43. 061 K6.02 001

Given the following conditions:

A reactor trip has occurred on Unit 1 due to a loss of Main Feedwater.
During the performance of 1-E-0, Reactor Trip or Safety Injection, AFW Pump 1-FW-P-2 trips on overspeed.

Prior to any action by the crew, which ONE of the following describes the Steam Generators that are being supplied with AFW flow?

A. All SGs

B. A and B SGs only

C. A and C SGs only

D. B and C SGs only

D. Correct. 1-FW-P-2 is normally aligned to SG 1A. If it trips, SG 1A will be supplied by the other AFW pumps only after manual alignment.
A, B, and C are all incorrect, since SG 1A will have no AFW flow without crew manual actions.

Knowledge of the effect that a loss of malfunction of the following will have on the (SYSTEM): Pumps.

Question Number: 41

Tier 2 Group 1

Importance Rating: RO 2.6

Technical Reference: NCRODP-26-NA
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

44. 062 AG2.4.6 001

Given the following:

A large-break LOCA has occurred on Unit 1.
The crew is performing actions of 1-E-0, Reactor Trip or Safety Injection.
The crew determines that there is NO SW flow to the RS Heat Exchangers.

Which ONE of the following actions is required **in accordance with 1-E-0**?

A. Go to 0-AP-12, Loss of Service Water. When completed, return to 1-E-0.

B. Perform 0-AP-12, Loss of Service Water, while continuing with 1-E-0.

C. Initiate Attachment 5, Verification of Phase A Isolation, to establish RSHX SW flow while continuing with 1-E-0.

D. Initiate Attachment 2, Verification of Phase B Isolation, to establish RSHX SW flow while continuing with 1-E-0.

D. Correct. Per DNAP-0509 rules of usage, the EOPs have priority over APs and ARs. Also, 0-AP-12 does not address loss of SW flow to RSHX's.
A. Incorrect. (see C).
B. Incorrect. Attachment 2 is directed by 1-E-0 step 11 and also by CAP.
D. Incorrect. (see C).
Knowledge of symptom based EOP mitigation strategies.

Question Number: 13

Tier 1 Group 1

Importance Rating: RO 3.1

Technical Reference: 1-E-0
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

45. 062 K2.01 001

The following plant conditions exist.

- Unit 1 is at 100% power
- Unit 2 is in Mode 3 following a refueling outage with all 3 RCPs running
- Bus 5 in the switchyard is out of service
- An earthquake occurs that causes Unit 1 to trip and the loss of bus 4 in the switchyard

Which ONE of the following describes the Unit 1 and Unit 2 Reactor Coolant Pump (RCP) status? (assume all equipment operates normally)

A. Only Unit 1 "C" and Unit 2 "C" RCPs are running.

B. All RCP's running except Unit 2 "A" & "B".

C. All RCPs running except Unit 1 "C" and Unit 2 "C".

D. Only Unit 1 "A" and Unit 2 "A" RCPs are running.

B. Correct. Bus 4 supplies "A" and "B" RSST, which will be supplying unit-2 "A" and "B" 4160V SS busses. Loss of bus 4 will cause unit-2 "A" and "B" RCPs to trip on UF/UV. Unit-2 "C" RCP will be unaffected, since it is powered from "C" SS bus, which is powered from "C" RSST, which is powered from bus 3. None of unit-1 RCPs will be affected, since unit-1 SS busses are powered from generator output via SS Xfmrs.
A, C, D all incorrect (see B).
Knowledge of electrical power supplies to the following: Major system loads.

Question Number: 42

Tier 2 Group 1

Importance Rating: RO 3.3

Technical Reference:
Proposed references to be provided to applicants during examination: None
Learning Objective: OB 16091
Question Source: Bank
Question History: 5998
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

46. 063 K2.01 001

Given the following conditions:

- Unit 2 was operating at 100% power.
- 2-CH-P-1A was running.
- A loss of DC bus 2-III has occurred.
- While stabilizing the unit, Safety Injection actuated.

Which ONE of the following pump combinations will exist as a result of these failures?

A. 2-CH-P-1A running, 2-CH-P-1B not running, 2-CH-P-1C not running

B. 2-CH-P-1A running, 2-CH-P-1B not running, 2-CH-P-1C running

C. 2-CH-P-1A running, 2-CH-P-1B running, 2-CH-P-1C not running

D. 2-CH-P-1A not running, 2-CH-P-1B running, 2-CH-P-1C running

A. Correct. Bus 2J supplies power to 2-CH-P-1B. Losing DC control power to bus 2J (DC 2-III) will cause equipment to NOT start as required. 2-CH-P-1A will remain running. 2-CH-P-1C has no auto-start features so will remain not running.
B and D are incorrect because 2-CH-P-1C has no auto-start feature.
C and D are incorrect because 2-CH-P-1B has no control power and will not be running.
Knowledge of electrical power supplies to the following: Major DC loads.

Question Number: 43

Tier 2 Group 1

Importance Rating: RO 2.9

Technical Reference: NCRODP-18-NA
Proposed references to be provided to applicants during examination: None
Learning Objective: OB 11969
Question Source: Bank
Question History: 3136
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

47. 064 A3.01 001

Given the following:

Unit 1 is at 100% power.
1H 4160V bus normal feeder breaker 15H11 spuriously tripped open.

Which ONE of the following describes the response of 1H EDG and starting air system?

1H EDG will...

A. start and load. The starting air compressors will start directly from the EDG start signal, and will stop when air receiver pressure reaches 200 psig.

B. start and load. The starting air compressors will start when air receiver pressure drops to 200 psig, and will stop when air receiver pressure reaches 240 psig.

C. start and run unloaded. The starting air compressors will start directly from the EDG start signal, and will stop when air receiver pressure reaches 200 psig.

D. start and run unloaded. The starting air compressors will start when air receiver pressure drops to 200 psig, and will stop when air receiver pressure reaches 240 psig.

B. Correct. The EDG will start and load on bus UV if there is a spurious breaker trip that de-energizes the bus. The air compressors will start on low pressure in the associated receiver. They automatically stop when 240 psig is restored. The EDG output breaker would not close onto the bus if there was a lockout, but in this case there is no lockout.
A and C are incorrect because the starting air compressors do not start directly from a EDG start signal.
C and D are incorrect because the EDG will load (see D).

Ability to monitor automatic operations of the (SYSTEM) including: Automatic start of compressor and ED/G.

Question Number: 44

Tier 2 Group 1

Importance Rating: RO 4.1

Technical Reference: NCRODP-55-NA
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

QUESTIONS REPORT
for POST NRC REVIEW R1

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

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

48. 065 AG2.1.23 001

Unit 1 is at 100% power.

The crew is responding to a loss of instrument air using 1-AP-28, "Loss of Instrument Air," when the RO identifies that pressurizer level is 85% and rising.

Which ONE of the following describes the actions required?

A. Continue performance of 1-AP-28 until an automatic reactor trip occurs, then exit 1-AP-28 and initiate performance of 1-E-0.

B. Immediately initiate performance of 1-E-0, "Reactor Trip or Safety Injection," and continue performance of 1-AP-28 as resources permit.

C. Exit 1-AP-28 and immediately initiate performance of 1-E-0. Resume actions of 1-AP-28 upon exiting the EOPs.

D. Continue performance of 1-AP-28 until completion, then if the cause for the pressurizer level increase has not been corrected, trip the reactor and perform 1-E-0.

B. Correct. The crew should trip the reactor if PRZR level is not being controlled. 1-AP-28 is allowed to be used concurrently if necessary with 1-E-0.
A. Incorrect. A manual trip is required in order to prevent an automatic trip, and EOPs take precedence over APs.
C. Incorrect. 1-AP-28 can be performed concurrently with 1-E-0 as resources permit.
D. Incorrect. (see A).
Ability to perform specific system and integrated plant procedure during all modes of plant operation.

Question Number: 14

Tier 1 Group 1

Importance Rating: RO 3.9

Technical Reference: 1-AP-28
Proposed references to be provided to applicants during examination: None
Learning Objective: OB 18877
Question Source: Bank
Question History: 3744
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

49. 069 AK1.01 001

Given the following conditions:

A loss of Containment Integrity has occurred.

In accordance with the accident analyses, which ONE of the following events would result in the HIGHEST rate of Containment mass leakage to atmosphere?

A. DBA LOCA, Beginning of Core Life, 100% power.

B. DBA LOCA, End of Core Life, 0% power.

C. Main Steam Break inside Containment, Beginning of Core Life, 100% power.

D✓ Main Steam Break inside Containment, End of Core Life, 0% power.

D. Correct. Per TS 3.6.4 basis, limiting MSLB would be at EOL, with 0% power resulting in additional mass from SG. DBA LOCA is credible because it is the other analyzed accident and results in containment pressure increasing.
A, B, C all incorrect (see D).
Knowledge of the operational implications of the following concepts as they apply to the: Effect of pressure on leak rate.

Question Number: 22

Tier 1 Group 2

Importance Rating: RO 2.6

Technical Reference: TS 3.6.4.1 Basis
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41/43

Comments:

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

50. 073 A1.01 001

With a containment vacuum pump running on each unit, process vent particulate radiation monitor 1-GW-RI-178-3 indication spiked, causing an ALERT and HIGH alarm to lock in.

Which ONE of the following describes the plant response?

A. ONLY the unit 1 vacuum pump will trip.

B. Both units' vacuum pumps will trip, but discharge valves remain open.

C* Both units' vacuum pump discharge valves will automatically close.

D. ONLY the unit 1 vacuum pump discharge valve will automatically close.

C. Correct. Discharge valves for both units vacuum pumps will close.
A. Incorrect. Both units' vacuum pump discharge valves will close and pumps will then trip.
B. Incorrect. Discharge valves will close.
D. Incorrect. (see A)
Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including: Radiation levels.

Question Number: 45

Tier 2 Group 1

Importance Rating: RO 3.2
Technical Reference: NCRODP-46-NA
Proposed references to be provided to applicants during examination: None
Learning Objective: OB 17679
Question Source: Bank
Question History: 5164
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

51. 076 GG2.1.2 001

Given the following:

- Both units are operating at 100% power.
- The unit 2 Service Water pumps are running.
- A rupture occurs on an expansion joint on the "B" SW header in the Auxiliary Building.
- The control room crew enters 0-AP-12, Loss of Service Water.
- The unit 2 "B" SW pump trips and the unit 1 "A" pump CANNOT be started.

Which ONE of the following describes the required action?

A. Enter action of T.S. 3.0.3 and commence a shutdown of Unit 1 ONLY within one hour.

B. Start unit 1 "B" SW pump to restore flow to one header.

C. Trip both reactors due to no flow to an intact header.

D. Evaluate the need to perform an orderly shut down on both units.

C. Correct. Total Loss of SW with inability to regain will require tripping both units per step 2 of AP.
A. Incorrect. This is the action for one loop inoperable, but both loops are inoperable.
B. Incorrect. Do not start a SW pump on a ruptured SW header.
D. Incorrect. Orderly shutdown is not appropriate with no SW flow.
Knowledge of operator responsibilities during all modes of plant operation.

Question Number: 46

Tier 2 Group 1

Importance Rating: RO 3.0

Technical Reference: 0-AP-12; TS-3.7.8
Proposed references to be provided to applicants during examination: None
Learning Objective: OB 19102
Question Source: Bank
Question History: 5901
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

52. 076 K1.17 001

Which ONE of the following describes the operation of the Radiation Monitoring Pumps on the Recirculation Spray Heat Exchangers following a large-break LOCA?

A. Starts immediately. Pump will stop when Phase B isolation is reset.

B. Starts immediately. Pump will only stop by resetting Phase B isolation and placing the pump in STOP.

C. Starts after 2 minutes. Pump will stop when Phase B isolation is reset.

D. Starts after 2 minutes. Pump will only stop by resetting Phase B isolation and placing the pump in STOP.

D. Correct. 1-SW-P-5, 6, 7, 8 will automatically start 2 minutes after CIB. Once running, it takes 2 actions to stop (if running due to auto actuation).
A and B are incorrect because the pump does not start immediately.
A and C are incorrect because the pump must be placed in STOP.
Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following: PRMS.

Question Number: 51

Tier 2 Group 1

Importance Rating: RO 3.6
Technical Reference: NCRODP-46-NA
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

53. 078 GG2.1.28 001

Which ONE of the following describes the function of the Turbine Building Instrument Air Dryer Bypass Valve, 2-IA-TV-211?

A. Opens at 90 psig decreasing instrument air header pressure; automatically closes above 90 psig increasing instrument air header pressure.

B. Opens at 90 psig decreasing instrument air header pressure; must be manually reset to close above 90 psig increasing instrument air header pressure.

C. Opens at 80 psig decreasing instrument air header pressure; automatically closes above 80 psig increasing instrument air header pressure.

D. Opens at 80 psig decreasing instrument air header pressure; must be manually reset to close above 80 psig increasing instrument air header pressure.

B. Correct. Dryer bypass will auto open at 90 psig and decreasing. Must be manually reset to allow closing valve.
A and C are incorrect because valve will not automatically close on increasing pressure.
C and D are incorrect because the pressure setpoint is 90 psig.

Distractors are plausible because they represent setpoints that are close to actual. Also plausible that signal resets without manual action.
Knowledge of the purpose and function of major system components and controls.

Question Number: 47

Tier 2 Group 1

Importance Rating: RO 3.2
Technical Reference: NCRODP-17-NA; 12050-P-IA-222
Proposed references to be provided to applicants during examination: None
Learning Objective: OB 18573
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

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

54. 078 K4.01 001

Given the following:

Service Air Compressor 1-SA-C-1 is in HAND.
Service Air Compressor 2-SA-C-1 is in AUTO.

Which ONE of the following describes the operation of each compressor in this configuration?

A. 1-SA-C-1 will run unloaded as long as SA pressure remains above its unload setpoint.

B. 2-SA-C-1 will run unloaded as long as SA pressure remains above its unload setpoint.

C. 1-SA-C-1 will load and unload at lower air pressure setpoints than 2-SA-C-1.

D. BOTH Service Air Compressors will load and unload at the same air pressure setpoints.

A. Correct. In HAND, if the compressor is running unloaded, it will remain running as long as SA pressure is > the unload S/P.
B. Incorrect. In AUTO, if the compressor is running unloaded for 15 minutes, it will shut down.
C. Incorrect. The compressor in HAND loads and unloads at higher SA pressure than the compressor in AUTO.
D. Incorrect. (see C).
Knowledge of design feature(s) and or interlock(s) which provide for the following: Manual/automatic transfers of control.

Question Number: 54

Tier 2 Group 1

Importance Rating: RO 2.7

Technical Reference: NCRODP-17-NA
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

55. 086 G2.1.28 001

Which ONE of the following best describes the operation of the pre-action sprinkler system for the Records Room vault?

A. Piping is always full of water requiring only sprinkler head actuation based on detection of either heat or smoke.

B. Sprinkler head actuates when heat is detected, to discharge compressed air, allowing water to flow through the system against a lowering pressure.

C. Compressed air is bled off when smoke is detected, allowing water to flow through the system against a lowering pressure.

D. A stop valve opens when smoke is detected, and then the sprinkler head actuates if exposed to heat.

D. Correct. Pre-Action requires operation of a stop valve prior to filling pipe, ensuring that failure of a sprinkler head will not cause system actuation.
A. Incorrect. Piping is not full of water and sprinkler heads do not actuate on smoke.
B. Incorrect. Piping is not full of compressed air and water will not flow unless smoke is detected.
C. Incorrect. Piping is not full of compressed air.

Distractors are credible because they all represent operation or partial operation of other fire protection systems
Knowledge of the purpose and function of major system components and controls.

Question Number: 61

Tier 2 Group 2

Importance Rating: RO 3.2

Technical Reference: NCRODP-6-NA
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:
Modified distractors significantly, but editorial in nature
MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D A D B C A C C C B Scramble Range: A - D

56. 103 K4.01 001

Which ONE of the following describes the operation of Containment Vacuum pumps 3A and 3B?

A. Automatically operate to maintain Containment Vacuum. A vacuum breaker ensures containment vacuum is not reduced below 5.5 psia.

B. Automatically operate to maintain Containment Vacuum. Vacuum breaker protection is NOT provided.

C. Manually operated to maintain Containment Vacuum. A vacuum breaker ensures containment vacuum is not reduced below 5.5 psia.

D. Manually operated to maintain Containment Vacuum. Vacuum breaker protection is NOT provided.

D. Correct. Pumps are manually operated to maintain containment vacuum within limits. Vacuum breaker protection is not required because it would take a vacuum pump running for a significant period of time (weeks) to lower vacuum enough to cause damage to containment. Multiple alarms exist to alert operators to containment vacuum below setpoint.
A and B are incorrect because vacuum pumps are not run in automatic.
A and C are incorrect because there is no vacuum breaker to protect containment from excessive vacuum.
Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following: Vacuum breaker protection.

Question Number: 48

Tier 2 Group 1

Importance Rating: RO 3.0
Technical Reference: NCRODP-57-NA
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

57. E03 EA2.1 002

Given the following conditions:

- A LOCA has occurred
- The crew is performing 1-E-1, Loss of Reactor or Secondary Coolant
- The following parameters exist:
  - All SG pressures – 930 psig and slowly trending down
  - All SG levels – being controlled at 42% NR
  - PRZR level – off-scale high
  - RVLIS Full Range indicates 20%
  - Containment Pressure – 23 psia
  - RWST level – 74% and decreasing slowly
  - RCS pressure – 800 psig and decreasing slowly

Based on these indications, which ONE of the following procedures will the crew enter next?

A. 1-ES-1.1, SI Termination

B. 1-ES-1.2, Post-LOCA Cooldown and Depressurization

C. 1-ES-1.3, Transfer to Cold Leg Recirculation

D. 1-E-2, Faulted Steam Generator Isolation

B-Correct. RCS Pressure not stable, and low RCS inventory (low reactor vessel level and high PRZR level indicates a large head bubble).
A-Incorrect. (see B)
C-Incorrect. RCS pressure and RWST level are high. Entry to ES-1.3 on low RWST level.
D-Incorrect. SG pressures are trending down because RCS temperature is trending down.

QUESTIONS REPORT
for POST NRC REVIEW R1

Ability to determine and interpret the following as they apply to: Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

Question Number: 24

Tier 1 Group 2

Importance Rating: RO 3.4

Technical Reference: 1-E-1
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History: WTSI Bank (Harris 2005 Audit)
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41/43

Comments:

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

58. E04 EK3.4 001

Given the following conditions:

- A LOCA outside containment has occurred.
- The crew is performing the actions in 1-ECA-1.2, LOCA Outside Containment.

Which ONE of the following actions will be attempted to isolate the break and which indication is used to determine if the leak has been isolated in accordance with 1-ECA-1.2?

A. Isolate Low Head Safety Injection piping; RCS pressure is monitored, because SI flow will repressurize the RCS with the break isolated.

B. Isolate Low Head Safety Injection piping; PRZR level is monitored, because with the break isolated, RCS inventory will rapidly rise.

C. Isolate High Head Safety Injection piping; RCS pressure is monitored, because SI flow will repressurize the RCS with the break isolated.

D. Isolate High Head Safety Injection piping; PRZR level is monitored, because with the break isolated, RCS inventory will rapidly rise.

A-Correct. Per 1-ECA-1.2, monitor RCS pressure. The design basis LOCA outside containment is on the LHSI piping, not HHSI piping.
B and D are incorrect because RCS inventory will increase, but may not immedaitely show up on PRZR level.
C and D are incorrect because the design basis LOCA outside containment is on LHSI piping
Knowledge of the reasons for the following responses as they apply to: RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.

Question Number: 15

Tier 1 Group 1

Importance Rating: RO 3.6

Technical Reference: 1-ECA-1.2
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History: Harris 2005 NRC (Editorially Modified)
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

59. E05 EK1.3 001

A reactor trip has occurred due to a loss of all feedwater.

The following conditions exist:

The crew has entered 1-FR-H.1, Response To Loss of Secondary Heat Sink.
SG levels are 38% wide range and slowly trending down.
RCS pressure is 2040 psig and lowering.
SG pressure is 1040 psig and lowering.
Annunciators AUX FD PP 3A-3B AUTO TRIP and TURBINE DRIVEN AFW PUMP TROUBLE OR LUBE OIL TRBL are both lit.

Which ONE of the following is performed NEXT?

A. Stop RCPs and attempt to initiate main feedwater flow.

B. Stop RCPs and establish bleed and feed cooling of the RCS.

C. Return to 1-E-1, Loss Of Reactor Or Secondary Coolant, for the LOCA in progress.

D. Depressurize SGs and initiate feed using the condensate pumps.

A. Correct. These are the next actions per 1-FR-H.1.

B. Incorrect. Bleed and feed is only required if SG WR level is less than 14% (32% adverse).

C. Incorrect. No LOCA indicated. RCS pressure is greater than SG pressures.

D. Incorrect. Action may be taken if AFW cannot be restarted and MFW cannot be started.

QUESTIONS REPORT
for POST NRC REVIEW R1

Knowledge of the operational implications of the following concepts as they apply to the: Annunciators and conditions indicating signals, and remedial actions associated with the Loss of Secondary Heat Sink.

Question Number: 18

Tier 1 Group 1

Importance Rating: RO 3.9

Technical Reference: 1-FR-H.1, 1-AR-F-D8, 1-AR-F-C5
Propcsed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History: BVPS-2 2002 NRC
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

QUESTIONS REPORT
for POST NRC REVIEW R1

1. E06 EK3.1 004

Which ONE of the following describes the parameter and the reason that a RED condition on the Integrity CSF status tree may develop while performing actions of 1-FR-C.2, Response to Degraded Core Cooling?

A. Core exit thermocouple temperature will decrease rapidly when charging or LHSI pumps are started and SI flow is initiated.

B. Core exit thermocouple temperature will decrease rapidly when SG depressurization and SI accumulator injection occur.

C. RCS cold leg temperature will decrease rapidly when charging or LHSI pumps are started and SI flow is initiated.

D✓ RCS cold leg temperature will decrease rapidly when SG depressurization and SI accumulator injection occur.

D. Correct. SG depressurization will cause T cold to rapidly decrease. NOTE in FR-C.2 warns of RED condition on Integrity.
A. Incorrect. CETCs will decrease when SI is started, but CETCs do not input to the Integrity CSF status tree.
B. Incorrect. Condition will exist, but CETCs do not input to the Integrity CSF status tree.
C. Incorrect. Starting charging or LHSI would raise inventory and cause transition to procedure in effect. It will not cause a cooldown that will result in the Integrity CSF status tree RED path.
Knowledge of the reasons for the following responses as they apply to: Facility operating characteristics during transient conditions, including coolant chemistry and the effects of temperature, pressure and reactivity changes and operating limitations and reasons for these operating characteristics.

Question Number: 27

Tier 1 Group 2

Importance Rating: RO 3.4

Technical Reference: 1-FR-C.2
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

61. E09 EA1.3 002

Given the following conditions:

A reactor trip has occurred due to a loss of offsite power.
The crew is performing actions of 1-ES-0.2A, Natural Circulation Cooldown with CRDM Fans.
RVLIS is NOT available.
The crew has commenced RCS cooldown and depressurization.

The following conditions are indicated:

RCS pressure is 2030 psig and trending DOWN.
RCS Tavg is 547°F and trending DOWN slowly.
PRZR Level is 26% and stable.

Which ONE of the following actions is required?

A. Continue depressurization to 1950 psig and block the Low PRZR Pressure SI inputs.

B. Initiate Safety Injection and go to 1-E-0, Reactor Trip Or Safety Injection.

C. Stop the cooldown and depressurization, block the Low PRZR Pressure SI inputs, and resume cooldown and depressurization.

D. Stop the depressurization and go to 1-ES-0.4, Natural Circulation Cooldown With Steam Void In Vessel (Without RVLIS)

A. Correct. For the stated conditions, the next action is to depressurize and block Low PRZR pressure SI.
B. Incorrect. SI actuation criteria are not met.
C. Incorrect. RCS must be depressurized to 1950 psig prior to blocking Low PRZR SI inputs.
D. Incorrect. Indications of voiding, or conditions that may cause voiding, do not exist.

QUESTIONS REPORT
for POST NRC REVIEW R1

Ability to operate and/or monitor the following as they apply to : Desired operating results during abnormal and emergency situations.

Question Number: 25

Tier 1 Group 2

Importance Rating: RO 3.5

Technical Reference: 1-ES-0.2A
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History: WTSI Bank (Harris Audit Exam)
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

62. E10 EK2.2 001

Given the following:

- The reactor was tripped due to a loss of all Component Cooling Water.
- The crew is performing the actions of 1-ES-0.4, Natural Circulation Cooldown with Steam Void in Vessel (without RVLIS)

The following conditions currently exist:

- RCS pressure is 1600 psig
- RCS temperature is 450°F

Which ONE of the following describes the reason for equalizing charging and letdown flows during the subsequent depressurization?

A. Allows pressurizer level to be used to monitor void growth.

B. Charging and letdown flows by themselves are the only true measure of RCS inventory at this point in the procedure.

C. Ensures that stable conditions are established to ensure that the pressurizer does not go solid.

D. Ensures pressurizer heaters will remain energized and available to collapse any voids that may be present.

A. Correct. Equalizing Charging and letdown will allow the crew to determine that RCS inventory is not changing. Without RVLIS, the only way to determine if the void is growing is to determine if PRZR level is changing. The PRZR may indicate 100% due to void growth, but the size of the void is measured by the amount of level increase if charging and letdown is equal.
B. Incorrect. Matched charging and letdown flows must be used in conjunction with PRZR level to guage RCS inventory.
C. Incorrect. PRZR going solid is not a concern, since a head bubble will exist and RCS overpressurization will not occur.
D. Keeping PRZR heaters covered is not the goal of matching charging and letdown flows.

QUESTIONS REPORT
for POST NRC REVIEW R1

Knowledge of the interrelations between (Emergency Plant Evolution) and the following: Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems and relations between the proper operation of these systems to the operation of the facility.

Question Number: 26

Tier 1 Group 2

Importance Rating: RO 3.6

Technical Reference: 1-ES-0.4
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History: Wolf Creek (2006 Audit)
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

63. E11 EK2.1 001

Given the following conditions:

- A LOCA has occurred.
- Due to multiple equipment failures, the crew is performing actions of 1-ECA-1.1, Loss Of Emergency Coolant Recirculation.
- Two charging pumps and two LHSI pumps are running.
- RWST level is approximately 3% and continues to lower.

Which ONE of the following describes the NEXT actions required in accordance with 1-ECA-1.1?

A. Stop BOTH Quench Spray pumps, ONE charging pump and ONE LHSI pump and verify NO backflow from the RWST to containment sump.

B. Stop BOTH Quench Spray pumps, ONE charging pump and ONE LHSI pump and initiate secondary depressurization to facilitate SI accumulator injection.

C. Stop ALL pumps taking a suction from the RWST and verify NO backflow from the RWST to containment sump.

D. Stop ALL pumps taking a suction from the RWST and initiate secondary depressurization to facilitate SI accumulator injection.

A. Incorrect. RWST level is too low to leave any pumps running.
B. Incorrect. RWST level is too low to leave any pumps running.
C. Incorrect. Correct action for pumps, but instead of being concerned with backflow, the crew must initiate depressurization.
D. Correct. RWST level at 3% requires immediately stopping all pumps taking suction from the RWST.

QUESTIONS REPORT
for POST NRC REVIEW R1

Knowledge of the interrelations between (Emergency Plant Evolution) and the following: Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.

Question Number: 16

Tier 1 Group 1

Importance Rating: RO 3.6

Technical Reference: ECA-1.1
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History: BVPS-2 2005 NRC
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

64. E12 EK2.1 001

Given the following conditions:

-1-ECA-2.1, Uncontrolled Depressurization of All Steam Generators is being performed.
-The crew has reduced AFW flow to all steam generators (SG) to minimum as they continue attempts to isolate the SGs.

Which ONE of the following describes the expected plant response to the AFW flow reduction and what actions are to be taken as SG pressures decrease?

A. RCS hot leg temperatures will eventually begin to increase due to reduction of SG inventory and the crew will then transition to 1-ES-1.1, Safety Injection Termination.

B✓ RCS hot leg temperatures will eventually begin to increase due to reduction in SG inventory and the crew will then increase AFW flow while continuing in 1-ECA-2.1, Uncontrolled Depressurization of All Steam Generators.

C. The SGs will eventually become completely depressurized due to inadequate secondary heat sink and the crew will then transition to 1-E-2, Faulted Steam Generator Isolation.

D. The SGs will eventually become completely depressurized due to inadequate secondary heat sink and the crew will then transition to 1-ES-1.1, Safety Injection Termination.

B. Correct. When AFW flow is reduced, eventually hot leg temperatures will rise when SG inventory is depleted. The purpose of minimizing AFW flow is to minimize RCS cooldown and inventory loss.
A. Incorrect. 1-ECA-2.1 must be performed to completion unless a SG is isolated or tubes rupture.
C. Incorrect. The SGs depressurize as long as they are faulted, but transition to 1-E-2 is only performed when 1 SG repressurizes.
D. Incorrect. (see A).

QUESTIONS REPORT
for POST NRC REVIEW R1

Knowledge of the interrelations between (Emergency Plant Evolution) and the following: Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.

Question Number: 17

Tier 1 Group 1

Importance Rating: RO 3.4

Technical Reference: 1-ECA-2.1
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History: Harris 2003 NRC
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

65. E15 EG2.1.23 001

Given the following conditions:

-A LOCA has occurred.
-RCS pressure is 220 psig.
-Containment pressure peaked at 41 psia.
-Containment Pressure is 26 psia and lowering slowly.
-All automatic actuations have occurred as required.
-The crew is about to transition from 1-E-0, Reactor Trip or Safety Injection.
-Due to an ORANGE condition on the Containment CSF Status Tree, the US has determined that transition to FR-Z.2, Response to High Containment Sump Level is required.

Which ONE of the following describes the likely sources of leakage that may require action to isolate?

A. Component Cooling Water

B. Service Water

C. Primary Grade Water

D. Chilled Water

B. Correct. Service Water will be flowing to the RS Heat Exchangers.
A, C, and D are all incorrect because CCW, Chilled Water and PG are all isolated by either CIA and/or CIB actuations.
Ability to perform specific system and integrated plant procedures during all modes of plant operation.

Question Number: 23

Tier 1 Group 2

Importance Rating: RO 3.9

Technical Reference: 1-FR-Z.2
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

66. G2.1.1 001

Valve lineups are in progress to support unit startup. The valve lineup being worked specifies that a valve should be "locked 2 turns open."

Which ONE of the following correctly describes the process for initially checking, and for independently verifying the valve's position?

A. The valve should be fully closed, then re-opened 2 turns with a simultaneous verifier observing and concurring that the valve is opened 2 turns, then the lock should be installed.
The independent verifier should verify the lock is properly installed on the correct valve.

B. The valve should be fully closed, then re-opened 2 turns, then the lock should be installed. No SV is required.
The independent verifier should visually verify valve position and check that the lock is properly installed.

C. The valve should be fully closed, then re-opened 2 turns with a simultaneous verifier observing and concurring that the valve is opened 2 turns, then the lock should be installed.
The independent verifier should remove the lock and fully close the valve, then re-open the valve 2 turns and install the lock.

D. The valve should be fully closed, then re-opened 2 turns with a simultaneous verifier observing and concurring that the valve is opened 2 turns.
The independent verifier should visually verify valve position and install the lock.

A. Correct. The valve would be simultaneously verified when it was positioned since an OP-1A was being performed (could not be sure of valve's initial position). The IV'er would verify that a lock was installed on the correct valve and that it was properly locked (plant OE where a lock was found to be improperly locked).
B. Incorrect. The valve would need to be simultaneously verified when it was positioned. The IV'er would be unable to determine whether the valve was in the correct position. This is the way a locked closed or locked open valve would be positioned and verified.
C. Incorrect. There still needs to be independent verification that the lock is installed correctly on the valve.
D. Incorrect. This would ensure the valve was placed in the correct position; however, without the lock being initially installed, there would be no guarantee that it was still positioned correctly when the IV'er arrived.

Knowledge of conduct of operations requirements.

Question Number: 68

Tier 3 Group 1

Importance Rating: RO 3.7

Technical Reference: OPAP-0012
Proposed references to be provided to applicants during examination: None
Learning Objective: 13611
Question Source: Bank
Question History: North Anna 2004 NRC
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

Conduct of Operations
Knowledge of conduct of operations requirements

North Anna bank question 60113

References:
OPAP-0012
Objective 13611 in study guide for Administrative procedures (Not included as is parrots OPAP-0012)

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

67. G2.1.22 001

RCS temperature is currently stable at 355° F. Rated thermal power is <5% and Keff is <0.99.

Which ONE of the following is the correct operational mode for the given condition?

A. Mode 5

B. Mode 4

C. Mode 3

D. Mode 2

Incorrect. Mode 5 is defined as < 200°F.
Incorrect. Mode 4 is defined as > 200°F but < 350°F
Correct. Mode 3 is defined as > 350°F.
Incorrect. Mode 2 is defined as < 5% power.

Ability to determine Mode of Operation.

Question Number: 67

Tier 3 Group 1

Importance Rating: RO 2.8
Technical Reference: TS Table 1.1-1
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: MODIFIED
Question History: MOD From 2004 NRC Exam
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

68. G2.1.3 001

As the Unit-2 OATC, you are preparing to take a mid-day meal break.

Based on the requirements of OPAP-0005, "Shift Relief and Turnover," which of the following is required?

A. All OATC activities in progress prior to turnover must be suspended for the duration of the break.

B. Your relief may NOT have any other concurrent duties while at the controls.

C. You must complete a shift turnover checklist.

D. BOTH unit SROs must be informed of the turnover.

B. Correct. For rest room and meal breaks, short-term relief is all that is required. No other duties allowed
A. Incorrect. There is no requirement to stop all activities, only to ensure the unit is stable prior to turnover.
C. Incorrect. No checklist required for short term relief.
D. Incorrect. Only the responsible SRO is required to be notified
Knowledge of shift turnover practices.

Question Number: 66

Tier 3 Group 1

Importance Rating: RO 3.0

Technical Reference: OPAP-0005
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

69. G2.2.11 001

In accordance with VPAP-1403, Temporary Modifications, which ONE of the following conditions must be controlled as a Procedurally Controlled Temporary Modification?

A. Plugs installed in floor drains in the New Fuel Receiving area.

B. Portable HVAC unit installed in Warehouse #5 fire pump house.

C. Temporary lead shielding package installed per applicable VPAP.

D. Hose connected to 2-CD-289, CD circ pumps discharge drain valve, for CD system blowdown.

A. Correct. Per VPAP-1403, this requires a PCTM.
B, C, and D are all incorrect. The stated conditions are all excluded from being controlled as TMs per VPAP-1403.
Knowledge of the process for controlling temporary changes.

Question Number: 69

Tier 3 Group 2

Importance Rating: RO 2.5

Technical Reference: VPAP-1403
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

70. G2.2.24 001

Which ONE of the following activities requires entry into a technical specification LCO limiting action statement? Assume both units at 100% power.

A. 1-CC-P-1B seal repair with the remaining CCW subsystems operable

B. Breaker PMs on PRZR backup heater group 5 supply breaker

C. Casing cooling tank level transmitter loop calibration per ICP

D. Boron injection tank recirculation local flow indicator leak repair

C. Correct. Per 1-ICP-RS-L-103A and TS-3.6.7, performance of LT loop calibration renders the associated train of Containment Recirculation Spray inoperable.
A. Incorrect. Per TS-3.7.19, with either unit in Mode 1 - 4, a single CC subsystem can be removed from service without entering the TS action (TS-3.7.19 only requires three out of four CC subsystems to be operable). Plausible if candidate believes all four CC subsystems must be operable.
B. Incorrect. Per TS-3.4.9, with unit in mode 1 - 3, two groups of PRZR heaters must be operable and capable of being powered from emergency bus. Backup heater group 5 is powered from SS bus. Plausible is candidate believes group 5 is powered from emergency bus.
D. Incorrect. Per SR-3.5.6.2, with unit in mode 1 - 3, BIT volume must be verified in spec every 7 days. The BIT recirc flow indicator is used to satisfy this surveillance. If the flow indicator is removed from service for leak repair, the surveillance is satisfied by opening a vent on top of the BIT. This does not render the BIT inoperable. Plausible if candidate misunderstands the definition of a limiting action.
Ability to analyze the affect of maintenance activities on LCO status.

Question Number: 70

Tier 3 Group 2

Importance Rating: RO 2.6
Technical Reference: 1-ICP-RS-L-103A; TS-3.7.19; TS-3.4.9; TS-3.5.6; PRZR Control & Protection Self-Study Guide, p. 20
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

71. G2.2.4 001

Which ONE of the following identifies a difference between unit 1 and unit 2?

A. Unit 1 train "A" emergency loads are normally powered from "B" RSST;
Unit 2 train "A" emergency loads are normally powered from "A" RSST.

B. Common radiation monitors are powered from either unit 1 train "B" (1J1-1) or unit 2 train "A" (2H1-1).

C✓ Unit 1 train "A" emergency loads are normally powered from "C" RSST;
Unit 2 train "A" emergency loads are normally powered from "B" RSST.

D. Common radiation monitors are powered from either unit 1 train "A" (1H1-1) or unit 2 train "B" (2J1-1).

C. Correct. Unit-1 train A is supplied from "C" RSST; unit-2 train "A" is supplied from "B" RSST.
A. Incorrect. (see C).
B and D are incorrect. Common Radiation Monitors are powered from 1J1-1 and 2J1-1.
Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility.

Question Number: 71

Tier 3 Group 2

Importance Rating: RO 2.8

Technical Reference:
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

72. G2.3.2 001

Which ONE of the following is NOT part of the ALARA plan for reducing dose during a unit refueling outage?

A. Using the gas stripper to degas the primary during RCS cooldown.

B. Fully opening one RCS loop bypass MOV during RCS cooldown.

C. Fully opening PRZR spray valves one at a time after blocking Low PRZR Pressure SI inputs.

D. Keeping RCPs running as long as possible during RCS cooldown.

A. Correct. The RCS is degassed to reduce hydrogen concentration to allow the loops to be opened for maintenance.

B. Incorrect. This is an ALARA practice to allow cleanup of the inactive bypass lines. This answer could be chosen if the examinee does not realize that it is allowable to open one bypass MOV as long as the other two RCS loops are operable.

C. Incorrect. This is an ALARA practice to flush hot spots out of the spray lines. Examinee could choose this answer if he/she does not realize that a spray valve may be opened as long as RCP NPSH requirements and pressurizer cooldown limits are monitored.

D. Incorrect. Keeping the RCPs running during cooldown keeps crud deposits from forming in the idle loops causing hot spots. An examinee could choose this answer if he/she does not realize that hot spots can form in idle loops.

Knowledge of facility ALARA program.

Question Number: 73

Tier 3 Group 3

Importance Rating: RO 2.5

Technical Reference: 1-OP-3.2, "Unit Shutdown from Mode 3 to Mode 4."
Proposed references to be provided to applicants during examination: None
Learning Objective: 12958
Question Source: Bank
Question History: 2004 NRC Exam
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

73. G2.3.9 001

Given the following:

Unit 1 has just entered Mode 5.
A Containment Purge is being initiated per 1-OP-21.2, Containment Purge.
Containment Partial Pressure is 9.8 psia.
The crew is preparing to establish atmospheric conditions in Containment.

Which ONE of the following describes the method that will be used to establish atmospheric conditions in Containment?

A. Open 1-HV-MOV-102, CONT PURGE RELIEF VALVE

B. Open 1-MOV-HV-100A **OR** 1-MOV-HV-100B, CONT PURGE SUPPLY VALVE

C. Open 1-MOV-HV-100A **AND** 1-MOV-HV-100B, CONT PURGE SUPPLY VALVE

D. Open 1-MOV-HV-101, CONT PURGE EXH BYPASS VALVE

A. Correct. Relief Valve is used for raising containment pressure to atmospheric
B and C are incorrect. Outside Purge Supply valve should not be opened because it could cause a collapse of Purge system ductwork, although the actions would result in Cnmt pressure increase
D is incorrect. Valve would be opened when purge initiated if less than 11000 CFM. Opening the valve would cause containment pressure to rise.
Knowledge of the process for performing a containment purge.

Question Number: 72

Tier 3 Group 3

Importance Rating: RO 2.5

Technical Reference: 1-OP-21.2
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

74. G2.4.14 001

Given the following conditions:

A LOCA has occurred.
'A' train ECCS equipment is operating as required.
'B' train is deenergized and ECCS equipment HAS NOT been started.
The US has announced transition to 1-E-1, Loss of Reactor or Secondary Coolant.
Critical Safety Function Status Trees indicate the following:

SUBCRITICALITY	GREEN
CORE COOLING, INTEGRITY, and CONTAINMENT	ORANGE
HEAT SINK and INVENTORY	YELLOW

Which ONE of the following actions shall be taken?

A. Transition to 1-FR-C.1, Response to Inadequate Core Cooling.

B✓ Transition to 1-FR-C.2, Response to Degraded Core Cooling.

C. Transition to 1-FR-Z.1, Response to High Containment Pressure.

D. Attempt to restore power to Train 'B' equipment in 1-E-1, then transition to the highest priority procedure if conditions cannot be cleared.

Orange condition on Core Cooling requires transition to FR-C.2. A is incorrect but credible because some CSF status trees require entry to top level procedures for red or orange conditions. C is credible because FR-Z.1 would be entered on orange condition, and criteria is met. D is incorrect because the action would have been taken in 1-E-0, not in E-1. Once monitoring is in progress, go directly to the highest level FR procedure with condition met.

QUESTIONS REPORT
for POST NRC REVIEW R1

Knowledge of general guidelines for EOP flowchart use.

Question Number: 74

Tier 3 Group 4

Importance Rating: RO 3.0

Technical Reference: EOP User's Guide, F-0.2
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: Bank
Question History: BVPS-2 NRC 2005
Question Cognitive Level: Higher
10 CFR Part 55 Content: 41

Comments:

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

75. G2.4.43 001

A Notification of Unusual Event has been declared.

Which ONE of the following describes the MINIMUM requirement for notification or communication with the NRC?

Notify the NRC within...

A. 15 minutes of event classification using the Emergency Notification System phone.

B. 15 minutes of event classification using a commercial phone line and Emergency Response Data System (ERDS) link.

C. 1 hour of event classification using the Emergency Notification System phone.

D. 1 hour of event classification using a commercial phone line and ERDS link.

C is correct. Commercial phones may be used if ENS is not available. ERDS is activated for ALERT and above

Knowledge of emergency communications systems and techniques.

Question Number: 75

Tier 3 Group 4

Importance Rating: RO 2.8

Technical Reference: EPIP-2.02
Proposed references to be provided to applicants during examination: None
Learning Objective:
Question Source: New
Question History:
Question Cognitive Level: Lower
10 CFR Part 55 Content: 41

Comments:

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

Final Submittal

(Blue Paper)

FINAL SAMPLE PLANS / OUTLINES

FNM2

Facility: North Anna													Date of Exam				
Tier	Group	RO K/A Category Points											SRO-Only Points				
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	Total
1. Emergency & Abnorma Plant Evoulution:	1	3	3	3				3	3			3	18					
	2	2	1	1				2	2			1	9					
	Tier Totals	5	4	4				5	5			4	27					
2. Plant Systems	1	3	3	3	2	2	3	3	2	3	2	2	28					
	2	1	0	1	2	1	0	0	1	0	2	2	10					
	Tier Totals	4	3	4	4	3	3	3	3	3	4	4	38					
3. Generic Knowledge and Abilities Category					1		2		3		4			1	2	3	4	
					3		3		2		2		10					

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO outline (i.e., the "Tier Totals" in each K/A category shall not be less than two). Refer to Section D.1.c for additional guidance regarding SRO sampling.
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Select topics from many systems and evolutions; avoid selecting more than two K/A topics from a given system or evolution unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category/tier.
6.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. The SRO K/As must also be linked to 10 CFR 55.43 or an SRO-level learning objective.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the applicable license level, and the point totals for each system and category. Enter the group and tier totals for each category in the table above; summarize all the SRO-only knowledge and non-A2 ability categories in the columns labeled "K" and "A". Use duplicate pages for RO and SRO-only exams.
8. For Tier 3, enter the K/A numbers, descriptions, importance ratings, and point totals on Form ES-401-3.
9. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A

Tier 1 Group 1

ame/Safety Function	K1	K2	K3	A1	A2	G	KA	Question Type	K/A Topic(s)	RO	SRO
Reactor Trip - Stabilization - Recovery / 1	0	0	0	0	1	0	007EA2.05 (1)	Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Reactor trip first-out indication	3.4	3.9
Pressurizer Vapor Space Accident / 3	0	0	0	1	0	0	008AA1.02 (2)	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	HPI pump to control PZR level/pressure	4.1	3.9
Small Break LOCA / 3	0	0	1	0	0	0	009EK3.27 (3)	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	Manual depressurization or HPI recirculation for sustained high pressure	3.6	3.8
Large Break LOCA / 3	0	0	0	0	0	0	011EK2.02	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	K/A Randomly Rejected	2.6	2.7
RCP Malfunctions / 4	0	0	0	1	0	0	015AA1.07 (4)	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	RCP seal water injection subsystem	3.5	3.4
Loss of Rx Coolant Makeup / 2	0	0	1	0	0	0	022AK3.05 (5)	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	Need to avoid plant transients	3.2	3.4
Loss of RHR System / 4	0	0	0	1	0	0	025AA1.19 025 AA 1. 03 (6)	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	Block orifice bypass valve controller and indicators	2.6	2.4

Tier 1 Group 1

ame/Safety Function	K1	K2	K3	A1	A2	G	KA	Question Type	K/A Topic(s)	RO	SRO
oss of Component ooling Water / 8	0	0	0	0	0	0	026AK2	Knowledge of the interrelations between (ABNORMAL PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	K/A Randomly Rejected	0	0
ressurizer Pressure ontrol System alfunction / 3	0	1	0	0	0	0	027AK2.03 (7)	Knowledge of the interrelations between (ABNORMAL PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	Controllers and positioners	2.6	2.8
TWS / 1	0	0	0	0	0	1	029EG2.2.22 (8)	This is a Generic, no stem statement is associated.	Knowledge of limiting conditions for operations and safety limits.	3.4	4.1
team Gen. Tube upture / 3	0	0	0	0	1	0	038EA2.16 (9)	Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Actions to be taken if S/G goes solid and water enters steam line	4.2	4.6
team Line Rupture - xcessive Heat ransfer / 4	0	0	0	0	0	0	040AK2.02	Knowledge of the interrelations between (ABNORMAL PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	K/A Randomly Rejected	2.6	2.6
oss of Main eedwater / 4	0	0	0	0	0	0	054AA1.01	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	K/A Randomly Rejected	4.5	4.4
tation Blackout / 6	0	0	0	0	0	0	055EG2.1.27	This is a Generic, no stem statement is associated.	K/A Randomly Rejected	2.8	2.9
oss of Off-site Power /	1	0	0	0	0	0	056AK1.03 (10)	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Definition of subcooling: use of steam tables to determine it	3.1	3.4

Tier 1 Group 1

ame/Safety Function	K1	K2	K3	A1	A2	G	KA	Question Type	K/A Topic(s)	RO	SRO
.oss of Vital AC Inst. Bus / 6	0	0	0	0	1	0	057AA2.02 057AA2.15 II	Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Core flood tank pressure and level indicators	3.7	3.8
.oss of DC Power / 6	1	0	0	0	0	0	058AK1.01	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Battery charger equipment and instrumentation	2.8	3.1
.oss of Nuclear Svc Water / 4	0	0	0	0	0	1	062AG2.4.6	This is a Generic, no stem statement is associated.	Knowledge symptom based EOP mitigation strategies.	3.1	4
.oss of Instrument Air /	0	0	0	0	0	1	065AG2.1.23	This is a Generic, no stem statement is associated.	Ability to perform specific system and integrated plant procedures during all modes of plant operation.	3.9	4
.OCA Outside Containment / 3	0	0	1	0	0	0	WE04EK3.4	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.	3.6	3.8
.oss of Emergency Coolant Recirc. / 4	0	1	0	0	0	0	WE11EK2.1	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.	3.6	3.9
Steam Line Rupture - Excessive Heat Transfer / 4	0	1	0	0	0	0	WE12EK2.1	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.	3.4	3.7

Tier 1 Group 1

ame/Safety Function	K1	K2	K3	A1	A2	G	KA	Question Type	K/A Topic(s)	RO	SRO
nadequate Heat Transfer - Loss of Secondary Heat Sink /	1	0	0	0	0	0	WE05EK1.3	Knowledge of the operational implications of the following concepts as they apply to the EMERGENCY PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Annunciators and conditions indicating signals, and remedial actions associated with the (Loss of Secondary Heat Sink).	3.9	4.1

Tier 1 Group 2

Name / Safety Function	K1	K2	K3	A1	A2	G	KA	Question Type	K/A Topic(s)	RO	SRO
Continuous Rod Withdr	0	0	0	0	0	0	001AA1.06	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	K/A Randomly Rejected	3	2.9
Dropped Control Rod /	0	0	0	0	1	0	003AA2.04	Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Rod motion stops due to dropped rod	3.4	3.6
Inoperable/Stuck Contr	0	0	0	0	0	0	005AA2.01	Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	K/A Randomly Rejected	3.3	4.1
Emergency Boration / 1	0	0	0	0	0	0	024AK1.02	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	K/A Randomly Rejected	3.6	3.9
Pressurizer Level Malfu	0	0	0	0	0	0	028AK1.01	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	K/A Randomly Rejected	2.8	3.1
Loss of Source Range I	0	0	0	0	0	0	032AK2.01	Knowledge of the interrelations between (ABNORMAL PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	K/A Randomly Rejected	2.7	3.1
Loss of Intermediate Ra	0	0	0	0	0	0	033AK1.01	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	K/A Randomly Rejected	2.7	3
Fuel Handling A nt	0	0	0	1	0	0	036AA1.03	Ability to operate and monitor the following as they apply (ABNORMAL	Reactor building containment evacuation alarm enable switch		3.9

Tier 1 Group 2

Name / Safety Function	K1	K2	K3	A1	A2	G	KA	Question Type	K/A Topic(s)	RO	SRO
								PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)			
Steam Generator Tube	0	0	0	0	0	0	037AA2.01	Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	K/A Randomly Rejected	3	3.4
Loss of Condenser Vac	0	0	0	0	0	0	051AA2.02	Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	K/A Randomly Rejected	3.9	4.1
Accidental Liquid RadW	0	0	0	0	0	0	059AK3.03	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	K/A Randomly Rejected	3	3.7
Accidental Gaseous Ra	0	0	0	0	0	0	060AK1.04	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	K/A Randomly Rejected	2.5	3.7
ARM System Alarms / 7	1	0	0	0	0	0	061AK1.01	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Detector limitations	2.5	2.9
Plant Fire On-site / 9 8	0	0	0	0	0	0	067AK3.04	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	K/A Randomly Rejected	3.3	4.1
Control Room Evac / 8	0	0	0	0	0	0	068AK1	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR:	K/A Randomly Rejected	0	0

Tier 1 Group 2

lame / Safety Function	K1	K2	K3	A1	A2	G	KA	Question Type	K/A Topic(s)	RO	SRO
								41.8 to 41.10 / 45.3)			
.oss of CTMT Integrity /	1	0	0	0	0	0	069AK1.01	Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Effect of pressure on leak rate	2.6	3.1
nad. Core Cooling / 4	0	0	0	0	0	0	074EK3.10	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	K/A Randomly Rejected	3.5	3.8
High Reactor Coolant A	0	0	0	0	0	0	076AA1.04	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	K/A Randomly Rejected	3.2	3.4
Rediagnosis / 3	0	0	0	0	0	0	WE01EG2.2.22	This is a Generic, no stem statement is associated.	K/A Randomly Rejected	3.4	4.1
Steam Generator Over-	0	0	0	0	0	0	WE13EK2.1	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	K/A Randomly Rejected	3.0	3.1
Containment Flooding /	0	0	0	0	0	1	WE15EG2.1.33	This is a Generic, no stem statement is associated.	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4	4
High Containment Radi	0	0	0	0	0	0	WE16EA2.2	Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	K/A Randomly Rejected	3.0	3.3
SI Termination / 3	0	0	0	0	0	0	WE02EK2.1	Knowledge of the inte...tions between	K/A Randomly Rejected		3.9

Tier 1 Group 2

lame / Safety Function	K1	K2	K3	A1	A2	G	KA	Question Type	K/A Topic(s)	RO	SRO
								(EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)			
.OCA Cooldown - Depı	0	0	0	0	1	0	WE03EA2.1	Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Facility conditions and selection of appropriate procedures during abnormal and emergency operations.	3.4	4.2
latural Circ. / 4	0	0	0	1	0	0	WE09EA1.3	Ability to operate and / or monitor the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	Desired operating results during abnormal and emergency situations.	3.5	3.8
latural Circ. With Sean	0	1	0	0	0	0	WE10EK2.2	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems and relations between the proper operation of these systems to the operation of the facility.	3.6	3.9
RCS Overcooling - PTS	0	0	0	0	0	0	WE08EG2.1.32	This is a Generic, no stem statement is associated.	K/A Randomly Rejected	3.4	3.8
Degraded Core Cooling	0	0	1	0	0	0	WE06EK3.1	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	Facility operating characteristics during transient conditions, including coolant chemistry and the effects of temperature, pressure and reactivity changes and operating limitations and reasons for these operating characteristics.	3.4	3.8
Saturated Core Cooling	0	0	0	0	0	0	WE07EG2.4.49	This is a Generic, no stem statement is associated.	K/A Randomly Rejected	4	4
Loss of CTMT Integrity	0	0	0	0	0	0	WE14EG2.4.49	This is a Generic, no stem statement is associated.	K/A Randomly Rejected	4	4

Tier 2 Group 1

ame / Safety Functio	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Question Type	K/A Topic(s)	KA	RO	SRO
eactor Coolant ump	0	0	0	0	0	1	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	Containment isolation valves affecting RCP operation	003K6.04	2.8	3.1
hemical and olume Control	0	0	0	0	1	0	0	0	0	0	0	Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.7)	Types and effects of radiation, dosimetry and shielding-time-distance	004K5.17	2.6	3.1
esidual Heat emoval	0	0	0	0	1	0	0	0	0	0	0	Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.7)	Need for adequate subcooling	005K5.02	3.4	3.5
mergency Core ooling	0	0	0	0	0	1	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	HPI/LPI systems (mode change)	006K6.19	3.7	3.9
ressurizer elief/Quench Tank	0	0	0	0	0	0	0	0	1	0	0	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	Components which discharge to the PRT	007A3.01	2.7	2.9
omponent Cooling Vater	0	0	0	0	0	0	0	0	0	1	0	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	Control of minimum level in the CCWS surge tank	008A4.07	2.9	2.9
ressurizer ressure Control	0	1	0	0	0	0	0	0	0	0	0	Knowledge of electrical power supplies to the following:(CFR: 41.7)	Controller for PZR spray valve	010K2.02	2.5	2.7
eactor Protection	0	0	0	0	0	0	0	0	1	0	0	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	Single and multiple channel trip indicators	012A3.05	3.6	3.7
ngineered Saf	0	0	0	0	0	0	1	0	0	0	0	Ability to predict and/or mor anges	RWST level	013A1.06	3	3.9

Tier 2 Group 1

ame / Safety Functio	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Question Type	K/A Topic(s)	KA	RO	SRO
eatures Actuation												in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)				
ontainment ooling	0	0	1	0	0	0	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	Containment instrumentation readings	022K3.02	3.0	3.3
e Condenser	0	0	0	0	0	0	0	0	0	0	0		K/A Rejected	025A2.04	0	0
ontainment Spray	0	0	0	0	0	0	0	0	0	1	0	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	CSS controls	026A4.01	4.5	4.3
lain and Reheat team	0	0	0	0	0	0	0	1	0	0	0	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Increasing steam demand, its relationship to increases in reactor power	039A2.05	3.3	3.6
lain Feedwater	1	0	0	0	0	0	0	0	0	0	0	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	S/GS	059K1.03	3.1	3.3
uxiliary/Emergency eedwater	0	0	0	0	0	1	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	Pumps	061K6.08	2.6	2.7
C Electrical istribution	0	1	0	0	0	0	0	0	0	0	0	Knowledge of electrical power supplies to the following:(CFR: 41.7)	Major system loads	062K2.01	3.3	3.4

Tier 2 Group 1

ame / Safety Functio	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Question Type	K/A Topic(s)	KA	RO	SRO
)C Electrical)istribution	0	1	0	0	0	0	0	0	0	0	0	Knowledge of electrical power supplies to the following:(CFR: 41.7)	Major DC loads	063K2.01	2.9	3.1
:mergency Diesel Generator	0	0	0	0	0	0	0	0	1	0	0	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	Automatic start of compressor and ED/G	064A3.01	4.1	4.0
Process Radiation Monitoring	0	0	0	0	0	0	1	0	0	0	0	Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	Radiation levels	073A1.01	3.2	3.5
Service Water	0	0	0	0	0	0	0	0	0	0	1	This is a Generic, no stem statement is associated.	Knowledge of operator responsibilities during all modes of plant operation.	076GG2.1.2	3.0	4.0
nstrument Air	0	0	0	0	0	0	0	0	0	0	1	This is a Generic, no stem statement is associated.	Knowledge of the purpose and function of major system components and controls.	078GG2.1.28	3.2	3.3
Containment	0	0	0	1	0	0	0	0	0	0	0	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	Vacuum breaker protection	103K4.01	3.0	3.7
Reactor Protection	0	0	0	0	0	0	0	1	0	0	0	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Incorrect channel bypassing	012A2.03	3.4	3.7
Pressurizer Relief/Quench T	0	0	1	0	0	0	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the (SYSTEM [illegible] have on the following:(CFR: 41.7 [illegible])	Containment	007K3.01	3.3	3.6

Tier 2 Group 1

ame / Safety Functio	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Question Type	K/A Topic(s)	KA	RO	SRO
ervice Water	1	0	0	0	0	0	0	0	0	0	0	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	PRMS	076K1.17	3.6	2.7
lain and Reheat team	1	0	0	0	0	0	0	0	0	0	0	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	RCS temperature monitoring and control	039K1.04	3.1	3.1
lain Feedwater	0	0	1	0	0	0	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	AFW system	059K3.02	3.6	3.7
eactor Coolant ump	0	0	0	0	0	0	1	0	0	0	0	Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	RCP motor stator winding temperatures	003A1.03	2.6	2.6
ressurizer elief/Quench Tank	0	0	0	0	0	0	0	0	0	0	0		K/A Rejected	007K4.01	0	0
strument Air	0	0	0	1	0	0	0	0	0	0	0	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	Manual/automatic transfers of control	078K4.01	2.7	2.9

Tier 2 Group 2

ame / Safety Functio	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Question Type	K/A Topic(s)	KA	RO	SRO
ydrogen Recombiner and urge Control	0	0	0	0	0	0	0	0	0	0	0	This is a Generic, no stem statement is associated.	K/A Randomly Rejected	028GG2.4.50	3.3	3.3
ontainment Purge	0	0	0	0	0	0	0	0	0	1	0	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	Containment evacuation signal	029A4.04	3.5	3.6
pent Fuel Pool ooling	0	0	0	1	0	0	0	0	0	0	0	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	Adequate SDM (boron concentration)	033K4.05	3.1	3.3
uel Handling quipment	0	0	0	0	0	0	0	0	0	1	0	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	Neutron levels	034A4.02	3.5	3.9
team Generator	0	0	0	1	0	0	0	0	0	0	0	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	Automatic blowdown and sample line isolation and reset	035K4.03	2.6	2.8
team ump/Turbine ypass Control	0	0	0	0	0	0	0	0	0	0	0	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	K/A Randomly Rejected	041A2.02	3.6	3.9
lain Turbine enerator	0	0	0	0	0	0	0	1	0	0	0	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Control rod insertion limits exceeded (stabilize secondary)	045A2.12	2.5	2.8

Tier 2 Group 2

ame / Safety Functio	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Question Type	K/A Topic(s)	KA	RO	SRO
ondenser Air emoval	0	0	0	0	0	0	0	0	0	0	0	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	K/A Randomly Rejected	055A2	0	0
iquid Radwaste	0	0	0	0	0	0	0	0	0	0	0	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	K/A Randomly Rejected	068A2.03	2.5	2.6
Vaste Gas Disposal	0	0	0	0	0	0	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	K/A Randomly Rejected	071K6	0	0
rea Radiation lonitoring	0	0	0	0	0	0	0	0	0	0	0	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	K/A Randomly Rejected	072A4.03	3.1	3.1
irculating Water	0	0	0	0	0	0	0	0	0	0	0	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	K/A Randomly Rejected	075A4.01	3.2	3.2
tation Air	0	0	0	0	0	0	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	K/A Randomly Rejected	079K3	0	0
ire Protection	0	0	0	0	0	0	0	0	0	0	1	This is a Generic, no stem statement is associated.	Knowledge of the purpose and function of major system components and controls.	086G2.1.28	3.2	3.3

Tier 2 Group 2

ame / Safety Functio	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Question Type	K/A Topic(s)	KA	RO	SRO
ontrol Rod Drive	0	0	0	0	0	0	0	0	0	0	0	Knowledge of electrical power supplies to the following:(CFR: 41.7)	K/A Randomly Rejected	001K2.05	3.1	3.5
eactor Coolant	0	0	1	0	0	0	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	Containment	002K3.03	4.2	4.6
ressurizer Level ontrol	0	0	0	0	0	0	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	K/A Randomly Rejected	011K3.02	3.5	3.7
od Position dication	0	0	0	0	1	0	0	0	0	0	0	Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.7)	RPIS independent of demand position	014K5.02	2.8	3.3
uclear strumentation	0	0	0	0	0	0	0	0	0	0	0	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	K/A Randomly Rejected	015A3.02	3.7	3.9
on-nuclear strumentation	0	0	0	0	0	0	0	0	0	0	0	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	K/A Randomly Rejected	016A3.01	2.9	2.9
-core emperature lonitor	1	0	0	0	0	0	0	0	0	0	0	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	Plant computer	017K1.01	3.2	3.2
ontainment Iodine emoval	0	0	0	0	0	0	0	0	0	0	0	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	K/A Randomly Rejected	027K3	0	0
ondensate	0	0	0	0	0	0	0	0	0	0	1	This is a Generic, no stem st[illegible]ent is	Ability to locate and operate	056G2.1.30 [illegible].9		3.4

Tier 2 Group 2

ame / Safety Functio	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Question Type	K/A Topic(s)	KA	RO	SRO
												associated.	components, including local controls.			

Tier 3

Group	KA	Topic	RO	SRO
Conduct of Operations	G2.1.3	Knowledge of shift turnover practices.	3	3.4
Conduct of Operations	G2.1.22	Ability to determine Mode of Operation.	2.8	3.3
Conduct of Operations	G2.1.1	Knowledge of conduct of operations requirements.	3.7	3.8
Equipment Control	G2.2.11	Knowledge of the process for controlling temporary changes.	2.5	3.4
Equipment Control	G2.2.24	Ability to analyze the affect of maintenance activities on LCO status.	2.6	3.8
Equipment Control	G2.2.4	(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility.	2.8	3
Radiation Control	G2.3.9	Knowledge of the process for performing a containment purge.	2.5	3.4
Radiation Control	G2.3.2	Knowledge of facility ALARA program.	2.5	2.9
Emergency Procedures/Plan	G2.4.14	Knowledge of general guidelines for EOP flowchart use.	3	3.9
Emergency Procedures/Plan	G2.4.43	Knowledge of emergency communications systems and techniques.	2.8	3.5

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ES-401, Rev. 9 **Record of Rejected K/As** **Form ES-401-4**

Tier / Group	Randomly Selected K/A	Reason for Rejection
1/1	025AA1.19	NAPS does not have block orifice bypass valves for RHR NRC randomly selected KA **025AA1.03** as a replacement.
1/1	057AA2.02	The level and pressure indicators for the accumulators have duel power supplies. Loss of a vital bus has no effect on these indications. NRC randomly selected KA **057AA2.15** as a replacement.
1/2	WE15EG2.133	This Generic does not have a relationship to this safety function/system. NRC randomly selected **WE15EG2.1.23** as a replacement.
2/1	004K5.17	Knowledge of the CVCS system could be better tested then using a KA tested in Group 3 under G2.3. NRC randomly selected KA **004K5.35**as a replacement.
2/1	012A2.03	Will be difficult to write a question that will meet the b) part of the KA. NRC randomly KA **012A2.07** as a replacement.
1/2	036AA1.03	Similar 029A4.04. NRC randomly selected KA **036A1.04** as a replacement.