Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	003 K5.05	
	Importance Rating	3.8	

Knowledge of the operational implications of the following concepts as they apply to the RCPS: The dependency of RCS flow rates upon the number of operating RCPs

Proposed Question: Common 1

The plant was at 100% power.

RCP 1-1 tripped.

Which one of the following explains why the RPS flux/ ∆flux/flow bistables will trip to cause a reactor trip?

As flow decreases, the calculated power-trip-setpoint INCREASES faster than the plant runback can decrease reactor power.

As the rods are driven in during the runback, the axial power imbalance INCREASES beyond the positive side of the imbalance trip envelope.

As flow decreases, the calculated power-trip-setpoint DECREASES faster than the plant runback can decrease reactor power.

As the rods are driven in during the runback, the axial power imbalance DECREASES below the negative side of the imbalance trip envelope.

Proposed Answer: C

Explanation (Optional):

Trip setpoint decreases
API becomes more negative
Correct
Trip setpoint would not be reached on a RCP runback

Technical Reference(s): DB-OP-02515 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-504-09K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	003 K1.13	
	Importance Rating	2.5	

Knowledge of the physical connections and/or cause-effect relationships between the RCPS and the following systems: RCP bearing lift oil pump

Proposed Question: Common 2

Which one of the following is an interlock that must be satisfied, for any Reactor Coolant Pump, before it can be started?

Lift oil pressure > 600 psig for the pump

Seal return flow > 3.0 gpm for the pump

Reactor power < 75%

D. Seal return temperature < 200 F

Proposed Answer: A

Explanation (Optional):

Correct. The pump will not start unless lift oil pressure is > 600 psig.
Incorrect. Trip criteria but not an interlock.
Incorrect. Limit is 60%
Incorrect. Trip criteria but not an interlock.

Technical Reference(s): DB-OP-06005 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-105-04K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	004 A3.18	
	Importance Rating	2.8	

Ability to monitor automatic operation of the CVCS, including: Interpretation of letdown orifice isolation valve position indicators

Proposed Question: Common 3

The following plant conditions exist:

The unit was at 100% power.
An SFAS Incident Level 2 actuation occurred.
Assume that each valve listed in the choices indicates OPEN in the control room.

Which one of the following correctly identifies the valve that should have automatically closed?

MU 1A, RC LETDOWN CLR 1-1 INLET ISOLATION

MU 2B, RC LETDOWN CLR INLET ISOLATION

MU 3, LETDOWN STOP

MU 4, LETDOWN BLOCK ORIFICE ISOLATION

Proposed Answer: C

Explanation (Optional):

Incorrect. All are in the letdown flowpath but do not receive an SA Level 2 closure signal.
Incorrect. All are in the letdown flowpath but do not receive an SA Level 2 closure signal.
Correct. MU 3 will auto close on SA Level 2.
Incorrect. All are in the letdown flowpath but do not receive an SA Level 2 closure signal.

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-106-12K (As available)

Question Source: Bank #

Modified Bank # OPSSYS106 Q #14 (Note changes or attach parent)

New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	005 K4.03	
	Importance Rating	2.9	

Knowledge of RHRS design feature(s) and/or interlock(s) which provide or the following: RHR heat exchanger bypass flow control

Proposed Question: Common 4

The following plant conditions exist:

The plant is in Mode 4.
RCS Cooldown is in progress.
DH Cooler 1 is in service. DH 14B, DH Cooler 1 Outlet Flow Control Valve, is throttled open 10%. DH 13B, DH Cooler 1 Bypass Flow Control Valve, is throttled open 30%.
Total DH flow is approximately 3000 gpm.

A total loss of Instrument Air pressure occurs.

Which one of the following describes the effect on the RCS cooldown rate?

RCS cooldown rate remains constant since all decay heat is being removed using the steam generators in Mode 4.

RCS cooldown rate lowers because flow through the DH cooler lowers as DH 13B fails open and DH 14B fails closed.

RCS cooldown rate rises because flow through the DH cooler rises as DH 14B fails open to its mechanical stop, and DH 13B fails closed.

RCS cooldown rate remains constant since DH 1B, DH Pump 1 Discharge to RCS, is throttled to limit decay heat flow.

Proposed Answer: C

Explanation (Optional):

Incorrect. Decay heat removed with SGs and the DH System in Mode 4.
Incorrect. DH 13B fails closed and DH 14B fails to mechanical stop.
Correct.
Incorrect. DH 1B is only throttled during reduced RCS inventory.

Technical Reference(s): DB-OP-02528 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-1303 (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	006 A1.16	
	Importance Rating	4.1	

Ability to predict and/or monitor changes in parameters associated with operating ECCS controls, including: RCS temperature, including superheat, saturation, and subcooled

Proposed Question: Common 5

The following plant conditions exist:

DH Pump 2 is tagged out and disassembled for motor bearing replacement.
The reactor tripped due to a loss of offsite power.
A small break LOCA occurred approximately 2 hours ago.
An SFAS Level 2 actuation occurred and all safety systems responded as expected.
BWST level is 9 ft.
RCS pressure is 480 psig.
RCS temperature is 400°F.

Which one of the following is the correct operator action?

A. Place the HPI Alternate Minimum Recirc flowpath in service.

Maintain BWST level greater than 9 feet by refilling from the Clean Waste System.

Piggyback both HPI Pumps, then transfer LPI suction to the emergency sump.

D. Transfer LPI suction to the emergency sump, then stop both HPI pumps.

Proposed Answer: C

Explanation (Optional):

BWST depletion rate is too high to place the HPI alternate recirc in service
This guidance is only provided for a SGTR
Correct
HPI Pumps would lose suction if not piggybacked prior to transfer

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

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

Learning Objective: OPS-GOP-309-04K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	006 K1.02	
	Importance Rating	4.3	

Knowledge of the physical connections and/or cause-effect relationships between the ECCS and the following systems: ESFAS

Proposed Question: Common 6

The following plant conditions exist:

The plant is at 100% power.
SFAS Ch. 1 sequencer is out of service and removed for maintenance.
All other equipment is operating as required

An SFAS Level 2 trip occurs in conjunction with a loss of offsite power.

Which one of the following describes the response of HPI Pump 1 to these conditions?

HPI Pump 1 _____.

starts when EDG output breaker AC 101 closes

starts five seconds after AC 101 closes

starts 25 seconds after AC 101 closes

will NOT start automatically

Proposed Answer: B

Explanation (Optional):

Incorrect. #3 sequencer will actuate HPI Pump 5 seconds after breaker closed.
Correct.
Incorrect. 25 seconds is if the pump fails to start the first time.
Incorrect. #1 AND #3 sequencer would have to be lost to prevent auto start of HPI Pump 1.

Technical Reference(s): Tech Spec 3.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-302-2K (As available)

Question Source: Bank # X OLC-36940 Editorially Modified

Modified Bank # _____ (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	007 A1.02	
	Importance Rating	2.7	

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRTS controls including: Maintaining quench tank pressure

Proposed Question: Common 7

The following plant conditions exist:

The unit is at 100% power.
NN 3863, Quench Tank N2 Pressure Regulator, is leaking by.

In order to control Quench Tank pressure, RC 222, Quench Tank Vent to Vent Header Valve, _____ to reduce pressure and _____ to stop the pressure reduction.

is opened manually; is closed manually

opens automatically; closes automatically

is opened manually; closes automatically

opens automatically; is closed manually

Proposed Answer: A
Explanation (Optional):
Correct. RC 222 has no automatic functions

Technical Reference(s): DB-OP-06004, pg. 31 (Attach if not previously provided)
OS 1A Sheet 3 an 4

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-104-05K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

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

Proposed Question: Common 8

The following plant conditions exist:

CCW Pump 1 is running.
CCW Pump 2 is in standby.
CCW Pump 1 trips on overcurrent.

Assuming no action by the crew, which one of the following describes the impact on the CCW System?

CC 5095, 5097, and 2645 (Loop 1 Non-Essential Isolation Valves) closed
CC 5096, 5098, and 2649 (Loop 2 Non-Essential Isolation Valves) open

CC 5095, 5097, and 2645 (Loop 1 Non-Essential Isolation Valves) open
CC 5096, 5098, and 2649 (Loop 2 Non-Essential Isolation Valves) closed

CC 5095, 5097, and 2645 (Loop 1 Non-Essential Isolation Valves) closed
CC 5096, 5098, and 2649 (Loop 2 Non-Essential Isolation Valves) closed

CC 5095, 5097, and 2645 (Loop 1 Non-Essential Isolation Valves) open
CC 5096, 5098, and 2649 (Loop 2 Non-Essential Isolation Valves) open

Proposed Answer: A

Explanation (Optional):

Correct. Low flow on Loop 1 will open loop 2 valves. Pump 1 and 3 breakers open will close loop 1 valves.
Incorrect.
Incorrect.
Incorrect.

Technical Reference(s): DB-OP-02523 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-304-06K (As available)

Question Source: Bank # ____
Modified Bank # X Bank Item 36773 (Note changes or attach parent)
New ____

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

8 Original Question

The following plant conditions exist:- CC Pump 1 is running.- CC Pump 2 is in standby.- Service Water Pump 1 trips.Without operator action, which one of the following describes the final state of the CCW System?

A. CC 5095, 5097, and 2645 (Loop 1 Non-Essential Isolation Valves) closed
CC 5096, 5098, and 2649 (Loop 2 Non-Essential Isolation Valves) open
CCW Pump 2 running
CCW Pump 1 off

B. CC 5095, 5097, and 2645 (Loop 1 Non-Essential Isolation Valves) open
CC 5096, 5098, and 2649 (Loop 2 Non-Essential Isolation Valves) closed
Neither CCW pump running

C. CC 5095, 5097, and 2645 (Loop 1 Non-Essential Isolation Valves) open
CC 5096, 5098, and 2649 (Loop 2 Non-Essential Isolation Valves) closed
CCW Pump 1 running
CCW Pump 2 off

D. CC 5095, 5097, and 2645 (Loop 1 Non-Essential Isolation Valves) closed
CC 5096, 5098, and 2649 (Loop 2 Non-Essential Isolation Valves) open
Both CCW pumps running

Answer: C

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	010 A3.01	
	Importance Rating	3.0	

Ability to monitor automatic operation of the PZR PCS, including: PRT temperature and pressure during PORV testing

Proposed Question: Common 9

Reactor Coolant System heatup is in progress per DB-OP-06900, Plant Heatup.

RCS temperature is 360°F.
RCS pressure is 675 psig.

PORV testing, per DB-SP-03363 is initiated.

Which of the following conditions would require termination of the PORV cycle test?

Quench Tank pressure of 85 psig.

Quench Tank temperature of 165°F.

Pressurizer level of 80 inches.

RCS pressure drops to 600 psig.

Proposed Answer: A

Explanation (Optional):

Limit and Precautions of DB-SP-03363 specify Quench Tank pressure limit of 80 psig, QT temperature limit of 180°F, Pzr level limit of 85 inches and RCS pressure drop limit of 550 psig.

Technical Reference(s): DB-SP-03363 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-104-03K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	012 K6.11	
	Importance Rating	2.9	

Knowledge of the effect that a loss or malfunction of the following will have on the RPS: Trip setpoint calculators

Proposed Question: Common 10

The following plant conditions exist:

Reactor power is 100%, with ICS in full automatic.
No surveillance testing in progress.

Based on these conditions, identify the one statement below that describes an RPS cabinet trip string input failure that will cause the RPS Channel to trip.

An RCP monitor contact fails open.

Total RCS flow fails to 145 mpph.

A Loop 1 RCS flow transmitter fails to ZERO mpph.

Power imbalance fails to ZERO %.

Proposed Answer: C

Explanation (Optional):

Incorrect. This failure mode will not result in a change to the high flux trip based on number of RCPs running, and therefore a channel trip will not occur. This high flux trip setpoint for 4 RCPs operating is the same as the setpoint for 3 RCPs operating.
Incorrect. This failure mode will raise the overpower trip setpoint based on total RCS flow and power imbalance, and a channel trip will not occur.
Correct. Zero (loop) flow with normal imbalance will generate an output (flux trip setpoint) signal that is less than 100% power, causing the RPS channel to trip on Flux/Flow/Imbalance.
Incorrect. This failure mode will raise (rather than lower) the overpower trip setpoint based on total RCS flow and power imbalance, and a channel trip will not occur.

Technical Reference(s): DB-OP-06403 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-504-10K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:
TMI Bank

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	013 K2.01	
	Importance Rating	3.6	

Knowledge of bus power supplies to the following: ESFAS/safeguards equipment control

Proposed Question: Common 11

The plant is in Mode 5

Breaker D1P 19, DC Breaker to SFAS Channel 3 trips.

What effect does DIP 19 tripping have on SFAS components?

DC powered valves will _____

A. reposition to their SFAS position.

B. NOT reposition on an actual SFAS actuation.

C. only reposition if SFAS Channel 1 trips.

NOT reposition since SFAS components are in Shutdown Bypass.

Proposed Answer: A

Explanation (Optional):

Correct. Valves will lose solenoid power and reposition to their SFAS position
Valves will reposition
Valves are powered from individual channels and not affected by other channels
Shutdown Bypass does not prevent valve movement on a loss of DC power

Technical Reference(s): DB-OP-06405 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-506-10K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	022 A1.01	
	Importance Rating	3.6	

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CCS controls including: Containment temperature

Proposed Question: Common 12

The following plant conditions exist:

A LOCA caused an SFAS actuation.
Containment Pressure is 22 psig, lowering slowly.
The white motor overload light on the control board for Containment Air Cooler 1 (CAC 1) just illuminated.

Which one of the following is the correct action?

Block and stop CAC 1. Align CAC 3 for Train 1 operation.

Verify CAC 1 has tripped. Align CAC 3 for Train 1 operation.

Leave CAC 1 in service. The overload is anticipated during a LOCA.

Shift CAC 1 to fast speed. Notify the TSC if stator temperature reaches 347 F.

Proposed Answer: C

Explanation (Optional):

Incorrect. L&P 2.2.5 specifies CAC not to be stopped for OL.
Incorrect. OL not functional in SLOW.
Correct. L&P 2.2.5 and CAUTION in Emergency Operations section of DB-OP-06016 indicates CAC is not stopped for OL during a LOCA.
Incorrect. Similar to action for stator temperature alarm during normal operation. Temperature limit is 347 F for a LOCA.

Technical Reference(s): DB-OP-06016 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-306-09K (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 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	022 A2.04	
	Importance Rating	2.9	

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

Proposed Question: Common 13

The following plant conditions exist:

The plant is at 100% power.
Service Water Pump 1 has tripped.

Which one of the following is correct concerning the CAC 1?

Stop CAC 1 and close the SW inlet valve.

Shift CAC 1 to slow speed and fully open the temperature control valve.

Leave CAC 1 in fast speed and close the SW inlet valve.

Start Service Water Pump 3 to restore service water to CAC 1.

Proposed Answer: A

Explanation (Optional):

#1 CAC is stopped to prevent water hammer in the tubes.

Technical Reference(s): DB-OP-02511 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-111-02K (As available)

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

Question History:
- Last NRC Exam _____

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

10 CFR Part 55 Content:
- 55.41 X
- 55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	026 K4.07	
	Importance Rating	3.8	

Knowledge of CSS design feature(s) and/or interlock(s) which provide for the following: Adequate level in containment sump for suction (interlock)

Proposed Question: Common 14

The following plant conditions exist:

A large break LOCA initiated an SFAS Level 4 actuation.
The operating crew is preparing to implement DB-OP-02000, Attachment 7, Transferring LPI Suction to the Emergency Sump.

Which one of the following correctly describes operations relative to containment spray (CS)?

Valve Identification:

CS 1530 CTMT SPRAY PUMP 1 AUTO CONTROL VALVE
CS 1531 CTMT SPRAY PUMP 2 AUTO CONTROL VALVE
DH 7A BWST OUTLET ISOLATION VALVE LINE 2
DH 7B BWST OUTLET ISOLATION VALVE LINE 1
DH 9A DH PUMP 2 SUCTION FROM EMERGENCY SUMP
DH 9B DH PUMP 1 SUCTION FROM EMERGENCY SUMP

Stop both CS Pumps. Open DH 9A and DH 9B. Close DH 7A and DH 7B. Re-start both CS Pumps and verify CS 1530 and CS 1531 are fully open.

Stop both CS Pumps. Open DH 9A and DH 9B. Verify DH 7A and DH 7B stroke closed and CS 1530 and CS 1531 go to the throttled position. Re-start both CS Pumps.

Open DH 9A and DH 9B. Close DH 7A and DH 7B. Verify CS 1530 and CS 1531 are fully open.

Open DH 9A and DH 9B. Verify DH 7A and DH 7B stroke closed, and CS 1530 and CS 1531 go to the throttled position.

Proposed Answer: D

Explanation (Optional):

Incorrect. CS Pumps are not stopped and valve operation is reversed.
Incorrect. CS Pumps are not stopped.
Incorrect. Valve interlock is reversed and CS 1530/1531 out of position.
Correct. Proper interlock and position. CS 1530/1531 throttle to ensure proper NPSH.

Technical Reference(s): DB-OP-02000, pg. 290 (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 X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Not possible to exactly match K/A - no automatic level interlock preventing transfer. Closest match is auto throttling of CS 1530/1531 for NPSH.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	026 K2.02	
	Importance Rating	2.7	

Knowledge of bus power supplies to the following: MOVs

Proposed Question: Common 15

The following plant conditions exist:

e plant was at 100% power.
switchyard fault caused a loss of off-site power.
G 1 failed to start.
G 2 is supplying the respective bus.
o minutes later an SFAS Level 2 actuation occurred.

Which one of the choices correctly identifies the position of the following valves?

CS 1530 CTMT SPRAY PUMP 1 AUTO CONTROL VALVE
CS 1531 CTMT SPRAY PUMP 2 AUTO CONTROL VALVE
DH 7A BWST OUTLET ISOLATION VALVE LINE 2
DH 7B BWST OUTLET ISOLATION VALVE LINE 1

CS 1530-CLOSED; CS 1531-OPEN; DH 7A-OPEN; DH 7B-OPEN

CS 1530-OPEN; CS 1531-OPEN; DH 7A-OPEN; DH 7B-OPEN

CS 1530-CLOSED; CS 1531-OPEN; DH 7A-OPEN; DH 7B-CLOSED

CS 1530-OPEN; CS 1531-OPEN; DH 7A-OPEN; DH 7B-CLOSED

Proposed Answer: A

Explanation (Optional):

Correct. CS 1530 powered via Bus C1 and DH 7A/7B locked OPEN.
Incorrect. Power available to CS 1531.
Incorrect. DH 7A locked open.
Incorrect. Power available to CS 1531 and DH7B locked open.

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)
DB-OP-06013, pg. 30

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-306-10K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	039 K5.08	
	Importance Rating	3.6	

Knowledge of the operational implications of the following concepts as they apply to the MRSS: Effect of steam removal on reactivity

Proposed Question: Common 16

The following plant conditions existed:

The plant was at 50% power and 450 generated megawatts.
All systems were in a normal lineup.
Tave was 582°F.
A Turbine Bypass Valve then failed open. The turbine control remains in ICS automatic control.What will be the expected response of the following parameters 15 minutes after the TBV failed open, assuming no operator action?Reactor power will _____, Tave will _____ and generated megawatts will _____.

A. remain the same; decrease; decrease

B. increase; decrease; remain the same

C. increase; remain the same; remain the same

D. remain the same; remain the same; decrease

Proposed Answer: C

Explanation (Optional):

Incorrect. A head bubble will not form if RCPs are operating.
Incorrect. Pressurizer level is manually controlled during a cooldown.
Correct.
Incorrect. Two makeup pumps will maintain RCS inventory.

Technical Reference(s): Tech Spec Bases 3/4.4.9 (Attach if not previously

_____ provided)

_____

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-103-09K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:
Tech Spec Bases question

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	059 G2.1.27	
	Importance Rating	2.8	

Conduct of Operations: Knowledge of system purpose and or function.

Proposed Question: Common 17

Which one of the following describes the purpose of the Start-Up Feed Pump?

Provide a source of aux. feedwater to the steam generators when the Motor Driven Feed Pump is out of service above 40% power.

Provide a source of water to the steam generators during emergency situations where no other source of feedwater is available.

Provide a source of main feedwater to the steam generators during approach to criticality.

Provide a source of water for feedwater iron removal during plant heatup.

Proposed Answer: B

Explanation:

Cannot use the SUFP in Modes 1, 2, or 3
Correct
Cannot use the SUFP in Modes 1, 2, or 3
Not enough flow for iron removal

Technical Reference(s): DB-OP-06226 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-207-01K (As available)

Question Source: Bank # X Editorial Modification

Modified Bank # _____ (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X

Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 _____

55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	059 A2.07	
	Importance Rating	3.0	

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

Proposed Question: Common 18

The following plant conditions exist:

The plant is at 90% power.
ICS is in full automatic.
The following alarms are received in the control room:
8-4-A, MFPT1 TRIP
10-1-A, MFP 1 DISCH HI TRIP
14-3-D, ICS MFP LOSS OR LO DEAR RUNBACK
Generator load is lowering and stabilizes at approximately 700 MWe.
Main Feedwater Control Valves are opening.

Which one of the following actions is required?

Stabilize the plant using DB-OP-06401, ICS procedure section for plant stabilization following a runback.

Trip the reactor and enter DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture.

Place SG/RX Demand Station in HAND and perform runback at 20% per minute to 55% power in accordance with DB-OP-06401, ICS procedure.

Place Feedwater Loop Demand stations in HAND and stabilize OTSG levels in accordance with DB-OP-02526, Steam Generator Overfill.

Proposed Answer: C

Explanation (Optional):

Incorrect. Runback is not complete
Incorrect. Reactor trip criteria not present
Correct.
Incorrect. Feedwater valves are opening because there is not enough feed for the current power level

Technical Reference(s): DB-OP-06401 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-514-03K (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 X
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	061 K3.01	
	Importance Rating	4.4	

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

Proposed Question: Common 19

The plant was at 100% power.
The MDFP is out of service for maintenance.

The reactor tripped due to a loss of Main Feedwater.
AFPT 1 tripped and can not be restarted.
SG 1 has boiled dry.
AFP 2 is feeding SG 2.
RCS temperature is being controlled with AVV 2 in manual.

Which one of the following will limit the cooldown rate of the RCS?

A. Tube to shell T of SG 2.

B. Specific Rule 5, PTS requirements.

C. Cooldown rate of the reactor vessel head.

D. Cooldown rate of SG 1 shell.

Proposed Answer: D

Explanation (Optional):

Tube to Shell T not an issue with SG 2
PTS invoked for high MU/HPI flows
Concern if no RCPs are running
Correct. SG 1 shell will cool down via ambient heat losses

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-306-03K (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 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	062 K4.03	
	Importance Rating	2.8	

Knowledge of ac distribution system design feature(s) and/or interlock(s) which provide for the following: Interlocks between automatic bus transfer and breakers

Proposed Question: Common 20

The following plant conditions exist:

The plant is at 100% power.
All systems are in a normal lineup.
Subsequently, a lockout of A bus occurs.

Which one of the following describes the impact on buses that are NORMALLY powered from A Bus?

- C1 fast transfers to BD transformer
- C2 is fed power from C1 bus
  - Power is lost to E2 and E3
  - E5 continues to receive power from its normal source

- EDG-1 starts to supply power to C1 bus
- Power is lost to C2 bus
- E2 and E3 transfer to the alternate B bus supply
- Power is lost to E5

- C1 fast transfer to BD transformer
- Power is lost to C2 bus
- Power is lost to E2 and E3 bus
- E5 continues to receive power from its normal source

- EDG-1 starts to supply power to C1
- C2 is fed power from C1
- E2 and E3 transfer to the alternate B bus supply
- Power is lost to E5

Proposed Answer: A

Explanation (Optional):

A. Correct.
B. Incorrect. EDG will not start if fast dead transfer occurs
C. Incorrect. C2 will be back-fed from C1
D. Incorrect. EDG will not start if fast dead transfer occurs

Technical Reference(s): DB-OP-06314 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-404-11K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	062 A2.11	
	Importance Rating	3.7	

Ability to (a) predict the impacts of the following malfunctions or operations on the ac distribution system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Aligning standby equipment with correct emergency power source (D/G)

Proposed Question: Common 21

The following plant conditions exist:

The plant is at 100% power. ICS is in full automatic.
CCW 3 Pump is in standby as CCW 1 Pump, with its breaker racked in.
CCW Pump 1 breaker is racked in following maintenance activities.
CCW Pump 2 is running.
A loss of offsite power occurs.
All equipment operates as designed.

Which one of the following describes the action required to ensure CCW is operating correctly?

Verify #3 and #2 CCW pumps start after their respective EDG output breakers close.

Verify #1 and #2 CCW pumps start after their respective EDG output breakers close.

Verify all 3 CCW pumps start after output breakers for their respective EDG close.

Verify #2 CCW Pump starts and trip one of the two CCW Pumps running on C1 bus after their respective EDG output breakers close.

Proposed Answer: A

Explanation (Optional):

Correct.
Incorrect. Pumps will Auto Start but #3 is running in place of #1.
Incorrect. #1 will not start.

Incorrect. Only #3 will start on C1 bus.

Technical Reference(s): OS-21 Sheet 3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-405-14K (As available)

Question Source: Bank # ____
Modified Bank # X 50168 (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 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	063 K1.02	
	Importance Rating	2.7	

Knowledge of the physical connections and/or cause-effect relationships between the dc electrical system and the following systems: AC electrical system

Proposed Question: Common 22

The plant is in Mode 1 at 85% power when 4.16 KV Bus C1 is de-energized due to a bus fault. Assuming the crew takes no actions, which one of the following describes the electrical supply to Essential Instrument Distribution Panel Y1?

Rectified power from E12A through Inverter YV1.

E16A through a constant voltage transformer via the Static transfer Switch on Inverter YV1.

DC Distribution Panel D1P supplied from Battery Charger DBC1P through Inverter YV1.

DC Distribution Panel D1P supplied from the Station Battery 1P through Inverter YV1.

Proposed Answer: D

Explanation (Optional):

Incorrect. Battery will supply on loss of power. E12A lost
Incorrect. E16A has lost power
Incorrect. Battery Charger will have no power
Correct.

Technical Reference(s): DB-OP-06319 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-408-03K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content:
- 55.41 X
- 55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	064 K3.03	
	Importance Rating	3.6	

Knowledge of the effect that a loss or malfunction of the ED/G system will have on the following: ED/G (manual loads)

Proposed Question: Common 23

The following events have occurred:

A LOCKOUT of bus C1 has occurred due to a ground fault.
EDG 1 has been TRIPPED using the EMERGENCY SHUTDOWN pushbutton.
The cause of the ground fault has been located and corrected.

Which one of the following will be the result of resetting the C1 bus lockout?

EDG 1 will start but the output breaker will NOT AUTO CLOSE until EDG 1 lockout relay is manually reset.

EDG 1 will start and the output breaker will AUTO CLOSE and energize the bus after control power has been restored to C1 bus.

No equipment actuations will occur. The EDG Lockout Relay must be manually reset before EDG 1 will start or the output breaker will AUTO CLOSE.

The ALTERNATE supply breaker will immediately AUTO CLOSE and energize the bus.

Proposed Answer: C

Explanation (Optional):

Incorrect. EDG 1 will not start with a lockout.
Incorrect. EDG will not start and breaker will not close until the EDG lockout is reset.
Correct.
Incorrect. Alternate supply will not automatically close.

Technical Reference(s): DB-OP-02521 (Attach if not previously

_____ provided)

_____

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-406-03K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	073 K4.01	
	Importance Rating	4.0	

Knowledge of PRM system design feature(s) and/or interlocks which provide for the following: Release termination when radiation exceeds setpoint

Proposed Question: Common 24

Automatic closure of WM-1876, Miscellaneous Waste Discharge Common Outlet Valve, will occur on High Radiation on either radiation element or

A. High Release Rate

B. Loss of dilution flow

C. Low flow through either radiation element

D. WARN alarm on either radiation element.

Proposed Answer: C

Explanation (Optional):

Incorrect. High release rate does not input to valve
Incorrect. Loss of dilution flow will not trip valve
Correct.
Incorrect. WARN will not isolate the valve

Technical Reference(s): DB-OP-02050 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-111-04K (As available)

Question Source:	Bank #	X	
	Modified Bank #		(Note changes or attach parent)
	New		
Question History:	Last NRC Exam		
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	076-A4.04	
	Importance Rating	3.3	

Ability manually operate and/or monitor in the control room: Emergency Heat Loads

Proposed Question: Common 25

A LOCA causes Reactor Coolant System pressure to drop to 1400 psig.Which one of the following describes the response of the Service Water System?

Cooling water to the in-service CCW heat exchangers will throttle to maintain CCW temperature. Cooling of TPCW will automatically swap from Service Water to Circulating Water.

Cooling water flow to the in-service CCW heat exchangers will be maximized. Cooling of TPCW will automatically swap from Service Water to Circulating Water.

Cooling water to the in-service CCW heat exchangers will throttle to maintain CCW temperature. Cooling water to TPCW will automatically isolate and must be manually realigned.

Cooling water flow to the in-service CCW heat exchangers will be maximized. Cooling water to TPCW will automatically isolate and must be manually realigned.

Proposed Answer: B

Explanation (Optional):

CCW heat exchanger valves go open on an SFAS level 2
Correct
CCW heat exchanger valves go open on an SFAS level 2. TPCW cooling automatically transfers to Circ Water
TPCW cooling automatically transfers to Circ Water

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-305-03K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	076 K1.01	
	Importance Rating	3.4	

Knowledge of the physical connections and/or cause- effect relationships between the SWS and the following systems: CCW system

Proposed Question: Common 26

The following plant conditions exists:

A plant startup is in progress.
Reactor power is 1%.
Service Water Pumps 2 and 3 are operating.
Service Water Pump 1 is INOPERABLE.
CCW Pump 1 is in operation.
The Motor Driven Feedwater Pump is in service, taking suction on the deaerator.
Neither Main Feed Pump is in service.

Service Water Pump 3 trips on instantaneous overcurrent as indicated by a relay target at the breaker.

What actions would be appropriate for the conditions present?

Trip the Reactor, trip all four RCPs, and go to DB-OP-02000.

Line up Circulating Water to supply primary loads on Service Water Loop 1.

Start a CCW Pump on CCW Loop 2 and shift the non-essential CCW loads to CCW Loop 2.

Lineup and start the Startup Feedwater Pump and shutdown the Motor Driven Feed Pump.

Proposed Answer: C

Explanation (Optional):

Incorrect. Trip criteria not met
Incorrect. SW loads will realign to Circ Water on SFAS
Correct.
Incorrect. SUFP can not be used in Mode2

Technical Reference(s): DB-OP-02511 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-111-03K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	078 K2.02	
	Importance Rating	3.3	

Knowledge of bus power supplies to the following Emergency air compressor

Proposed Question: Common 27

A lockout on _____ will cause the Emergency Instrument air compressor to shut down.

AC Bus tie Transformer

Bus D2

Bus D1

Bus A

Proposed Answer: B

Explanation (Optional):

A. D2 will transfer to BD transformer on an AC transformer lockout
B. Correct. Bus D2 supplies the EIAC
C. D2 will transfer to BD transformer on a D1 Bus lockout
D. D2 will transfer to BD transformer on an A Bus lockout

Technical Reference(s): DB-OP-06251 (Attach if not previously provided)

DB-OP-06317

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-602-14A (As available)

Question Source:	Bank #	X	
	Modified Bank #		(Note changes or attach parent)
	New		
Question History:	Last NRC Exam		
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	103 K1.03	
	Importance Rating	3.1	

Knowledge of the physical connections and/or cause-effect relationships between the containment system and the following systems: Shield building vent system

Proposed Question: Common 28

Which one of the following Containment Hydrogen Control Systems (Post LOCA) takes suction from the Containment Dome and discharges to the lower levels of Containment?

Containment Recirculation System

Hydrogen Dilution Blowers

Hydrogen Recombination System

Hydrogen Purge System

Proposed Answer: A

Explanation (Optional):

Containment Recirculation distributes air from the containment dome to lower levels in containment during normal operation to prevent temperature stratification and emergency operation to prevent hydrogen buildup in the top of containment

Technical Reference(s): DB-OP-06501 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-108-1K (As available)

Question Source: Bank # X 31928

Modified Bank # _____ (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	001 K3.01	
	Importance Rating	2.9	

Knowledge of the effect that a loss or malfunction of the CRDS will have on the following: CVCS

Proposed Question: Common 29

The following plant conditions exist:

The unit is at 100% power.
The Rod Control Panel and Reactor Demand are ~~ICS is~~ in MANUAL while troubleshooting a power supply problem.
All other ICS stations are in AUTOMATIC.
A single control rod then drops **without** causing a reactor trip.
Tave is 575 F, lowering slowly.
Annunciator 4-2-E, PZR LVL LO, is actuated.
PZR level is 196 , lowering slowly.

Which one of the following describes the correct action and the basis for that action?

Raise the MU 32 setpoint to initiate PZR level on a trend towards the 100% power setpoint to ensure design basis assumptions are met.

Reduce the MU 32 setpoint to 180 to minimize the rise in PZR level when Tave is restored.

Place MU 32 in HAND and maximize makeup flow to ensure the PZR heaters remain energized.

Place MU 32 in HAND and match makeup to letdown to prevent a shift to the alternate MU Pump suction source.

Proposed Answer: B

Explanation (Optional):

Incorrect. It is not necessary to raise the setpoint for this to occur after Tave stabilizes.
Correct. The change in PZR level will track, accordingly.
Incorrect. MU 32 would automatically attempt to restore PZR level to the pre-existing setpoint value and present level is well above that interlock setpoint.
Incorrect. This disregards RCP seal injection.

Technical Reference(s): DB-OP-02516 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-116-03K (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 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	A3.01	
	Importance Rating	3.7	

Ability to monitor automatic operation of the RCS, including: Reactor Coolant Leak Detection System

Proposed Question: Common 30

The following plant conditions exist:

The unit is at 100% power.
All major systems are in automatic.
Computer Point T773 RC PRZR PWR RLF OUT TEMP indicates 306°F.
PZR Quench Tank level and pressure are increasing very slowly.

In accordance with technical specifications, which one of the following is the correct classification for this leakage?

Pressure boundary

RCS pressure isolation valve

Identified

Controlled

Proposed Answer: C

Explanation (Optional):

Incorrect. Leak is isolable.
Incorrect. PZR RLF is NOT an RCS Pressure Isolation Valve (TS Table 3.4-2).
Correct. In the surveillance procedure Quench Tank leakage is part of the identified leakage calculation.
Incorrect. Controlled leakage from RCP seal leak off

Technical Reference(s): TS Definition 1.14 (Attach if not previously provided)

DB-SP-03357

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-410-01K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	011 A2.08	
	Importance Rating	2.6	

Ability to (a) predict the impacts of the following malfunctions or operations on the PZR LCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of level compensation.

Proposed Question: Common 31

The following plant conditions exist:

The unit is at 100% power.
All major controls are in AUTO.
PZR Level is 220 inches.
LT RC14-2 is selected for PZR Level control.
TE RC15-1 is selected as the temperature instrument for PZR Level control.

~~Using the numbers in parentheses below,~~ Which one of the choices correctly fills in the blanks of the following statement?

If TE RC15-1 fails HIGH, LT RC14-2 indication will be _____. The Reactor Operator should place MU 32 in HAND and _____ makeup flow.

lower; raise

lower; reduce

higher; raise

higher; reduce

Proposed Answer: C

Explanation (Optional):

Level indicates high if compensation fails high
Level indicates high if compensation fails high. MU flow will need to be raised since the indicated level is high
Correct

MU flow will need to be raised since the indicated level is high

Technical Reference(s): DB-OP-02513 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-113-04K (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 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	016 K1.01	
	Importance Rating	3.4	

Knowledge of the physical connections and/or cause-effect relationships between the NNIS and the following systems: RCS

Proposed Question: Common 32

The following plant conditions exist:
e plant is initially operating at 85% power with ICS in full AUTOMATIC.
Tave is selected to Loop 2.
RCP 2-2 trips.

The Reactor Operator observes the following indications for RCS flow:

RCS loop 2 rapidly lowers to 46 mpph.
RCS loop 1 rapidly rises to 78 mpph.

Which of the following describes the operation of HIS-RC7, Tave Selector switch?

No automatic response, the operator may manually select only Loop 2.

No automatic response, the operator may manually select only Loop 1.

Automatically selects Loop 1.

Automatically selects Loop 2.

Proposed Answer: C

Explanation (Optional):

Incorrect. Auto response will occur with ICS in full auto. With Loop 2 below setpoint, manual selection cannot occur
Incorrect. Auto response will occur with ICS in full auto. Cannot override
Correct.
Incorrect. Loop with highest flow is selected

Technical Reference(s): OS-001A Sheet 1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-507-04K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content:
- 55.41 X
- 55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	015 K2.01	
	Importance Rating	3.3	

Knowledge of bus power supplies to the following: NIS channels, components, and interconnections

Proposed Question: Common 33

Which one of the following combinations represents the correct association of NI channels to power sources?

NI-1 & NI-5 are powered from Y1 and NI-2 & NI-6 are powered from Y2.

NI-4 & NI-8 are powered from Y4 and NI-3 & NI-7 are powered from Y3.

NI-2 & NI-6 are powered from Y1 and NI-4 & NI-8 are powered from Y3.

NI-2 & NI-4 are powered from Y2 and NI-1 & NI-3 are powered from Y4.

Proposed Answer: C

Explanation (Optional):

Incorrect. NI-2 & NI-6: RPS Ch 1 Y1
Incorrect. NI-1 & NI-5: RPS Ch 2 Y2
Correct. NI-4 & NI-8: RPS Ch 3 Y3
Incorrect. NI-3 & NI-7: RPS Ch 4 Y4

Technical Reference(s): DB-OP-06403 (Attach if not previously provided)

DB-OP-02505

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-504-04K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	086 K5.03	
	Importance Rating	3.1	

Knowledge of the operational implications of the following concepts as they apply to the Fire Protection System: Effect of water spray on electrical components

Proposed Question: Common 34

The following plant conditions exist:

The unit is at 35% power, holding following a power reduction for maintenance.
The crew is responding to Annunciator Alarm 9-1-G, FIRE OR RADIATION TRBL.
Deluge actuation is indicated by FSA-MAIN-TRANS C-3310 YD-PROT.

Which one of the following is the correct action?

Manually trip ACB 34560 and ACB 34561.

Manually trip ABS 34620.

De-energize the transformer by initiating a manual reactor trip.

De-energize the transformer by initiating a manual turbine trip.

Proposed Answer: D

Explanation (Optional):

Incorrect. Tripping ACB 34560 and 34561 does not deenergize the transformer.
Incorrect. Tripping ABS 34620 does not deenergize the transformer.
Incorrect. Power is less than 40%.
Correct. Turbine trip required at < 40% power.

Technical Reference(s): DB-OP-02529 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-129-05K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	035 K6.03	
	Importance Rating	2.6	

Knowledge of the effect of a loss or malfunction on the following will have on the S/GS: S/G level detector

Proposed Question: Common 35

The following plant conditions exist:

100% power.
All major controls in AUTO.
The diaphragm ruptures on the D/P cell causing an instantaneous change in the level signal to the Operating Range level channel selected as the controlling input.

Assuming no operator action, which one of the following correctly describes SG level response?

Level transmitter output fails HIGH. Actual level would decrease until the low level limit is reached.

Level transmitter output fails HIGH. Actual will level remain the same due to SASS transfer.

Level transmitter output fails LOW. Actual level would increase until the high level limit is reached.

Level transmitter output fails LOW. Actual level will remain the same due to SASS transfer.

Proposed Answer: B

Explanation (Optional):

Incorrect. Correct direction but SASS will shift control to the alternate channel.
Correct. ZERO D/P indicates HIGH level and SASS shifts control to the alternate channel.
Incorrect. Incorrect direction and response.
Incorrect. Incorrect direction but SASS response correct.

Technical Reference(s): LP OLC-BAT-I626 (Attach if not previously provided)

DB-OP-02014

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-516-04K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	045 A4.01	
	Importance Rating	3.1	

Ability to manually operate and/or monitor in the control room: Turbine valve indicators (throttle, governor, control, stop, intercept), alarms, and annunciators

Proposed Question: Common 36

Which one of the following meets the procedural criteria for confirmation of a turbine trip?

All HP TURBINE STOP VALVE lights illuminated on center console C5708.

All HP TURBINE STOP VALVES indicate closed on the Plant Computer.

Annunciator Alarm 8-1-B, T-G MASTER TURB TRIP, actuated.

Annunciator Alarm 15-1-E, TURBINE TRIP, actuated.

Proposed Answer: A

Explanation (Optional):

Correct. Lights illuminate with stop valves closed.
Incorrect. Plant Computer not used for safety-related decisions.
Incorrect. Alarm not actuated from stop valve position.
Incorrect. Indicates that an auto turbine trip parameter has been exceeded.

Technical Reference(s): DB-OP-02501 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-01K (As available)

Question Source:	Bank #		
	Modified Bank #		(Note changes or attach parent)
	New	X	
Question History:	Last NRC Exam		
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	041 A1.02	
	Importance Rating	3.1	

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the SDS controls, including: Steam pressure.

Proposed Question: Common 37

The following plant conditions exist:

The unit is holding at 50% power while main turbine lubricating oil pressure fluctuations are being investigated.
All major controls are in AUTO.
Main Steam pressure is 870 PSIG.

Which one of the choices correctly completes the following statement?

If an automatic turbine trip occurs, Main Steam pressure will be maintained at _____ PSIG.

870

920

995

1025

Proposed Answer: C

Explanation (Optional):

Incorrect. 0 bias with turbine tripped but reactor critical.
Incorrect. 50 PSIG bias with reactor and turbine reset.
Correct. 125 PSIG bias with reactor tripped.
Incorrect. AVV setpoint. No indication that power or vacuum has been lost.

Technical Reference(s): DB-OP-06201 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-202-06K (As available)

Question Source: Bank # ____
Modified Bank # 38714 (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 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	079 G2.1.23	
	Importance Rating	3.9	

Station Air: Ability to perform specific system and integrated plant procedures during all modes of plant operation.

Proposed Question: Common 38

A plant shutdown is in progress.

Prior to removing the turbine from service DB-OP-06903, Plant Shutdown and Cooldown directs placing both sets of Instrument Air Dryers in service due to high Instrument Air flow rates when the _____

A. GE Air Relay Valve repositions.

B. Turbine Bypass Valves are placed in service.

C. Feedwater Heater Emergency Drain Valves reposition.

D. Turning Gear automatically engages.

Proposed Answer: B

Explanation (Optional):

TBV air requirements exceed flow capability of one set of air dryers. IA capable of adequately supplying other loads

Technical Reference(s): DB-OP-06903 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-206-03K (As available)

Question Source:	Bank #		
	Modified Bank #		(Note changes or attach parent)
	New	X	
Question History:	Last NRC Exam		
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	008 AK1.01	
	Importance Rating	3.2	

Knowledge of the operational implications of the following concepts as they apply to a Pressurizer Vapor Space Accident: Thermodynamics and flow characteristics of open or leaking valves

Proposed Question: Common 39

Which of the following provides the most credible indication that the Power Operated Relief Valve (PORV) is stuck open?

Pressurizer level is rapidly decreasing with decreasing Tave and decreasing Reactor Coolant System pressure.

The red indicating light on the PORV switch (HISRC2-6) is illuminated.

Accelerometer alarm on the Vibration and Loose Parts Monitor.

Reactor Coolant System Pressure is decreasing, Tave is stable and Pressurizer level is stable or slowly increasing.

Proposed Answer: D

Explanation (Optional):

A. Tave will be stable, Prz level will not change rapidly
B. The red indicating light on the PORV switch indicates solenoid position and is not a posi
C. Prz has acoustic monitor, but not an accelerometer
D. Correct

Technical Reference(s): DB-OP-02513 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-113-01K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content:
- 55.41 X
- 55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	009 G2.4.50	
	Importance Rating	3.3	

Emergency Procedures / Plan Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.

Proposed Question: Common 40

The following plant conditions exist:
The plant is at 100% power.
Makeup Pump 1 is out of service.

The Reactor Operator notices the following:

SEAL INJ FLOW LO, 6-5-C
SEAL INJ TOTAL FLOW, 6-6-C
PZR LVL LO, 4-2-E
Running Makeup Pump discharge pressure 0 psig
MU32, PZR LEVEL CONTROL, indicates 100% demand
MU19, RCP SEAL INJ FLOW CONTROL, indicates 100% demand
PZR level is 156 inches

Which one of the following is the action required by the crew under these conditions?

Isolate seal injection by closing MU 66A, B, C, & D.

Trip all four Reactor Coolant Pumps.

Trip the Reactor and go to DB-OP-02000.

Isolate seal return by closing MU 38.

Proposed Answer: C

Explanation (Optional):

Incorrect. MU 19 is closed to isolate seal injection
Incorrect. CCW still available
Correct. PZR level is below 160 inches with no makeup
Incorrect. Isolating seal return would not mitigate a loss of makeup

Technical Reference(s): DB-OP-02512 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-112-02K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	AA1.23	
	Importance Rating	3.1	

Ability to operate and / or monitor the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): RCP vibration

Proposed Question: Common 41

While at 70% RTP, four (4) RCPs in service.

The Reactor Operator notices the following:

6-1-A, 1-1 MOTOR VIB HI
6-2-A, 1-1 SEAL RET TEMP HI
6-3-A, 1-1 SEAL RET FLOW HI
6-5-A, MONITOR SYSTEM TROUBLE
Seal return temperature for RCP 1-1 is 150°F and stable.

Which one of the following indications/equipment can be used to verify the current plant condition?

SPDS.

SFAS Channels 1, 2, 3, 4 data lights.

SFRCS output module lights.

RPS Channels 1, 2, 3, 4 bistable output state lights.

Proposed Answer: A

Explanation (Optional):

Correct.
Incorrect. SFAS data lights would not be used to verify parameters unless post trip during accident conditions
Incorrect. SFRCS output modules would be verification of an actual pump trip SFRCS actuation
Incorrect. RPS output state lights would be a verification of at least 2 RCPs tripped

Technical Reference(s): DB-OP-02515 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-115-04K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	022 G2.1.30	
	Importance Rating	3.9	

Conduct of Operations: Ability to locate and operate components, including local controls.

Proposed Question: Common 42

The following plant conditions exist:

The plant is at 100% power.
ICS is in full AUTO.

The Reactor Operator notices the following:

6-5-C, SEAL INJ FLOW LO
6-6-C, SEAL INJ TOTAL FLOW
MU Pump 1 is running.
Discharge pressure and flow is erratic.
MU-32 is opening.
MU-19 is opening.
MU tank level is 6 and lowering.
PZR level is 176 inches and lowering.

The crew enters DB-OP-02512, Loss of RCS Makeup, and trips MU Pump 1.

Which one of the following additional actions is required to re-establish makeup?

Align MU Pump 2 to BWST to provide makeup flow.

Vent MU Pump 2. Align MU Pump 2 to BWST to provide makeup flow.

Lineup and start HPI piggyback operation.

Vent BOTH MU pumps. Align either pump to MU tank to provide MU flow.

Proposed Answer: A

Explanation (Optional):

Correct.
Incorrect. No required to vent a pump that has not shown indication of cavitation
Incorrect. No required to vent a pump that has not shown indication of cavitation
Incorrect. Suction source will be the BWST

Technical Reference(s): DB-OP-02512 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-112-02K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	025 AK2.02	
	Importance Rating	3.2	

Knowledge of the interrelations between the Loss of Residual Heat Removal System and the following: LPI or Decay Heat Removal/RHR pumps

Proposed Question: Common 43

The following plant conditions exist:

The plant is in Mode 5.
LI 10577A and LI 10577B RCS level indicators, indicate 18 inches.
The running DH pump trips.

Which one of the following explains why the standby DH pump is NOT started immediately after the running DH pump trips?

To prevent damage to the standby DH pump due to air binding in the suction line.

To prevent overpressurizing the DH system downstream of the DH pumps.

To prevent lifting the relief valves on the DH pump suction header.

To prevent damage due to water hammer in the DH system.

Proposed Answer: A

Explanation (Optional):

Correct. Reduced inventory, vortexing is a concern.
Incorrect.
Incorrect.
Incorrect.

Technical Reference(s): DB-OP-02527 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-127-04K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content:
- 55.41 X
- 55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	026 AA2.06	
	Importance Rating	2.8	

Ability to determine and interpret the following as they apply to loss of CCW: The length of time after the loss of CCW flow to a component before that component may be damaged

Proposed Question: Common 44

Which one of the following describes the operation of the LPI, HPI, and MU pumps during a loss of Component Cooling Water?

HPI and LPI pumps may be operated for up to one hour. MU pumps can operate as long as the MU Pump room HVAC unit is in service.

MU pumps may be operated for up to one hour. HPI and LPI pumps must be tripped immediately.

MU pumps must be tripped immediately. HPI and LPI pumps can operate as long as the ECCS room coolers are in service.

MU, LPI, and HPI pumps may be operated for up to one hour.

Proposed Answer: D

Explanation (Optional):

Incorrect.
Incorrect.
Incorrect.
Correct. All ECCS pumps (HPI. LPI, MU) may be operated for up to one hour on loss of CCW.

Technical Reference(s): DB-OP-02523 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-123-03K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	027 AK3.04	
	Importance Rating	2.8	

Knowledge of the reasons for the following responses as they apply to the Pressurizer Pressure Control Malfunctions: Why, if pressurizer level is lost and then restored, that pressure recovers much more slowly

Proposed Question: Common 45

The following plant conditions exist:

The plant is at 100% power.
An instrument failure has caused Tave to decrease to 575°F.
Annunciator 4-2-E, PZR LVL LO, is in alarm.
The instrument failure has been resolved and RCS Tave is recovering.

As Tave recovers, with no further operator action, RCS pressure will _____ due to _____.

decrease; colder Pressurizer spray bypass flow

increase; compressing the steam bubble resulting in an increase in superheat of the steam

Decrease, insufficient Pressurizer heater capacity to compensate for low temperature water insurge

Increase; makeup flow response to low Pressurizer level

Proposed Answer: D

Explanation (Optional):

Incorrect. Spray bypass flow is inconsequential for this energy balance. Pressure will rise due to insure.

Incorrect. Compressing the steam bubble (due to level rise) does not result in or increase superheat. It results in reduced steam quality.

Incorrect. Pressurizer such that pressure will decrease following Tave recovery. This effect is masked during the temperature recovery by item d below.

Correct. Due to low Pressurizer level, resulting from RCS thermal contraction, Makeup flow goes to maximum resulting in faster and larger magnitude of insurge than that expected by the temperature transient alone.

Technical Reference(s): DB-OP-02004 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-104-15K (As available)

Question Source: Bank # X

Modified Bank # ____ (Note changes or attach parent)

New ____

Question History: Last NRC Exam ____

Question Cognitive Level: Memory or Fundamental Knowledge ____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 ____

Comments:

Need to analyze given conditions to determine plant response.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	029 EA2.01	
	Importance Rating	4.4	

Ability to determine and interpret the following as they apply to an ATWS: Reactor nuclear instrumentation

Proposed Question: Common 46

The following plant conditions exist:

The plant was at 100% power.
A manual reactor trip was performed, and the crew has entered DB-OP-02000.

Which one of the following indicates that the trip was UNSUCCESSFUL and an ATWS has occurred?

Three Group 7 rods did NOT insert.

None of the RPS parameter specific trip bistable annunciators are in alarm.

Intermediate Range NIs indicate 10^{-5} amps and slowly lowering.

A and B reactor trip breakers indicate closed. C and D reactor trip breakers indicate open.

Proposed Answer: C

Explanation (Optional):

Incorrect. If 3 rods stuck, not an ATWS, but a requirement for boration for SDM.
Incorrect. Bistable annunciators would not immediately alarm on a manual trip.
Correct.
Incorrect. A and C, or B and D closed will maintain power to CRDs

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-302-05K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	038 EK1.01	
	Importance Rating	3.1	

Knowledge of the operational implications of the following concepts as they apply to the SGTR: Use of steam tables

Proposed Question: Common 47

Given the following:

INITIAL CONDITIONS:

OTSG Tube Rupture in progress
RCS temperature = 525°F
RCS pressure = 1200 psig
RCS cooldown in progress

CURRENT CONDITIONS:

RCS temperature = 425°F
RCS pressure = 750 psig

From initial to current conditions, subcooling margin has _____ and SG tube leakage rate has _____.

increased / decreased

increased / increased

decreased / decreased

remained the same / remained the same

Proposed Answer: B

Explanation (Optional):

Incorrect. SCM will increase and the leak rate will increase since the delta P between primary and secondary has decreased.
Correct. During cooldown the SCM increases due to maintaining RC pressure above the RCP NPSH curve. SGTL size will increase due to the increase in primary to secondary DP.
Incorrect. SCM and SGTL size has increased.
Incorrect. Parameters will not remain the same if DP changes

Technical Reference(s): Steam Tables (Attach if not previously provided)

DB-OP-02000

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

Learning Objective: OPS-GOP-300-07K (As available)

Question Source: Bank # X

Modified Bank # ____ (Note changes or attach parent)

New ____

Question History: Last NRC Exam ____

Question Cognitive Level: Memory or Fundamental Knowledge ____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	040 AA1.03	
	Importance Rating	4.3	

Ability to operate and / or monitor the following as they apply to the Steam Line Rupture: Isolation of one steam line from header

Proposed Question: Common 48

The following plant conditions exist:

A reactor trip from 100% power has occurred.
All equipment has automatically operated as designed.
OTSG pressures are currently as follows:

OTSG 1-1 - 460 psig and trending DOWN
OTSG 1-2 - 620 psig and trending DOWN

Which one of the following correctly describes the status of OTSG isolation?

AFW is isolated to OTSG 1-1 only.

AFW is isolated to OTSG 1-2 only.

AFW is isolated to BOTH OTSGs.

AFW is isolated to NEITHER OTSG.

Proposed Answer: A

Explanation (Optional):

The last OTSG to fall below 620 psig is still fed. On a low pressure signal, the first OTSG to fall below 620 psig is isolated, and the AFP feeding it is realigned to the OTSG with the higher pressure.

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-306-06A (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	054 AA2.06	
	Importance Rating	4.0	

Ability to determine and interpret the following as they apply to the Loss of Main Feedwater (MFW): AFW adjustments needed to maintain proper Tave. and S/G level

Proposed Question: Common 49

The following plant conditions exist:

A loss of Condenser Vacuum has occurred.
Both Main Feedwater Pumps have tripped.
The reactor is tripped.
All systems responded properly.

Which one of the following describes the operation of the Secondary System for these conditions, assuming no operator actions?

AFW is maintaining OTSG levels at 40 . AVVs are maintaining Tave at 530°F 535°F.

AFW is maintaining OTSG levels at 49 . Main Steam Safety Valves are maintaining Tave at 545°F 555°F.

AFW is maintaining OTSG levels at 40 . Main Steam Safety Valves are maintaining Tave at 535°F 540°F.

AFW is maintaining OTSG levels at 49 . AVVs are maintaining Tave at 545°F 555°F.

Proposed Answer: B

Explanation (Optional):

SFRCS trip on reverse DP or low SG levels AFW controls at 49 . Post trip MSSV pressure maintained at 1050 psig . 552EF.

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-303-04K (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 X
- 55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	055 EK1.02	
	Importance Rating	4.1	

Knowledge of the operational implications of the following concepts as they apply to the Station Blackout: Natural Circulation cooling

Proposed Question: Common 50

The following plant conditions exist:

Tripped from full power due to loss of offsite power (LOOP).
RCS pressure = 1585 psig.
Incore Thermocouple temperatures = 555°F, increasing at 1°F/minute.
T-hot Loop 1/2 = 550°F, lowering slowly.
T-cold Loop 1 = 493°F, lowering slowly.
T-cold Loop 2 = 495°F, lowering slowly.
SG 1/2 pressures = 640 psig, lowering slowly.
AVVs = 10% open, manually controlled.
AFW flows = 140 gpm to each OTSG.
SG 1/2 levels = 124 inches, steady.

Based on these conditions, identify an operational condition that describes the basis for NOT DECLARING the existence of Natural Circulation.

OTSG steam flow conditions are low.

Loop Delta T is too large

OTSG levels do not satisfy OTSG Level rule requirements.

T-cold temperatures are NOT being controlled by OTSG conditions.

Proposed Answer: B

Explanation (Optional):

Incorrect. Feed/steam flow exists, which is all that is necessary.
Correct. Loop Delta T is above 50 deg F.
Incorrect. Although not at required level, not a criterion for natural circ.
Incorrect. Coupling of OTSGs appears to be occurring.

Technical Reference(s): DB-OP-06903 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-202-06K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

TMI Bank

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	056 AA2.54	
	Importance Rating	2.9	

Ability to determine and interpret the following as they apply to the Loss of Offsite Power: Breaker position (remote and local)

Proposed Question: Common 51

On a loss of offsite power, the 90% undervoltage relay for Bus C1 failed to actuate.

Which one of the following actions will occur following the start of EDG 1?

C1 bus will lockout.

AC101 (EDG 1 output breaker) will not close in.

AC101 (EDG 1 output breaker) will close in, reenergizing bus C1 only.

C2 will reenergize when AC101 (EDG 1 output breaker) closes in due to AC110 remaining closed

Proposed Answer: C

Explanation (Optional):

Incorrect. No condition for lockout. Requires a fault.
Incorrect. With 90% undervoltage relay not actuated, 59% relay starts EDG and connects.
Correct.
Incorrect. 59% relay will open AC110.

Technical Reference(s): DB-SC-03114 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-405-05K (As available)

Question Source: Bank # X ORQ-37841

Modified Bank # _____ (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	057 AA1.04	
	Importance Rating	3.5	

Ability to operate and / or monitor the following as they apply to the Loss of Vital AC Instrument Bus: RWST and VCT valves

Proposed Question: Common 52

The plant is at 100% power.
The RCS pressure low trip bistable (BA 304) in SFAS Channel 3 has been tripped to comply with a Tech. Spec action statement

Which one of the following describes how a subsequent loss of Y1 bus will affect the Makeup and Purification System?

Seal Return will be lost due to MU 59A, MU 59B, MU 59C and MU 59D going closed

Seal Injection will be lost to RCP 1-1 and RCP 2-2 due to MU 66B and MU 66C going closed

C. RCS Makeup will be lost due to MU 6422 going closed

D. Letdown will be lost due to MU 2A going closed

Proposed Answer: D

Explanation (Optional):

Incorrect. MU 59 valves are SFAS level 3 actuated
Incorrect. MU 66 valves are SFAS level 3 actuated
Incorrect. MU 6422 is not an SFAS valve
Correct. MU2A is an SFAS level 2 valve. BA 304 will actuate level 2 output modules

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-506-05K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	057 AA1.04	
	Importance Rating	3.5	

Ability to operate and / or monitor the following as they apply to the Loss of Vital AC Instrument Bus: RWST and VCT valves

Proposed Question: Common 52a

The plant is at 100% power.

The SFAS Low-Low Pressure bistable (BA 304) in SFAS Channel 3 has been tripped to comply with a Tech. Spec action statement.

Which one of the following describes how a subsequent loss of Y1 bus will affect the Makeup and Purification System?

Seal Return will be lost due to MU 59A, MU 59B, MU 59C and MU 59D going closed

Seal Injection will be lost to RCP 1-1 and RCP 2-2 due to MU 66B and MU 66C going closed

C. RCS Makeup will be lost due to MU 6422 going closed

D. Letdown will be lost due to MU 2A going closed

Proposed Answer: A, B

Explanation (Optional): Two correct answers.

A. Correct. MU 59 valves are SFAS level 3 actuated
Correct. MU 66 valves are SFAS level 3 actuated
Incorrect. MU 6422 is not an SFAS valve
Incorrect. MU2A is an SFAS level 2 valve. BA 304 will actuate level 2 output modules

Technical Reference(s): DB-SC-03112; Dwgs OS-002, SH 1 and 2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-506-05K (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 X
55.43 _____

Comments: Question revised during exam administration.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	062 AA1.04	
	Importance Rating	2.7	

Ability to operate and / or monitor the following as they apply to the Loss of Nuclear Service Water: CRDM high-temperature alarm system

Proposed Question: Common 53

The following plant conditions exist:

The plant is at 100% power. ICS is in full automatic.
All other systems are in normal configuration.
CCW Loop 1 is in service.

The following alarm is received:
_ 5-6-D, CRD BOOSTER PMP ΔP HI/FLOW LO

CC 1567A, CCW TO CRDM, had failed closed and cannot be reopened.
Computer alarms T206, T207, T213 are received (CRD motor stator temp)
CRD motor stator temps are between 174EF and 182EF, and rising slowly.

Which one of the following describes the action required next?

Start both CRD ventilation fans.

Trip the reactor and enter DB-OP-02000.

Start the standby CRD booster pump.

Place CCW Loop 2 in service and shutdown CCW Loop 1.

Proposed Answer: B

Explanation (Optional):

Incorrect. Fans for CMNT atmosphere, not specifically CRDs
Correct. Any CRD motor temperature >180, trip reactor
Incorrect. Action if CRD Booster pump failed
Incorrect. Part of action loss of CCW

Technical Reference(s): DB-OP-02523 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-123-02K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	E04 EA1.1	
	Importance Rating	4.4	

Ability to operate and / or monitor the following as they apply to the (Inadequate Heat Transfer) Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.

Proposed Question: Common 54

Given the following:

INITIAL CONDITIONS:

Reactor power = 100%

CURRENT CONDITIONS:

Loss of Main Feedwater
Loss of ALL AFW
SFRCS tripped on high steam to feedwater differential pressure

Assuming NO action by the crew, which one of the following is correct concerning the first hour of this event?

PZR level will initially decrease and then stabilize at approximately 220 inches.

Decay heat will initially be removed via Main Steam Safety Valves and then by the PORV cycling.

RCS pressure will initially decrease and then stabilize at approximately 2155 psig.

SFAS Levels 1, 2, and 3 will initially actuate on low RCS pressure and eventually SFAS Level 4 will actuate on high-high containment pressure.

Proposed Answer: B

Explanation (Optional):

Incorrect. PZR level will initially decrease on the reactor trip. After the trip the RCS will heat up due to no water feeding the SGs. This will cause PZR level to increase, eventually going solid.

Correct. Decay heat will initially be removed via MSSVs and then by the PORV cycling. Until the existing water is steamed from the SGs the MSSVs will remove core heat. After the SGs are dry the RCS will heat up and pressurize until the PORV lifts. The PORV will continue to cycle removing decay heat until RCS inventory is depleted.

Incorrect. RCS pressure will initially decrease on the reactor trip due to PZR level decreasing. After the trip the RCS will heat up due to no water feeding the SGs. This will cause PZR level to increase, eventually going solid. As a result RCS pressure will also increase.

Incorrect. Although RCS pressure will initially decrease on the reactor trip Containment pressure will not increase to the SFAS level 4 setpoint within an hour

Technical Reference(s): EOP Tech Basis Document (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-300-10K (As available)

Question Source: Bank # x

Modified Bank # _____ (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 _____

Comments:

TMI Bank

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	E05 EK2.2	
	Importance Rating	4.2	

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

Proposed Question: Common 55

The following plant conditions exist:

The reactor has tripped.
SG 2 was isolated by the SFRCS low pressure trip and indicates 0 psig.
A main steam safety valve on SG 1 is leaking.
RCS cooldown rate due to the leakage is 45°F per hour.

Which one of the following is the correct operator response?

Isolate AFW to both SGs and initiate makeup/HPI cooling.

Use AFW Pumps to feed SG 1.

Use MDFP to feed both SGs.

Align SUFP to feed SG1.

Proposed Answer: B

Explanation (Optional):

Incorrect. The cooldown rate on SG1 is < 100%F/hr., cooldown may continue using SG1.
Correct.
Incorrect. SG 2 cannot be feed due to the SFRCS trip.
Incorrect. SUFP would only be aligned due to a lack of heat transfer.

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-306-06A (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	E10 EK3.3	
	Importance Rating	4.0	

Knowledge of the reasons for the following responses as they apply to the (Post-Trip Stabilization) Manipulation of controls required to obtain desired operating results during abnormal and emergency situations.

Proposed Question: Common 56

The following plant conditions exist:

The reactor automatically tripped from 95% power.
All expected automatic and operator actions have occurred.
The Unit Supervisor is directing trip recovery actions in accordance with DP-OP-06910, Trip Recovery.

Placing the Turbine Bypass Valves in HAND prior to resetting the CRD breakers will _____.

maintain the required shutdown margin above the Technical Specification minimum

prevent pressurizer level from increasing offscale high when the CRD breakers are reset

prevent an uncontrolled cooldown of the reactor coolant system when the CRD Breakers are reset

ensure steam generator pressure remains below the Main Steam Safety Valve setpoint

Proposed Answer: C

Explanation (Optional):

Incorrect. Cooldown will not be significant enough to challenge SDM.
Incorrect. Pressurizer level will decrease.
Correct.
Incorrect. Steam pressure will remain below setpoints for MSSVs because it will lower when CRD breakers are reset.

Technical Reference(s): DB-OP-06910 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-207-02K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	051 AA2.02	
	Importance Rating	3.9	

Ability to determine and interpret the following as they apply to the Loss of Condenser Vacuum: Conditions requiring reactor and/or turbine trip

Proposed Question: Common 57

While operating at 50% power, the following symptoms are observed:

High condenser pressure alarm.
Mechanical hogger auto starts.
Condenser pressure is 7.9 in. HgA and slowly increasing.
Generator Output is 420 MWe

Which one of the following is the appropriate action?

Commence a rapid shutdown to less than 28% power, then manually trip the turbine and carry out the actions of DB-OP-02500, Turbine Trip.

Trip MFPTs and ensure ICS runs the plant back in accordance with DB-OP-06401, Integrated Control System Operating Procedure.

Trip the turbine and carry out the actions of DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture.

Commence immediate plant shutdown to establish Mode 3 conditions in accordance with DB-OP-06902, Power Operations.

Proposed Answer: C

Explanation (Optional):

Incorrect.
Incorrect.
Correct. Turbine trip criteria is met. 7.5 Hg. Reactor will trip on turbine trip at 50% power
Incorrect.

Technical Reference(s): DB-OP-02518 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-118-05K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	059 AK1.01	
	Importance Rating	2.7	

Knowledge of the operational implications of the following concepts as they apply to Accidental Liquid Radwaste Release: Types of radiation, their units of intensity and the location of the sources of radiation in a nuclear power plant

Proposed Question: Common 58

Which one of the following describes the type of activity contained in an accidental release of the Clean Waste Monitor Tank (CWMT)?

A. Mostly beta-gamma

B. Delayed neutron and fission gasses

C. Alpha-neutron and fission gasses

D. Mostly alpha and beta

Proposed Answer: A

Explanation (Optional):

Correct.
Incorrect.
Incorrect.
Incorrect.

Technical Reference(s): ODCM (Attach if not previously provided)

10CFR20

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-607-03A (As available)

Question Source:	Bank #	X WTSI 44473 Prairie Island NRC Exam
	Modified Bank #	_____ (Note changes or attach parent)
	New	_____
Question History:	Last NRC Exam	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	_____
10 CFR Part 55 Content:	55.41	X
	55.43	_____

Comments:

May need a new KA for this one.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	060 G2.4.31	
	Importance Rating	3.3	

Emergency Procedures/Plan: Knowledge of annunciators, alarms and indications, and use of the response instructions

Proposed Question: Common 59

A WGDT Batch release is in progress when the following alarms are received:

9-3-A, UNIT VENT RAD HI
R840, Unit Vent Rad. RE 4598BA/BB
R841, Unit Vent Rad. RE 4598AA/AB

RE 4598AA and RE 4598BA indication continues to rise.
All equipment operates as designed.

Which one of the following describes the MINIMUM action required in the control room?

Verify Control Room ventilation shuts down and HVAC dampers close. Verify at least one train of Control Room Emergency Ventilation automatically starts.

Place the Control Room ventilation in the recirculation mode. Manually start at least one train of Control Room Emergency Ventilation.

Verify Control Room ventilation shuts down and HVAC dampers close. Manually start BOTH trains of Control Room Emergency Ventilation.

Place the Control Room ventilation in the recirculation mode. Verify BOTH trains of Control Room Emergency Ventilation automatically start.

Proposed Answer: C

Explanation (Optional):

Incorrect. CREVS does not automatically start
Incorrect. Both Trains must be initiated.
Correct.
Incorrect. CREVS does not automatically start.

Technical Reference(s): DB-OP-02009 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-606-06K (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 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	068 AK2.07	
	Importance Rating	3.3	

Knowledge of the interrelations between the Control Room Evacuation and the following: ED/G

Proposed Question: Common 60

A Control Room evacuation is in progress.

Which of the following electrical sources is protected during the performance of DB-OP-02519, Serious Control Room Fire?

Both Emergency Diesel Generators

Emergency Diesel Generator 1 only

Emergency Diesel Generator 2 only

Station Blackout Diesel Generator

Proposed Answer: B

Explanation (Optional):

Only train 1 components are protected during a serious control room fire

Technical Reference(s): DB-OP-02519, Attachment 2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-119-03K (As available)

Question Source: Bank #

Modified Bank # (Note changes or attach parent)

New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	076 AK3.06	
	Importance Rating	3.2	

Knowledge of the reasons for the following responses as they apply to the High Reactor Coolant Activity : Actions contained in EOP for high reactor coolant activity

Proposed Question: Common 61

The plant was at 100% power with annunciator 2-1-A, LETDOWN RADIATION HI in alarm due to a small fuel leak.

A SG tube rupture has now developed and a rapid shutdown is in progress in accordance with DB-OP-02000.

Which one of the following actions is taken to minimize off-site releases?

A. Place the Vacuum Vent Filter in service.

B. Place the Mechanical Hogger in service and shutdown the Steam Jet Air Ejectors.

Place a second Purification Demineralizer in service and increase Letdown flow.

Place the Letdown filter in service.

Proposed Answer: A

Explanation (Optional):

A. Correct. Vacuum vent filter will filter condenser off-gas discharge
B. Incorrect. Mechanical hogger still discharges to the station vent
C. Incorrect. Letdown is isolated for the SGTR
D, Incorrect. Letdown is isolated for the SGTR

Technical Reference(s): DB-OP-02531 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-131-11K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content:
- 55.41 X
- 55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	A02 AK3.4	
	Importance Rating	3.7	

Knowledge of the reasons for the following responses as they apply to the (Loss of NNI-X) 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.

Proposed Question: Common 62

The plant was at 100% power.

Station annunciators have lost power.

Five (5) minutes later, the RO reports the following:

No indicating lights lit on any of the ICS stations.
Main feedwater block valves are closing
MFPT speed is at 4400 rpm.

Which one of the following is the required response and the reason for the response?

Trip both main feedwater pumps.
Prevents overfeeding the steam generators due to MFPT speed increasing.

Trip both main feedwater pumps.
Prevents overfeeding the steam generators due to main and startup feedwater valves failing 50% open.

Initiate AFW and isolate both steam generators.
Prevents overfeeding the steam generators due to main and startup feedwater valves failing 50% open.

Initiate AFW and isolate both steam generators.
Prevents overfeeding the steam generators due to MFPT speed increasing.

Proposed Answer: C

Explanation (Optional):

Incorrect. Main FW Pump trip not required. MFP speed decreases
Incorrect. Main FW Pump trip not required.
Correct.
Incorrect. MFP speed decreases.

Technical Reference(s): DB-OP-02532 (Attach if not previously provided)

DB-OP-02000

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-SYS-132-01K (As available)

Question Source: Bank # X

Modified Bank # _____ (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	A07 AA2.2	
	Importance Rating	3.3	

Ability to determine and interpret the following as they apply to the (Flooding) Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

Proposed Question: Common 63

The following plant conditions exist:

The plant was at 100% power.
A Circulating Water System pipe rupture has occurred.
The crew is performing action contained in DB-OP-02517, Circulating Water Pump Trip/Circulating Water System Ruptures.

Which one of the following identifies plant equipment that may be required to be shutdown to prevent damage due to flooding?

All three Condensate Pumps

Both Auxiliary Feedwater Pumps

All three CCW Pumps

All three TPCW Pumps

Proposed Answer: A

Explanation (Optional):

Correct. The affected area is the East and West Condenser Pit, elevation 567.
Incorrect. AFW pumps are in a separate room and a curb protects their openings at elevation 585.
Incorrect. CCW pumps are in a separate room at elevation 585.
Incorrect. TPCW Pumps are at Elevation 585.

Technical Reference(s): DB-OP-02517 & AB discussion (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-117-02K (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 X
Comprehension or Analysis ____

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	E13 EA1.3	
	Importance Rating	3.4	

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

Proposed Question: Common 64

A small break LOCA resulted in a loss of Subcooling Margin (SCM).

The following plant conditions currently exist:

RCS pressure is 1300 psig.
RCS T-cold is 545°F and decreasing.
RCS average incore temperature is 542°F and decreasing.
Pressurizer level is 45 and increasing.
Steam generator levels are being maintained per Specific Rule 4.

Which one of the following statements is correct, given the above conditions?

Maintain maximum HPI flow until natural circulation is developed and cooldown at less than 50°F/hr.

Throttle HPI flow when pressurizer level is restored to 80 120 inches and cooldown at less than 100°F/hr.

Throttle HPI flow to maintain RCS pressure at minimum adequate SCM and cooldown at less than 50°F/hr.

Maintain maximum HPI flow except to prevent exceeding pressure-temperature limits and cooldown at less than 100°F/hr until the plant is in Mode 5.

Proposed Answer: C

Explanation (Optional):

Incorrect. Wrong action on HPI flow
Incorrect. Wrong cooldown rate
Correct. PTS concerns, must throttle HPI while minimizing cooldown rate
Incorrect. Wrong action on HPI flow and wrong rate

Technical Reference(s): Steam Tables (Attach if not previously provided)

DB-OP-02000

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-301-05S (As available)

Question Source: Bank # X

Modified Bank # _____ (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	E14 EK3.2	
	Importance Rating	3.0	

Knowledge of the reasons for the following responses as they apply to the (EOP Enclosures) Normal, abnormal and emergency operating procedures associated with (EOP Enclosures).

Proposed Question: Common 65

The following plant conditions exist:

A LOCA has occurred.
The reactor is tripped.
All equipment has operated as designed with the exception of HPI Pump 1, which is tripped.
RCS pressure is 1000 psig, lowering slowly.

Which one of the following describes the operation of HPI for these conditions?

HPI flow will be balanced to ensure adequate flow to the RCS.

HPI flow will be balanced to prevent HPI pump runout.

HPI flow will be balanced to satisfy HPI pump minimum flow requirements.

HPI flow will NOT be balanced because piggyback operation is providing adequate flow through the HPI lines.

Proposed Answer: A

Explanation (Optional):

Correct.
Incorrect. Runout not a concern, but large flows through a break are a concern
Incorrect. Minimum flow requirements are addressed by recirc valves
Incorrect. Piggyback flow provides greater flow rates on SBLOCA, but not reason for whether or not to balance HPI flow

Technical Reference(s): DB-OP-02000 (Attach if not previously

_____ provided)

EOP Basis Document

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-301-03S (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 X

55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	1	
	K/A #	G2.1.23	
	Importance Rating	3.9	

Ability to perform specific system and integrated plant procedures during all modes of plant operation.

Proposed Question: Common 66

Which one of the following lists the order that equipment is placed in service during a plant startup?

A.
1. MFPT to auto
2. S/G Rx demand to auto
3. Rx demand to auto
4. Rod control panel to auto

B.
1. Rod control panel to auto
2. Rx demand to auto
3. Feedwater loop demands to auto
4. MFPT to auto

C.
1. Rx demand to auto
2. Turbine control to ICS
3. MFPT to auto
4. Rod control to auto

D.
1. Rod control panel to auto
2. Feedwater loop demands to auto
3. Turbine control to ICS
4. Rx demand to auto

Proposed Answer: D

Explanation (Optional):

Incorrect.
Incorrect.
Incorrect.
Correct. Plant procedures direct the sequence listed in D.

Technical Reference(s): DB-OP-06901 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-204-03A (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

The examinee must be able to comprehend which equipment to place in service to start up the plant.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	1	
	K/A #	G2.1.24	
	Importance Rating	2.8	

Ability to obtain and interpret station electrical and mechanical drawings.

Proposed Question: Common 67

Components contained within a "Dashed Box" on an Operations Schematic _____.

A. are abandoned in place

B. are part of a plant modification that has been partially implemented

C. indicate changes made during the last drawing revision

D. are in an abnormal position due to a Temporary Modification

Proposed Answer: A

Explanation (Optional):

Correct.
Incorrect. Partial implementation usually explained in OS notes
Incorrect. Changes shown by circling components with revision number
Incorrect. Separate sheets are attached to OS sheets for TMs.

Technical Reference(s): EN-DP-01030 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: ONL-BQT-127-05K (As available)

Question Source: Bank # _____

Modified Bank # _____ (Note changes or attach parent)

	New	X
Question History:	Last NRC Exam	
Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	1	
	K/A #	G2.1.21	
	Importance Rating	3.1	

Ability to obtain and verify controlled procedure copy.

Proposed Question: Common 68

The Control Rod Drive Exercise Test is scheduled for the upcoming shift.

DB-OP-06402, CRD Operating Procedure, can be verified current by _____.

using the Curator controlled view library

Contacting Records Management

referring to Operations Directive PR-01, Operations Procedure Maintenance

using the Production Shared Services module in SAP

Proposed Answer: A

Explanation (Optional):

Correct.
Incorrect. Only old procedures
Incorrect. PR-01 provides guidance for altering procedures.
SAP is used for work management.

Technical Reference(s): NG-NA-00107 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: ONL-BQT-127-05K (As available)

Question Source:	Bank #	X	
	Modified Bank #		(Note changes or attach parent)
	New		
Question History:	Last NRC Exam	2004 Exam	
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	2	
	K/A #	G2.2.26	
	Importance Rating	2.5	

Knowledge of refueling administrative requirements.

Proposed Question: Common 69

e plant is in Mode 6.

efueling Operations are in progress.

ou have been assigned as the Bridge Spotter for fuel movements.

Which one of the following describes your responsibilities for this assignment?

Perform second check of the expected Bridge Mast position as determined by the Fuel Handling Director. You may have NO other responsibilities.

Perform independent verification of Bridge Mast position when directed by the Fuel Handling Director. You may have concurrent responsibilities such as Fuel Transfer Mechanism Operator.

Independently observe all Bridge and Crane Operations to ensure that operation is in accordance with Fuel Movement Sequence Sheets. You may have NO other responsibilities.

Coordinate with Bridge Operator and control room to ensure Bridge Index and Mast position are as required by the Fuel Movement Sequence Sheets. You may have concurrent responsibilities such as Fuel Transfer Mechanism Operator.

Proposed Answer: B

Explanation (Optional):

Incorrect. Concurrent Responsibilities are allowed. Not a second check but an independent observation.
Correct.
Incorrect. Concurrent Responsibilities are allowed. Fuel Movement Sequence Sheets are controlled by Fuel Handling Director.
Incorrect. Independent check is required. Spotter does not coordinate, and index is not coordinated with control room.

Technical Reference(s): DB-OP-00030 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-FHT-201-01K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	2	
	K/A #	G2.2.22	
	Importance Rating	3.4	

Knowledge of limiting conditions for operations and safety limits.

Proposed Question: Common 70

Which one of the following sets of parameters is kept within limits to prevent exceeding DNB limits?

Axial Power Imbalance, Quadrant Power Tilt, RCS Flow, Control Rod Position

Axial Power Imbalance, RCS Pressure, PZR level, Thermal Power

RCS temperature, Quadrant Power Tilt, PZR level, Control Rod Position

RCS temperature, RCS pressure, RCS flow, Thermal Power

Proposed Answer: D

Explanation (Optional):

Incorrect. Axial Power, Quadrant Power are control rod parameters
Incorrect. Pressurizer level is inventory
Incorrect.
Correct. TS Section 2

Technical Reference(s): Tech Spec 3.2.5 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-420-01K (As available)

Question Source:	Bank #	X	
	Modified Bank #		(Note changes or attach parent)
	New		
Question History:	Last NRC Exam		
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	3	
	K/A #	G2.3.11	
	Importance Rating	2.7	

Ability to control radiation releases.

Proposed Question: Common 71

The following plant conditions exist:

A clean liquid radwaste release is in progress from Clean Waste Monitor Tank 1 to the collection box.
Annunciator 7-1-B, CLEAN WASTE SYSTEM OUT RAD HI is in alarm.
The operator determines that RE 1770A, Clean Waste System Outlet Radiation Monitor, is above its high trip setpoint.

Which one of the following is the expected automatic response of the Clean Liquid Waste System?

The operating clean Waste Monitor Tank Transfer Pump trips and WC 1771, Clean Liquid Radwaste Discharge Isolation Valve, receives a close signal.

The operating Clean Waste Monitor Tank Transfer Pump trips and WC 1704, CWMT Outlet Flow Control Valve, receives a close signal.

The operating clean Waste Monitor Tank Transfer Pump continues to operate and WC 1771, Clean Liquid Radwaste Discharge Isolation Valve, receives a close signal.

The operating clean Waste Monitor Tank Transfer Pump continues to operate and WC 1704, CWMT Outlet Flow Control Valve, receives a close signal.

Proposed Answer: C

Explanation (Optional):

Incorrect. The CWMT pumps will not trip.
Incorrect. The CWMT pumps will not trip.
Correct.
Incorrect. Discharge will not align to the CWRT.

Technical Reference(s): OS-028A, Sheet 1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-521-07K (As available)

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

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41 X
55.43 ____

Comments:

The examinee must determine from the conditions the appropriate system response.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	3	
	K/A #	G2.3.4	
	Importance Rating	2.5	

Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.

Proposed Question: Common 72

Approval for an operator to exceed 1000 mR (TEDE) per year for work at Davis-Besse requires the approval of the _____.

Supervisor - Radiation Protection and the Manager - RP

Manager - DB Operations ONLY

Manager - DB Operations and the Manager - RP

Plant Manager ONLY

Proposed Answer: C

Explanation (Optional):

Incorrect.
Incorrect.
Correct.
Incorrect.

Technical Reference(s): NG-DB-00243 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-511-01K (As available)

Question Source:	Bank #	X	
	Modified Bank #		(Note changes or attach parent)
	New		
Question History:	Last NRC Exam		
Question Cognitive Level:	Memory or Fundamental Knowledge	X	
	Comprehension or Analysis		
10 CFR Part 55 Content:	55.41	X	
	55.43		

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	4	
	K/A #	G2.4.49	
	Importance Rating	4.0	

Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.

Proposed Question: Common 73

After attempting to trip the reactor in the control room, the NIs still read 50%.

Which one of the following describes the preferred order in which the Control Rod Drives should be manually deenergized, according to DB-OP-02000 Immediate Operator Actions?

Manually trip the three reactor trip breakers in the Low Voltage Switchgear rooms. Manually deenergize the CRD system by tripping BE-211 and BF-211. Momentarily deenergize 480 VAC Unit substations E-2 and F-2 simultaneously.

Manually trip the three reactor trip breakers in the Low Voltage Switchgear rooms. Momentarily deenergize 480 VAC Unit substations E-2 and F-2 simultaneously. Manually deenergize the CRD system by tripping BE-211 and BF-211.

Momentarily deenergize 480 VAC Unit substations E-2 and F-2 simultaneously. Manually trip the three reactor trip breakers in the Low Voltage Switchgear rooms. Manually deenergize the CRD system by tripping BE-211 and BF-211.

Momentarily deenergize 480 VAC Unit substations E-2 and F-2 simultaneously. Manually deenergize the CRD system by tripping BE-211 and BF-211. Manually trip the three reactor trip breakers in the Low Voltage Switchgear rooms.

Proposed Answer: C

Explanation (Optional):

Incorrect. E2 and F2 deenergized first.
Incorrect. E2 and F2 deenergized first.
Correct.
Incorrect. BE-211 and BF-211 are last in order.

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-302-05K (As available)

Question Source: Bank # X OLE-3031

Modified Bank # _____ (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X

Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 X

55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	4	
	K/A #	G2.4.21	
	Importance Rating	3.7	

Knowledge of the parameters and logic used to assess the status of safety functions including: 1 Reactivity control 2. Core cooling and heat removal 3. Reactor coolant system integrity 4. Containment conditions 5. Radioactivity release control.

Proposed Question: Common 74

Which one of the following parameters or plant conditions has the highest priority for action when performing DB-OP-02000, RPS, SFAS, SFRCS Trip, or SGTR?

A. Post-trip NI power rising

B. OTSG pressures rapidly lowering

C. Incore thermocouples indicate superheat

D. Reactor Building pressure rapidly rising

Proposed Answer: A

Explanation (Optional):

Correct. Rule 1 is reactivity control.
Incorrect. Will lead to PTS or overcooling (XHT). Lower priority.
Incorrect. Second priority behind reactivity control.
Incorrect. Will require actuation of SFAS but lower priority than reactivity and core cooling.

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-300-05K (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	X	
	55.43		

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	4	
	K/A #	G 2.4.19	
	Importance Rating	2.7	

Knowledge of EOP layout, symbols, and icons.

Proposed Question: Common 75

The hierarchy of performance of DB-OP-02000 actions is:

Immediate Actions
Actions for Symptoms
Specific Rules

Selections:

1, 3, 2

3, 1, 2

1, 2, 3,

3, 2, 1

Proposed Answer: A

Explanation (Optional):

Correct. Layout of EOPs requires performance of immediate actions, Rules, and response to other symptoms
Incorrect.
Incorrect.
Incorrect.

Technical Reference(s): DB-OP-02000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: OPS-GOP-300-05K (As available)

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content:
- 55.41 X
- 55.43 _____

Comments:

1.	C	26.	C	51.	C
				*52.	D
2.	A	27.	B	*52a.	A,B
3.	C	28.	A	53.	B
4.	C	29.	B	54.	B
5.	C	30.	C	55.	B
6.	B	31.	C	56.	C
7.	A	32.	C	57.	C
8.	A	33.	C	58.	A
9.	A	34.	D	59.	C
10.	C	35.	B	60.	B
11.	A	36.	A	61.	A
12.	C	37.	C	62.	C
13.	A	38.	B	63.	A
14.	D	39.	D	64.	C
15.	A	40.	C	65.	A
16.	C	41.	A	66.	D
17.	B	42.	A	67.	A
18.	C	43.	A	68.	A
19.	D	44.	D	69.	B
20.	A	45.	D	70.	D
21.	A	46.	C	71.	C

22.	D	47.	B	72.	C
23.	C	48.	A	73.	C
24.	C	49.	B	74.	A
25.	B	50.	B	75.	A

* Some applicant exams graded based on question 52a. vice question 52.