2024 NRC Examination Question #11
Original Bank Question

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	APE057 AA2.18	
	Importance Rating	3.1	

Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: The indicator, valve, breaker, or damper position which will occur on a loss of power

RO Question #

Given the following plant conditions:

- Plant is operating at 100% power
- Annunciator E-14, LOSS B INSTR. BUS, alarms
- HCO reports INSTRUMENT BUS B AC VOLTMETER indicates 0 VAC

Which ONE of the following correctly answers the questions below when Instrument Bus 'B' de-energizes?

1) What is the expected condition of Channel 2 (White) Bistable Status Lights?
   AND
2) What is the effect on plant systems?

A. 1) LIT
   2) Steam Dumps will ARM

B. 1) LIT
   2) Normal Letdown will isolate

C. 1) Extinguished
   2) Steam Dumps will ARM

D. 1) Extinguished
   2) Normal Letdown will isolate

Answer: D

Explanation:

A. INCORRECT. The first part is plausible since loss of either Instrument Bus 'A' or 'C' would result in the associated bistable status lights being LIT. Incorrect since Instrument Bus 'B'

supplies power to the Channel 1 and 2 Bistable Status Lights; therefore, these Bistable Status Lights would be out (off). The second part is plausible since loss of Instrument Bus 'C' would result in PT-486 failing low causing Steam Dumps to ARM and Instrument Bus 'B' supplies power to PT-485, which is the other Turbine First Stage Pressure instrument. Incorrect since loss of PI-485 has NO effect on Steam Dumps.

B. INCORRECT. The first part is plausible since loss of either Instrument Bus 'A' or 'C' would result in the associated bistable status lights being LIT. Incorrect since Instrument Bus 'B' supplies power to the Channel 1 and 2 Bistable Status Lights; therefore, these Bistable Status Lights would be out (off). The second part is correct.

C. INCORRECT. The first part is correct. The second part is plausible since loss of Instrument Bus 'C' would result in PT-486 failing low causing Steam Dumps to ARM and Instrument Bus 'B' supplies power to PT-485, which is the other Turbine First Stage Pressure instrument. Incorrect since loss of PI-485 has NO effect on Steam Dumps.

D. CORRECT. According to P-10, Section 5.12.1.10.c "Failure of B Instrument Bus will cause all red and white bistable status lights to go out since they are powered from bus B." Additionally, Section 5.12.3.3.b states "Pressurizer level channel LT-427 failed low will cause letdown isolation and trip the Pressurizer heaters."

Technical Reference(s): P-10, Instrument Failure Reference Manual (p63-69; Rev 022)

Proposed references to be provided to applicants during examination: None

Learning Objective: RIC12C 1.06

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 .7
55.43 _____

Comments:

2024 NRC Examination Question #13
Original Bank Question

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	076 A2.01	
	Importance Rating	3.5*	

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: Loss of SWS

RO Question #

Given the following plant conditions:

- Plant is operating at 100% power
- AP-SW.2, LOSS OF SERVICE WATER, has been entered due to issues associated with the Service Water Pumps
- 'C' SW Pump is the only SW Pump running
- The operating crew has reached Step 5, "Monitor Plant Equipment Cooled by SW"

1) What is the impact to plant equipment if the given plant conditions remain unchanged?

AND

2) What actions will be required in accordance with AP-SW.2 if plant equipment temperatures continue to rise?

A. 1) Condensate Pump motor bearing temperatures will slowly rise while Condensate Booster Pump motor bearing temperatures will remain relatively steady.

   2) Perform a load reduction.

B. 1) Condensate Pump motor bearing temperatures will slowly rise while Condensate Booster Pump motor bearing temperatures will remain relatively steady.

   2) Perform a reactor trip.

C. 1) Condensate Pump and Condensate Booster Pump motor bearing temperatures will slowly rise.

   2) Perform a load reduction.

D. 1) Condensate Pump and Condensate Booster Pump motor bearing temperatures will slowly rise.

   2) Perform a reactor trip.

Answer: A

Explanation (Optional):

A. CORRECT. In accordance with 33013-1251, Sheet 1, Service Water provides cooling for the Condensate Pump motor bearings. Therefore, with only one Service Water Pump running, reduced cooling will be supplied to the Condensate Pump motor bearings resulting in rising temperatures. The Condensate Booster Pump motor bearings are not supplied with Service Water cooling so the temperatures should remain relatively steady. AP-SW.2, step 5 RNO requires a load reduction with only one Service Water Pump running and plant equipment temperatures rising (given that plant conditions continue to degrade).

B. INCORRECT. Plausible since the first part is correct and AP-SW.2, step 2 RNO directs the operators to trip the reactor if no Service Water Pumps are running.

C. INCORRECT. Plausible since Service Water provides cooling for the Condensate Pump motor bearings and the candidate may believe that Service Water cooling is also provided to the Condensate Booster Pump motor bearings. Also, the second part is correct.

D. INCORRECT. Plausible since Service Water provides cooling for the Condensate Pump motor bearings and the candidate may believe that Service Water cooling is also provided to the Condensate Booster Pump motor bearings. Additionally, AP-SW.2, step 2 RNO directs the operators to trip the reactor if no Service Water Pumps are running.

Technical Reference(s): AP-SW.2 (Rev 00801)
(Attach if not previously provided, 33013-1251, Sheet 1 (Rev 45)
including version/revision number)

Proposed references to be provided to applicants during examination: None

Learning Objective: R5101C 1.04, RAP33C 2.01 (As available)

Question Source: Bank # 159171
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam 2008 Ginna ILT

(Optional: Questions validated at the facility since 10/95 will generally undergo less rigorous review by the NRC; failure to provide the information will necessitate a detailed review of every question.)

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

10 CFR Part 55 Content:	55.41	.5
	55.43	

Comments:

2024 NRC Examination Question #14
Original Bank Question

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	APE 065 AK3.03	
	Importance Rating	3.6	

Knowledge and Ability (K/A) Statement: **Knowledge of the reasons for the following responses and/or actions as they apply to Loss of Instrument Air: Knowing effects on plant operation of isolating certain equipment from instrument air**

RO Question #

Given the following plant conditions:

- Plant is operating at 90% power with load ascension in progress
- A loss of Instrument Air has occurred
- The crew is attempting to restore Instrument Air (IA) in accordance with AP-IA.1, LOSS OF INSTRUMENT AIR
- S/G narrow range levels are 19% and lowering slowly
- PRZR level is 70% and rising slowly
- T_{AVG} is 571°F and rising

Based on the given plant conditions and in accordance with AP-IA.1, which of the following identifies:

1) the reason that a reactor trip is required;
   AND
2) the impact on RCS inventory control if the IA leak is isolated by closing AOV-5392, Instrument Air to Containment Isolation Valve?

A. 1) loss of S/G level control
   2) only Charging is available

B. 1) loss of S/G level control
   2) Charging and Normal Letdown are available

C. 1) loss of PRZR level control
   2) only Charging is available

D. 1) loss of PRZR level control
   2) Charging and Normal Letdown are available

Answer: **A**

Explanation:

A. CORRECT. In accordance with AP-IA.1, Step 2 RNO, if S/G level is NOT greater than 20% "IF feed flow is less than steam flow, THEN trip the reactor and go to E-0, REACTOR TRIP OR SAFETY INJECTION." The given plant conditions indicate that S/G narrow range levels are still lowering; therefore, the Applicant must determine that feed flow is less than steam flow. AP-IA.1, Step 7 directs the Operator to "Establish Conditions to Isolate IA to CNMT by closing excess letdown isolation valve, AOV-310; isolating normal letdown, and closing charging to loop B cold leg isolation valve, AOV-294." AOV-5392 is closed in AP-IA.1, Step 8. AP-IA.1 Background Document states "Isolating air to CNMT will isolate all letdown sources. Therefore, letdown is intentionally isolated in a controlled manner before IA to CNMT is isolated."

B. INCORRECT. The first part is correct. The second part is plausible since AOV-427 will fail OPEN upon isolating IA to CNMT and the Applicant may misinterpret this to be that Normal Letdown is available. Incorrect since AP-IA.1, Step 7 isolates all sources of Letdown and AOV-371 will fail CLOSED once IA to CNMT is isolated.

C. INCORRECT. The first part is plausible since AP-IA.1 contains Steps that address loss of PRZR level control requiring a plant shutdown. Incorrect since AP-IA.1 does NOT contain reactor trip criteria based on PRZR level. The second part is correct.

D. INCORRECT. The first part is plausible since AP-IA.1 contains Steps that address loss of PRZR level control requiring a plant shutdown. Incorrect since AP-IA.1 does NOT contain reactor trip criteria based on PRZR level. The second part is plausible since AOV-427 will fail OPEN upon isolating IA to CNMT and the Applicant may misinterpret this to be that Normal Letdown is available. Incorrect since AP-IA.1, Step 7 isolates all sources of Letdown and AOV-371 will fail CLOSED once IA to CNMT is isolated.

Technical Reference(s): AP-IA.1, LOSS OF INSTRUMENT AIR (p3, 7 & 8; Rev 026)

AP-IA.1 Background Document (p8; Rev 007)

Proposed references to be provided to applicants during examination: None

Learning Objective: RAP10C 2.01

Question Source: Bank # X

Modified Bank #

New

Question History: Last NRC Exam

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

10 CFR Part 55 Content:	10 CFR 55.41	.10
	10 CFR 55.43	

Comments:

2024 NRC Examination Question #28
Original Bank Question

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	005 K5.05	
	Importance Rating	2.7*	

Knowledge of the operational implications of the following concepts as they apply to the RHRS: Plant response during "solid plant": pressure change due to the relative incompressibility of water

RO Question #

Given the following plant conditions:

- Plant shutdown to Cold Shutdown is in progress in accordance with O-2.2, Plant Shutdown from Hot Shutdown to Cold Conditions
- The Pressurizer is solid
- 'A' RCP is running
- PCV-135, LOW PRESS LTDN PRESS, controller is in MANUAL
- RCS cooldown is in progress

(Assume Charging flow is constant)

As the RCS cools down the HCO will adjust PCV-135 controller to _____(1)____ PCV-135 to control RCS pressure.

The HCO will adjust _____(2)_____ controller to control RCS cooldown rate.

A. (1) open
   (2) HCV-625, RHR HX OUTLET 1A

B. (1) open
   (2) HCV-626, RHR HX BYPASS

C. (1) close
   (2) HCV-625, RHR HX OUTLET 1A

D. (1) close
   (2) HCV-626, RHR HX BYPASS

Answer: C

Explanation:

A. INCORRECT. The first part is plausible since the Candidate may have a misunderstanding of the operation of PCV-135 during solid plant conditions. Incorrect since PCV-135 must be closed as the RCS cools down to raise pressure. The second part is correct.

B. INCORRECT. The first part is plausible since the Candidate may have a misunderstanding of the operation of PCV-135 during solid plant conditions. Incorrect since PCV-135 must be closed as the RCS cools down to raise pressure. The second part is plausible since HCV-626 is adjusted to control total RHR flow during solid plant conditions. Incorrect since HCV-625 is used to control RCS cooldown rate.

C. CORRECT. As the RCS cools down during solid plant conditions, RCS pressure will lower due to the density of the RCS fluid increasing. The Operator will have to close PCV-135 to raise RCS pressure. To control cooldown rate, the Operator will adjust the flow through the in-service RHR HX by adjusting both HCV-624 and HCV-625 as both RHR HXs are normally in service with the RHR Pump discharges cross-tied. HCV-626 is normally maintained in AUTO to maintain a constant total RHR Flow in the system.

D. INCORRECT. The first part is correct. The second part is plausible since HCV-626 is adjusted to control total RHR flow during solid plant conditions. Incorrect since HCV-625 is used to control RCS cooldown rate.

Technical Reference(s): _____

_____

_____

Proposed references to be provided to applicants during examination: None

Learning Objective: R2501C 1.04; R1601C 1.02e, 1.04a

Question Source: Bank # _____

Modified Bank # X

New _____

Question History: Last NRC Exam 2014 Robinson ILT NRC

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 .7

55.43 _____

Comments:

2024 NRC Examination Question #29
Original Bank Question

Question	ID: 1680724	Points: 1.00

Given the following conditions:

- The plant is at 100% power
- A failure of TCV-130, CCW to the NRHX, has occurred and CCW flow to the NRHX is being restricted
- NRHX letdown outlet temperature has risen and stabilized at 158˚F

Based on the given conditions:
(1) The position of TCV-145, LTDN DIVERT TO DI OR VCT, is ___(1)___.
and
(2) The reason it is required to be in this position is ___(2)___.

A. (1) positioned to VCT at 100˚F
(2) limit the temperature rise experienced by the demineralizer to maintain resin chemical characteristics

B. (1) positioned to DI at 100˚F
(2) limit the VCT temperature rise and negative impact on charging pump NPSH

C. (1) positioned to VCT at 145˚F
(2) limit the temperature rise experienced by the demineralizer to maintain resin chemical characteristics

D. (1) positioned to DI at 145˚F
(2) limit the VCT temperature rise and negative impact on charging pump NPSH

Answer	C

Answer Explanation

A. Incorrect. Plausible because TCV-130 normal setpoint is set at 100°F and thus the candidate may associate this number with TCV-145 swapping to VCT. The second part is the correct reason for swapping position to VCT.

B. Incorrect. Plausible because TCV-130 normal setpoint is set at 100°F and thus the candidate may associate this number with TCV-145 swapping to VCT. If the candidate does not associate the swap with the temperature for protecting the resin, then they may believe that the temperature affects the charging pump suction NPSH.

C. CORRECT. Position and reason correct.

D. Incorrect. Plausible because the first part is correct. If the candidate does not associate the swap with the temperature for protecting the resin, then they may believe that the temperature affects the charging pump suction NPSH.

Question Information

Topic	Predict the effects of a failure of TCV-145 on the CVCS				
User ID	2012 RO MAKEUP AUDIT			**System ID**	1680724
Status	Active	**Point Value**	1.00	**Time (min)**	0

Open or Closed Reference	CLOSED	**Cognitive Level**	LOW
Operator Discipline	LO-I	**Operator Type**	RO

References Provided	None
K/A Justification	
SRO-Only Justification	
Additional Information	

K/A 004 K4.16
CVCS:
Knowledge of Chemical Volume Control System design feature(s) and/ or interlock(s) which provide for the following: Temperature at which the temperature control valve automatically diverts flow from the demineralizer to the VCT; reason for the diversion.

Tier 2
Group 1

LP R1601C, Obj 2.08

Previous Vision ID# = 108513

K/A Reference(s)

SF1.004.K4.16	Safety Function 1	Tier 2	Group 1	RO Imp: 2.6	SRO Imp: 3.0
Knowledge of CVCS design feature(s) and/or interlock(s) which provide for the following: (CFR: 41.7) Temperature at which the temperature control valve automatically diverts flow from the demineralizer to the VCT; reason for this diversion					
SF2.004.K4.16	Safety Function 2	Tier 2	Group 1	RO Imp: 2.6	SRO Imp: 3.0
Knowledge of CVCS design feature(s) and/or interlock(s) which provide for the following: (CFR: 41.7) Temperature at which the temperature control valve automatically diverts flow from the demineralizer to the VCT; reason for this diversion					
SYS.004.K4.03	Safety Function 2	Tier 2	Group	RO Imp: 3.2	SRO Imp:
Knowledge of Chemical and Volume Control System design features and/or interlocks that provide for the following: (CFR: 41.6 / 41.7) Protection of ion exchangers					

Learning Objective(s)

Question not linked to a Learning Objective

Cross Reference Links

None

2024 NRC Examination Question #33
Original Bank Question

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	007 K4.01	
	Importance Rating	2.6	

Knowledge of PRTS design feature(s) and/or interlock(s) which provide for the following: Quench tank cooling

RO Question #

Which ONE of the following correctly completes the statements below?

(1) Following a discharge from the PORVs, the PRT is cooled by RMW supplied to the _____ of the PRT.

AND

(2) The warm PRT water is drained directly to the _____.

A. (1) top spray nozzles
(2) Reactor Coolant Drain Tank (RCDT)

B. (1) top spray nozzles
(2) Waste Holdup Tank (WHUT)

C. (1) bottom perforated distribution header
(2) Reactor Coolant Drain Tank (RCDT)

D. (1) bottom perforated distribution header
(2) Waste Holdup Tank (WHUT)

Answer: A

Explanation:

A. CORRECT. According to UFSAR, Section 5.4.8.1 “If the temperature in the tank rises above 120°F during plant operation, the tank is cooled by spraying in cool makeup water and draining out the warm mixture to the reactor coolant drain tank.” Additionally, UFSAR Figure 5.4-9 shows that the demineralized spray water (RMW) is connected to the top of the PRT.

B. INCORRECT. The first part is correct. The second part is plausible the RCDT is drained to the WHUT and the Applicant may misinterpret that the PRT is also drained directly to the WHUT. Incorrect since the PRT is drained to the RCDT.

C. INCORRECT. The first part is plausible since this is the location of the perforated distribution header that the PORVs discharge into and the Applicant may misinterpret that this is the location of the RMW inlet. Incorrect since RMW is connected to the spray nozzles in the top of the PRT. The second part is correct.

A. INCORRECT. The first part is plausible since this is the location of the perforated distribution header that the PORVs discharge into and the Applicant may misinterpret that this is the location of the RMW inlet. Incorrect since RMW is connected to the spray nozzles in the top of the PRT. The second part is plausible the RCDT is drained to the WHUT and the Applicant may misinterpret that the PRT is also drained directly to the WHUT. Incorrect since the PRT is drained to the RCDT.

Technical Reference(s): UFSAR, Section 5.4.8.1, Figure 5.4-9 (Rev 28)

Proposed references to be provided to applicants during examination: None

Learning Objective: R1401C 1.03d, 1.07b

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

Question History: Last NRC Exam 2020 Ginna ILT NRC

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

10 CFR Part 55 Content: 55.41 .7
55.43 _____

Comments:

2024 NRC Examination Question #34
Original Bank Question

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	008	A3.05
	Importance Rating	3.0	

Ability to monitor automatic operation of the CCWS, including: Control of the electrically operated, automatic isolation valves in the CCWS

RO Question #

Given the following:

- The reactor has tripped.
- The crew has entered E-0, Reactor Trip or Safety Injection.
- Plant conditions as follows:
    - RCS pressure 1810 psig and slowly lowering.
    - PZR level 5% and lowering.
    - RCS temperature 550°F and lowering.
    - Containment pressure 5 psig and rising.
    - SG NR levels off-scale low.
    - All equipment has operated as designed.

Which ONE of the following describes the status of Component Cooling Water system valves for the current plant conditions?

A. MOV-813 and MOV-814, CCW to and from Reactor Support Coolers, are OPEN; MOV-817, CCW to Containment Isolation valve, is OPEN.

B. MOV-813 and MOV-814, CCW to and from Reactor Support Coolers, are OPEN; MOV-817, CCW to Containment Isolation valve, is CLOSED.

C. MOV-813 and MOV-814, CCW to and from Reactor Support Coolers, are CLOSED; MOV-817, CCW to Containment Isolation valve, is OPEN.

D. MOV-813 and MOV-814, CCW to and from Reactor Support Coolers, are CLOSED; MOV-817, CCW to Containment Isolation valve, is CLOSED.

Proposed Answer: C

Explanation (Optional):

A. Incorrect. Conditions presented in stem will have resulted in SI and CI actuation. Therefore MOV-813 and MOV-814 will have closed

B. Incorrect. The opposite of the valve positions. It is confusing because MOV-817 title is a containment isolation valve

C. Correct. MOV-813 and MOV-814 receive an automatic isolation signal (T). This isolates Reactor Support Cooling pad only. MOV-817 receives no CI signal. Containment pressure will have actuated SI

D. Incorrect. The CI valves in this system are MOV-813 and MOV-814. MOV-817 is not a CI valve and does not receive an auto signal to close

Technical Reference(s): 33013-1246, sheet 2 (Attach if not previously provided)

Proposed References to be provided to applicants during examination: None

Learning Objective: R2801C, 1.04 (As available)

Question Source: Bank #

Modified Bank # X (Note changes or attach parent)

New

Question History: Last NRC Exam:

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

55.43

Design, components, and function of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.

Comments:

Significantly modified from 2010 item

2024 NRC Examination Question #36
Original Bank Question

Facility: TMI

Vendor: B&W

Exam Date: 4/2010

Exam Type: R

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	012 2.2.12	
	Importance Rating	3.7	

Equipment Control: Knowledge of surveillance procedures.

Proposed Question: RO Question # 22

The Reactor is at 100% power.

The last channel checks for Reactor Protection System (RPS) channels were performed at 0900 on April 12, 2010.

In accordance with Technical Specifications, which ONE (1) of the following is the LATEST time that RPS channel checks may be performed, and remain within the allowable surveillance period, including extensions, if applicable?

A. 2100, April 12, 2010

B. 2400, April 12, 2010

C. 0900, April 13, 2010

D. 1500, April 13, 2010

Proposed Answer: B

Explanation (Optional):

A. **Incorrect.** RPS Channel Checks are required every 12 hours (S for once per shift). Therefore, this would be correct if there were no allowable extensions. It is plausible to account for no allowable extension because surveillances designated (F) have no allowable extension.

B. **Correct.** For a 12 hour required surveillance, the allowable extension is 1.25 times the surveillance interval, or 3 additional hours. Therefore, the surveillance must be performed within 15 total hours of the previous surveillance.

C. **Incorrect.** This allows for 24 hours, and is plausible because this is the closest surveillance interval (D) to the actual requirement. Also logical to not consider extension, since (F) surveillances do not allow extensions.

D. **Incorrect.** This allows for 24 hours, and is plausible because this is the closest surveillance interval (D) to the actual requirement. Additionally, this time allows for the 1.25 time extension on the Daily surveillance. If the applicant believes the interval is daily, he/she would choose this option if they also apply the extension.

Technical Reference(s): Technical Specification Definition 1.25, Amendment 199 (Attach if not previously provided)
Technical Specification Table 4.1-1 (Amendment 262)

Proposed References to be provided to applicants during examination: None

Learning Objective: 641-GLO10 (As available)

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

Question History: NA Last NRC Exam: NA

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

10 CFR Part 55 Content: 55.41 10
55.43

Comments:

The KA is matched because the operator must demonstrate the knowledge of surveillance procedures (i.e. in practice how frequently this is performed, and the allowable extension).

The question is at the Analysis cognitive level because the operator must recall how often a channel check is performed, and calculate the latest the surveillance can be performed.

2024 NRC Examination Question #40
Original Bank Question

Question	ID: 1710285	Points: 1.00

The plant was operating MODE 1 at 100% and experienced a DBA LOCA.

- Containment Pressure = 30 psig and STABLE
- SI has been reset
- Bus 16 NORMAL feeder trips open and
- 'B' EDG re-energizes the Bus.

Determine which is a TRUE statement?

A. CS pump B and SI pump B will both automatically restart.

B. SI pump B and CS pump B must be restarted by using the individual pump breaker controls

C. SI pump B will automatically restart, but CS pump B must be restarted using the individual pump breaker control.

D. CS pump B will automatically restart, but SI pump B must be restarted using the individual pump breaker control.

Answer	D

Answer Explanation

CS pump B will automatically restart, but SI pump B must be restarted using the individual pump breaker control because the sequencer will not start.

A. Incorrect. SI pumps have an automatic start feature, but not under these conditions
B. Incorrect. CS pumps will automatically start under these conditions
C. Incorrect. Backwards
D. Correct. See explanation above

Question Information

Topic	Automatic actions on Loss of Safeguards Bus following SI reset				
User ID	B000.0208			**System ID**	1710285
Status	Active	**Point Value**	1.00	**Time (min)**	2

Open or Closed Reference	CLOSED	**Cognitive Level**	LOW
Operator Discipline	program-R	**Operator Type**	job

References Provided	
K/A Justification	
SRO-Only Justification	

Additional Information	

K/A Reference(s)

SF5.026.A3.01	Safety Function 5	Tier 2	Group 1	RO Imp: 4.3	SRO Imp: 4.5
Ability to monitor automatic operation of the CSS, including: (CFR: 41.7 / 45.5) Pump starts and correct MOV positioning					
SYS.026.A3.01	Safety Function 5	Tier 2	Group	RO Imp: 4.1	SRO Imp:
Ability to monitor automatic features of the Containment Spray System, including: (CFR: 41.7 / 45.5) Pump starts and correct valve positioning					

Learning Objective(s)

1. List the automatic actions that will occur with an undervoltage condition which actuates the Safeguards undervoltage devices, include:

a. Logic to start and load diesel
b. Logic to cause load shedding
User (Sys) ID R0701C 3.01 (1300846)

2. State the logic and setpoints for initiating automatic containment spray.
User (Sys) ID R2401C 4.02 (1301373)

3. From memory, State the immediate actions of E-0, Reactor Trip or Safety Injection, IAW E-0, Reactor Trip or Safety Injection.
User (Sys) ID REP00C 1.03 (1304454)

4. Given a set of plant and equipment conditions, evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement in E-0, Reactor Trip or Safety Injection.
User (Sys) ID REP00C 2.01 (1304461)

5. Predict the effect(s) of a loss or malfunction of the following component(s) and/or instrumentation on the 480V Electrical Distribution System:

• Undervoltage on Bus 14, 16, 17, or 18
User (Sys) ID R0701C 1.10 (1307041)

6. Given system conditions, describe the design features of the Containment Spray System, to include set points, interlocks, and the related automatic action(s) for the following components, instrumentation and/or processes.
    a. Single Active Component Failure.
    b. Seismic Classification.
    c. Periodic Testing.
    d. Containment Spray Actuation Signal.
    e. Design Flow Rate.
    f. Motor Operated Valves.

User (Sys) ID R2401C 1.07 (1307278)

7. When given a task associated with the Primary Operator Certification Guide, the operator will be able to perform the task with appropriate system knowledge IAW the Standard provided in the Certification Guide
User (Sys) ID N/A (1311704)

8. In the plant, when performing duties as an Equipment Operator associated with Containment spray, the Operator will apply required knowledge in accordance with R.E. Ginna Nuclear Power Plant UFSAR, Improved Technical Specifications, Technical Requirements Manual, and procedures listed on the information page.
User (Sys) ID N/A (1534268)

9. Trainees will demonstrate requisite knowledge IAW with USFAR, Tech Specs, Plant Drawings and Procedures to operate the Plant System as pertains to performing the duties of an Equipment Operator by achieving 80% or greater on a written examination
User (Sys) ID N/A (1534496)

10. Discuss hazards associated with the system.
User (Sys) ID N-GN-OPS-EO-A-480VOLT EO-10 (1628629)

Cross Reference Links

Table: TRAINING-QUESTION-GN-OPS-General Data
Continuing Ginna

2024 NRC Examination Question #49
Original Bank Question

Question	ID: 2130273	Points: 1.00

The plant was at 100% power with Offsite power is in the 50/50 Alternate alignment when:

- Circuit 7T tripped.
- The associated DG started and achieved 8 psig jacket water pressure.

Which one of the following describes the status of the safeguard busses?

	(14/18 busses)	(16/17 busses)
A.	Powered by the DG	Powered by offsite power
B.	De-energized	Powered by offsite power
C.	Powered by offsite power	De-energized
D.	Powered by offsite power	Powered by the DG

Answer	C

Answer Explanation

A.	Incorrect. Plausible because the examinee may confuse 50/50 alternate lineup with 50/50 normal lineup. Also the examinee may not recognize that 8 psig jacket water pressure will prevent the DG from flashing its field. Incorrect because 14/18 will be powered by offsite power and 16/17 will be de-energized.
B.	Incorrect. Plausible because the examinee may confuse 50/50 alternate lineup with 50/50 normal lineup. Incorrect because 14/18 will be powered by offsite power and 16117 will be de-energized.
C.	Correct. In the 50/50 alternate alignment offsite power will still be available to busses 14 & 18. Busses 16 &17 will lose offsite power. B DG low jacket water pressure (<11 psig) will prevent B DG from powering busses 16 &17, so they will be de-energized.
D.	Incorrect. Plausible because the first part is correct. Incorrect because low jacket water pressure will prevent the DG from flashing its field, and, therefore, it will not power busses 16&17.

Question Information

Topic	Knowledge of the physical connections and/or cause- effect relationships between the ED/G system and				
User ID	SF6 064 K1.04			**System ID**	2130273
Status	Active	**Point Value**	1.00	**Time (min)**	0

Open or Closed Reference	CLOSED	**Cognitive Level**	HIGH
Operator Discipline	LO-I	**Operator Type**	RO

References Provided	NONE
K/A Justification	R0801C
SRO-Only Justification	N/A
Additional Information	P-12 2012

K/A Reference(s)

SF6.064.K1.04	Safety Function 6	Tier 2	Group 1	RO Imp: 3.6	SRO Imp: 3.9
Knowledge of the physical connections and/or cause- effect relationships between the ED/G system and the following systems: (CFR: 41.2 to 41.9 / 45.7 to 45.8) DC distribution system					
GNA-SF6.064.K1	Safety Function 6	Tier	Group	RO Imp:	SRO Imp:
Knowledge and Abilities Knowledge of the physical connections and/or cause- effect relationships between the ED/G system and the following systems: (CFR: 41.2 to 41.9 / 45.7 to 45.8)					
SYS.064.K1.04	Safety Function 6	Tier 2	Group	RO Imp: 3.9	SRO Imp:
Knowledge of the physical connections and/or cause and effect relationships between the Emergency Diesel Generators and the following systems: (CFR: 41.3 to 41.8 / 45.7 / 45.8) DC distribution system					

Learning Objective(s)

1. Given system conditions, describe the design features of the Diesel Generator System, to include setpoints, interlocks, and the related automatic action(s) for the following components, instrumentation and/or processes:
    a. ALCO Diesel
    b. Governor (Woodward) speed /load control system
    c. Starting air system
    d. Engine Lubrication system
    e. Fuel oil system (including day tank)
    f. Crankcase ventilation system
    g. Combustion air supply system
    h. EDG Room Ventilation system
    i. EDG Room NO2/CO Detectors
    j. Jacket Water Cooling system
    k. Exciter and voltage regulating equipment
    l. Generator output breakers

    User (Sys) ID R0801C 1.07 (1307050)
2. In the plant, when performing duties as an Equipment Operator associated with Emergency Diesel Generators, the Operator will apply required knowledge in accordance with R.E. Ginna Nuclear Power Plant UFSAR and procedures.

    User (Sys) ID N/A (1558273)

Cross Reference Links

None

2024 NRC Examination Question #59
Original Bank Question

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	041 191003 K1.03	
	Importance Rating	3.1	

Knowledge and Ability (K/A) Statement: **Operation of valve controllers in manual and automatic modes, including seal-in features (Steam Dump System and Turbine Bypass Control)**

RO Question #

Given the following plant conditions:

- Plant is operating at 100% power
- ROD CONTROL BANK SELECTOR switch is in M (MANUAL)

Subsequently:

- One Turbine Control Valve fails CLOSED
- T_{AVG} rises to 9°F above T_{REF}

Which of the following statements correctly describes operation of the Steam Dump Valves for the given plant conditions?

A. All eight valves are modulating OPEN.

B. All eight valves have snapped OPEN.

C. Four valves have snapped OPEN, two valves are modulating OPEN, and two valves are CLOSED.

D. Four valves have snapped OPEN, two valves are fully OPEN, and two valves are modulating OPEN.

Answer: C

Explanation:

A. INCORRECT. Plausible since the Applicant may misinterpret the operation of the Steam Dump System and determine that all valves will modulate OPEN until the 11°F deviation is met where all the valves would snap OPEN. Incorrect since with the turbine operating, the first two Groups snap OPEN at a 7.5°F deviation, the third Group is modulating OPEN, and the fourth Group is CLOSED.

B. INCORRECT. Plausible since the Applicant may misinterpret the operation of the Steam Dump System and determine that for the given temperature deviation all the Steam Dump valves will have snapped OPEN. Incorrect since with the turbine operating, the first two Groups snap OPEN at a 7.5°F deviation, the third Group is modulating OPEN, and the fourth Group is CLOSED.

C. CORRECT. According to P-1, Section 6.3.2.2, with the Turbine Operating and a given ΔT of 9°F, Groups A and B will snap OPEN at a 7.5°F deviation, Group C will be modulating OPEN, and Group D will be CLOSED. There are two valves in each Group; therefore, four valves will snap OPEN, two valves will be modulating OPEN, and two valves will be CLOSED.

D. INCORRECT. Plausible since this would be the correct response for the given T_{AVG}-T_{REF} deviation if the turbine was tripped. Incorrect since with the turbine operating, the first two Groups snap OPEN, the third Group is modulating OPEN, and the fourth Group is CLOSED.

Technical Reference(s): P-1, REACTOR CONTROL AND PROTECTION SYSTEM (p28 & 29; Rev 080)

Proposed references to be provided to applicants during examination: None

Learning Objective: R4501C 1.07a

Question Source: Bank # X
Modified Bank #
New

Question History: Last NRC Exam

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

10 CFR Part 55 Content: 10 CFR 55.41 .7
10 CFR 55.43

Comments:

2024 NRC Examination Question #78
Original Bank Question

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	027 G2.4.31	
	Importance Rating		4.1

Pressurizer Pressure Control System (PZR PCS) Malfunction: Knowledge of annunciator alarms, indications, or response procedures.

SRO Question #

Given the following plant conditions:

- The plant is in Mode 4
- Both 'A' and 'B' RHR Systems are in service
- RCS Temperature is 250°F
- RCS pressure is 320 psig

Subsequently:

- A transient occurs and RCS pressure starts to rise
- At 410 psig RCS pressure lowered rapidly to 340 psig
- After this, the transient subsides and RCS pressure stabilizes at 340 psig
- The HCO reports that PRZR PORV PCV-431C did NOT automatically open during this transient
- F-19, PRZR PORV HI TEMP 145˚F Actuates

WHICH ONE of the following identifies the required ACTION?

A. Declare PCV-431C inoperable per Tech Spec 3.4.11 PORVs

B. Declare BOTH PCV-430 AND PCV-431C inoperable per Tech Spec 3.4.12 LTOP

C. Declare PCV-431C inoperable AND close MOV-515 per Tech Spec 3.4.11 PORVs

D. Declare PORV-431C inoperable per Tech Spec 3.4.12 LTOP AND verify that PORV-430 is CLOSED

Answer: D

Explanation:

A. Incorrect. Plausible because this represents the a correct action taken by ITS 3.4.11, PORV.

B. Incorrect. This is plausible if the candidate believes that PORV-430 opened at an incorrect pressure and because 431C failed to open.

C. Incorrect. Plausible because this represents the correct action taken by ITS 3.4.11, PORV actuation which is not applicable in this Mode.

D. CORRECT. Per TS 3.4.12 PORV-431C is inoperable. Given indications are that RCS pressure has exceeded the LTOP relief actuation setpoint. The alarm response procedure for AR-AA-22, 23, & 31 has the operator verify that at least one PORV has actuated (opened and closed) as appropriate if overpressure protection is required to be Operable and RCS pressure has exceeded 410 psig.

Technical Reference(s): TS LCO 3.4.12 (p3.4.12-1; Amendment 88); PTLR (pPTLR-3 of 16; Rev 6); (Attach if not previously provided)

Proposed References to be provided to applicants during examination: None

Learning Objective: (As available)

Question Source: Bank #

Modified Bank # (Note changes or attach parent)

New X

Question History: Last NRC Exam:

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41

55.43 2

Comments:

The KA is matched because the operator must demonstrate knowledge of Knowledge of response procedures (i.e. TS Actions) associated with a PPCS Malfunction (i.e. PORVs did NOT open when required in LTOP).

The question is at the Comprehension/Analysis level cognitive level because the operator must recall bits of information (TS LCO 3.4.12 operability requirements in Mode 4, PTLR PORV Setpoints in LTOP Mode) and then use this information to predict an outcome (i.e. Are the PRZR PORVs Operable, TS Action Required based on Operable), in order to answer the question correctly.

The question is SRO-ONLY because it cannot be answered solely by knowing ≤ 1 hour TS/TRM action statements, the LCO information listed “above the line,” or by knowing the TS Safety Limits; AND requires the operator to demonstrate knowledge of the TS basis that is required to analyze TS required actions and terminology (When Two PORVs inoperable in LTOP Mode Action G is required (electrically inhibit one Charging Pump and establish vented RCS)).

What MUST be known:
1. What are the Mode4 Operability Requirements for the PRZR PORVs? 2. What is the PTLR setpoint for the PRZR PORVs when operating in LTOP Mode? 3. Under the current plant conditions are the PRZR PORVs OPERABLE? 4. Under the current plant conditions, what TS Action is required?

2024 NRC Examination Question #96
Original Bank Question

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #		3
	Group #		
	K/A #	G2.2.5	
	Importance Rating	3.2	

Knowledge of the process for making design or operating changes to the facility.

SRO Question #

Given the following:

- The plant is at 100% power
- A temporary sump pump is being installed in the Screenhouse in direct support of normally scheduled maintenance replacement of the Screenhouse Circ Water Bay Sump Pumps
- The replacement will be performed under a Work Order and a Temporary Configuration Change Package (TCCP), and is expected to take less than 60 days

For the given situation:

(1) Whose approval is required for this temporary change installation in the plant;
AND
(2) Will a 10CFR50.59 screening be required for this activity?

A. (1) Unit Supervisor (US) ONLY
(2) 10CFR50.59 screening IS required

B. (1) Unit Supervisor (US) ONLY
(2) 10CFR50.59 screening is NOT required

C. (1) Unit Supervisor (US) AND Maintenance Manager
(2) 10CFR50.59 screening IS required

D. (1) Unit Supervisor (US) AND Maintenance Manager
(2) 10CFR50.59 screening is NOT required

Answer: B

Explanation:

A. INCORRECT. The first part is correct. The second part is plausible since LS-AA-104-1000 requires that "10CFR50.59 should be applied to temporary changes proposed as compensatory measures to address degraded or non-conforming conditions". Incorrect since temporary changes installed in support of maintenance activities are subject to 10CFR50.65 if removed within 90 days.

B. CORRECT. According to OP-AA-108-101, the Operations US has the responsibility for "authorizing installation and removal of TCCs, controlling TCC tag numbers and tags, and entering required information into the TCC Tracking Log." According to LS-AA-104-1000 "Temporary changes to the facility are subject to 10CFR50.59 in the same manner as permanent changes to the facility. The exception to this is temporary changes that are installed in support of maintenance activities. These temporary changes are subject to 10CFR50.65 (Maintenance Rule) rather than 10CFR50.59 if the temporary change is removed within 90 days. However, if the temporary change in support of maintenance is to be in effect during at-power operations for more than 90 days, then the temporary change is subject to 10CFR50.59."

C. INCORRECT. The first part is plausible since according to CC-AA-112 "the Maintenance Manager is responsible for ensuring that maintenance/contract personnel are familiar with CC-AA-112 and that the TCC is installed and removed per the approved TCC requirements." The second part is plausible since LS-AA-104-1000 requires that "10CFR50.59 should be applied to temporary changes proposed as compensatory measures to address degraded or non-conforming conditions". Incorrect since temporary changes installed in support of maintenance activities are subject to 10CFR50.65 if removed within 90 days.

D. INCORRECT. The first part is plausible since according to CC-AA-112 "the Maintenance Manager is responsible for ensuring that maintenance/contract personnel are familiar with CC-AA-112 and that the TCC is installed and removed per the approved TCC requirements." The second part is correct.

Technical Reference(s):	OP-AA-108-101, Control of Equipment and System Status (p3; Rev 15)
	LS-AA-104-1000, Exelon 50.59 Resource Manual (p5-7; Rev 14)
	CC-AA-112, Temporary Configuration Changes (p3; Rev 29)

Proposed references to be provided to applicants during examination: None

Learning Objective: RAD32C 1.06

Question Source: Bank # X

Modified Bank #

New		

Question History: Last NRC Exam 2012 Ginna ILT

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

10 CFR Part 55 Content:		
	55.41	
	55.43	.3

Comments: