High-Head SI pumps ; 1-ECA-1.1, Loss of Emergency Coolant Recirculation.
- C. Low-Head SI pumps ; 1-ECA-1.1, Loss of Emergency Coolant Recirculation.
- D. Low-Head SI pumps ; 1-E-1, Loss of Reactor or Secondary Coolant.

- a. Incorrect. Plausible since this seems like the more likely source and an alternate hot leg path is available and could be used without interrupting flow to the core, however it is not a procedural option; second part correct since the RCS is most likely intact now the operator is sent to E-1 to perform any subsequent diagnostic, and if this were the only problem would check for and meet SI termination in E-1.
- b. Incorrect. First part incorrect but plausible as discussed above; second part incorrect but plausible since the candidate who does not have detailed knowledge of the EOP network would most likely conclude that ECA-1.1 will deal with plant conditions.
- c. Incorrect. First part is correct this portion of low-head piping outside containment is isolated as the likely source from back leakage of check valves in the cold leg injection lines; second part is incorrect but plausible as discussed in distractor b and would be true if RCS pressure were decreasing as checked in ECA-1.2 Step 2c.
- d. Correct. First part correct, after verifying proper system alignment in Step 1 of ECA-1.2, Steps 2a & 2b will isolate this flowpath; second part also correct Step 2c of ECA-1.2 will check RCS pressure, since it is increasing the conclusion is leakage is isolated and inventory is no longer being lost so the EOP network uses E-1 to complete recovery actions.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

LOCA Outside Containment

Knowledge of the reasons for the following responses as they apply to the (LOCA Outside Containment):
Normal, abnormal and emergency operating procedures associated with (LOCA Outside Containment).
(CFR: 41.5 / 41.10, 45.6, 45.13)

Tier: 1
Group: 1

Importance Rating: 3.4/4.0

Technical Reference: 1-ECA-1.2

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info: knowledge of the reason is implicit in being able to select the correct response.

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

Created: Thursday, August 28, 2008

Modified: Wednesday, December 03, 2008

Revised:

source: NEW

source if bank:

cognitive level: H

difficulty level: 3

job: RO

plant: NAPS

date:

previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

73. WE05-EK2.1 073/MODIFIED/NAPS/H/3/RO/NAPS//

Unit 1 tripped from 100% power, and a loss of secondary heat sink occurred.

The following plant conditions exist:

- The crew is currently in 1-FR-H.1, Response to Loss of Secondary Heat Sink
- Bleed and feed has been established
- A Main Steamline break occurs inside containment and CDA actuates, but only one Quench Spray pump started
- RCS cold-leg temperatures have decreased to 265°F

Based on these conditions, which ONE of the following identifies the correct operator response?

- A✓ Reset CDA, reset Phase 'B', and place instrument air back in service to PORVs.
- B. Transition to 1-FR-Z.1, Response to High Containment Pressure.
- C. Transition to 1-FR-P.1, Response to Imminent Pressurized Thermal Shock Condition.
- D. Verify proper alignment of equipment using 1-E-0, Reactor Trip or Safety Injection.

- a. Correct. There is caution prior to Step 22 (the step that establishes the bleed path) that specifically delineates these requirements. The concern is maintaining the RCS bleed path.
- b. Incorrect. Plausible since a DBA steam break occurred however Z path is a lower priority.
- c. Incorrect. Plausible since criteria is met but P.1 is lower priority.
- d. Incorrect. Plausible since these actions are required by the procedure and the candidate who does not have detailed knowledge of H.1 may default to this answer.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Loss of Secondary Heat Sink

Knowledge of the interrelations between the (Loss of Secondary Heat Sink) and the following:
Components, and functions of control and safety systems, including instrumentation, signals, interlocks,
failure modes, and automatic and manual features.

(CFR: 41.7 / 45.7)

Tier: 1
Group: 1

Importance Rating: 3.7/3.9
Technical Reference: 1-FR-H.1

Proposed references to be provided to applicants during examination: None

Learning Objective: 6604

Question History: modified

additional info:

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

Created: Tuesday, September 09, 2008

Modified: Friday, January 16, 2009

Revised:

source:	MODIFIED	source if bank:	NAPS
cognitive level:	H	difficulty level:	3
job:	RO	plant:	NAPS
date:		previous nrc:	

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

74. WE08-EA2.2 074/NEW/NAPS/H/3/RO/NAPS//

Unit 1 was operating at 100% power when a LOCA occurred.

The crew has just transitioned from 1-E-1, Loss of Reactor or Secondary Coolant, to 1-FR-P.1, Response to Imminent Pressurized Thermal Shock Condition.

The following plant conditions exist:

- Containment pressure is 15 psia and is slowly trending down
- All RCPs are stopped
- RVLIS Full Range is reading 100%
- RCS subcooling based on Core Exit TCs is 105°F
- RCS pressure is 850 psig

Based on these plant conditions, which ONE of the following identifies the **actions the crew will perform** in accordance with 1-FR-P.1, and the **reason for these actions**?

- A✓ Remain in 1-FR-P.1, terminate SI and depressurize to minimize subcooling in order to limit pressure stress on the vessel.
- B. Exit 1-FR-P.1 and return to procedure step in effect, pressure is too low for PTS to be a concern.
- C. Exit 1-FR-P.1 and go to 1-ES-1.1, SI Termination, SI must be terminated promptly to mitigate the PTS condition.
- D. Remain in 1-FR-P.1, leave SI in service and determine soak requirements in order to minimize thermal stresses during subsequent recovery actions.

- a. Correct. Subcooling is adequate (since we are not adverse) so P.1 will terminate SI this allows for subsequent actions that minimize RCS subcooling (depressurize).
- b. Incorrect. Plausible since P.1 will do this upon entry, and the candidate who does not have detailed knowledge of the procedure may assume that since pressure is significantly reduced that this would be logical.
- c. Incorrect. Plausible since criteria is met, most EOP procedures transition to ES-1.1 in order to terminate SI and the candidate who does not have detailed knowledge of P.1 may default to this distractor based on past practice on the majority of scenarios that the transition to ES-1.1 is made.
- d. Incorrect. Candidate who does not have detailed knowledge of P.1 may not be sure that termination criteria is met, thus they would like choose the distractor since it may appear to them that it is a more conservative approach, the discussion of soak is correct but again it would not be correct to leave SI in service when termination criteria are satisfied.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

Pressurized Thermal Shock

Ability to determine and interpret the following as they apply to the (Pressurized Thermal Shock):
Adherence to appropriate procedures and operation within the limitations in the
facility's license and amendments.

(CFR: 43.5 / 45.13)

Tier: 1
Group: 2

Importance Rating: 3.5/4.1

Technical Reference: 1-FR-P.1

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: new

additional info:

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

Created: Tuesday, September 02, 2008

Modified: Friday, January 16, 2009

Revised:

source: NEW source if bank: NAPS
cognitive level: H difficulty level: 3
job: RO plant: NAPS
date: previous nrc:

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

75. WE14-EA1.3 075/MODIFIED/NAPS/H/4/RO/NAPS//

Given the following conditions:

- Unit 1 has experienced a LOCA
- After establishing Cold Leg Recirculation, operators observed indication of sump blockage
- The crew has just transitioned to 1-ECA-1.1, Loss of Emergency Recirculation Capability

The STA reports an ORANGE path on Containment Pressure.

Based on these plant conditions, which ONE of the following identifies the crew response, and the reason for their response?

- A✓ Remain in 1-ECA-1.1; FRPs are not implemented until specifically directed by 1-ECA-1.1.
- B. Remain in 1-ECA-1.1; 1-FR-Z.1 is not to be performed as long as 1-ECA-1.1 is in effect.
- C. Immediately transition to 1-FR-Z.1 and operate Containment Depressurization Systems as directed, then return to 1-ECA-1.1; precludes a Red Path on the Containment status tree.
- D. Immediately transition to 1-FR-Z.1; Verify Phase A Isolation and Steamline Isolation, then return to 1-ECA-1.1; precludes a Red Path on the Containment status tree.

a. Correct. ECA-1.1 delays FRP implementation because of plant conditions since assessing and responding to core cooling concerns caused by sump blockage takes precedence.

b. Incorrect. Plausible because candidate may relate the fact that ECA-1.1 is used to determine what systems to operate; however FR-Z.1 is still performed when ECA-1.1 allows FRPs to be implemented.

c. Incorrect. Plausible since normally this would be the correct course of action and in general execution of severe challenge procedures is designed to prevent an extreme challenge.

d. Incorrect. This is in fact how Z.1 is implemented according the notes, however as noted above it is NOT immediately entered.

QUESTIONS REPORT

for NAPS 2009 NRC RO RE-TAKE exam final submittal

High Containment Pressure

EA1. Ability to operate and / or monitor the following as they apply to the (High Containment Pressure):
Desired operating results during abnormal and emergency situations.
(CFR: 41.7 / 45.5 / 45.6)

Tier: 1
Group: 2

Importance Rating: 3.3/3.8

Technical Reference: 1-FR-Z.1 and background Document

Proposed references to be provided to applicants during examination: None

Learning Objective:

Question History: modified

additional info:

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

Created: Tuesday, September 23, 2008

Modified: Friday, January 16, 2009

Revised:

source: MODIFIED source if bank: NAPS
cognitive level: H difficulty level: 4
job: RO plant: NAPS
date: previous nrc: