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INITIAL SUBMITTAL OF THE WRITTEN EXAMINATION
A

FOR THE DAVIS-BESSE INITIAL EXAMINATION - MARCH 2002

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	1	1
Group #	1	1
K/A#	000-005-AK1.03	
Importance Rating	3.2	3.6

Proposed Question: 1

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- b./d. Negative reactivity from xenon is added in the SDM calculation.
- c. A stuck control rod uses a different reactivity worth curve which lowers the reactivity worth of the control rods.

Technical Reference(s):

Tech. Spec. 3.1.1.1

DB-NE-06201

DB-NE-06202

Reference Attached: _____
(Attach if not
previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective (As available): OLC-BAT-256-03K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge <u>X</u>
	Comprehension or Analysis _____

10 CFR Part 55 Content:	55.41 <u>.5</u>
	55.43 _____

Comments (Why is it an upper level question):

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	1	1
Group #	1	1
K/A#	000-005-AK1.03	
Importance Rating	3.2	3.6

Proposed Question: 1

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

b./d. Negative reactivity from xenon is added in the SDM calculation.

c. A stuck control rod uses a different reactivity worth curve which lowers the reactivity worth of the control rods.

RO Exam

Technical Reference(s):

Tech. Spec. 3.1.1.1

DB-NE-06201

DB-NE-06202

Reference Attached: _____

(Attach if not
previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective (As available): OLC-BAT-256-03K

Question Source:

Bank # _____

Modified Bank # _____

New _____

(Note changes or attach parent)

X

Question History

Previous NRC Exam _____

Previous Quiz / Test _____

Question Cognitive Level:

Memory or Fundamental Knowledge X

Comprehension or Analysis _____

10 CFR Part 55 Content:

55.41 _____

.5

55.43 _____

Comments (Why is it an upper level question):

Question: 1

The reactor was at 100% power. A reactor trip occurred 30 minutes ago. The most reactive control rod failed to insert and has been determined to be immovable.

How is the shutdown margin (SDM) effected by the following reactivity effects?

- a. Xenon will increase the SDM; the stuck control rod will lower the SDM.
- b. Xenon has no effect on the SDM; the stuck control rod has no effect on the SDM.
- c. Xenon will increase the SDM; the stuck control rod has no effect on the SDM.
- d. Xenon has no effect on the SDM; the stuck control rod will lower the SDM.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-015/017-AK3.01	
	Importance Rating	2.5	3.1

Proposed Question: 2
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. RCP 2-2 is powered from A bus.
- b. A sheared shaft would cause a lower than normal amp reading.
- d. A loss of seal injection would not cause excessive amp reading.

Technical Reference(s): DB-OP-02515

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-115-01K

Question Source: OLC-6531	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
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Question History	Previous NRC Exam Previous Quiz / Test	_____ _____
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Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u> X </u>
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10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____
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Comments (Why is it an upper level question):
Examinee must recognize amps are high and apply to the cause of the alarm.

ORIGINAL

Question: 2

- The plant is operating at 100%.
- Chemistry is conducting a chemical shock procedure on the RCS System in preparation for an outage.

The following conditions are observed:

- Annunciator alarm 6-5-A, MONITOR SYSTEM TRBL, is received.
- RCP 2-2 indicates 450 amps.
- RCP 1-1 indicated 260 amps.

Which one of the following statements would explain the listed conditions?

- a. RCP 2-2 is undergoing a flow oscillation due to the RCS chemistry excursion.
- b. RCP 1-1 has sheared shaft.
- c. RCP 2-2 is experiencing mechanical friction.
- d. RCP 1-1 has experienced a seal failure.

Answer:

c.

Question: 2

The following plant conditions exist:

- The plant is operating at 100%.
- Annunciator Alarm 6-5-A, MONITOR SYSTEM TRBL, is received.
- RCP 2-2 indicates 450 amps.

Which one of the following statements would explain the listed conditions?

- a. B Bus voltage is low.
- b. RCP 2-2 has a sheared shaft.
- c. RCP 2-2 upper motor bearing is failing.
- d. MU 66B has failed closed.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	BW/E09-EK3.4	
	Importance Rating	3.8	3.8
Proposed Question: 3 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Two SROs required to deviate from procedure. b./ d. Do not have to wait if directed by Unit Supervisor with agreement from the Shift Manager or Shift Engineer.			
Technical Reference(s): DB-OP-01003		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-300-06K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question): N/A			

Question: 3

The reactor and all four RCPs were tripped from 100% power due to a loss of cooling water. Both AFPTs tripped on overspeed. The secondary side Reactor Operator:

- a. CAN start the MDFP immediately, if he/she announces his/her intended action in accordance with Specific Rule 4, SG Level Setpoints.
- b. CAN NOT start the MDFP until Step 4.8, Check for SFRCS Actuation, is reached in DB-OP-02000.
- c. CAN start the MDFP immediately with permission from the Unit Supervisor and the Shift Manager.
- d. CAN NOT start the MDFP until directed to use Attachment 1, Guidelines for Restoring Feedwater.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-024-AK3.01	
	Importance Rating	4.1	4.4
Proposed Question: 4			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): <ul style="list-style-type: none"> a. This scenario is not a loss of boron. b. Specific Rule 1 actions are only required if count rate is increasing. c. E2 and F2 are de-energized on an ATWS, not stuck control rods. 			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-303-05K			
Question Source: OLC-4416	Bank # Modified Bank # New	<u> X </u> <u> </u> <u> </u>	(Note changes or attach parent)
Question History 1995 Quiz	Previous NRC Exam Previous Quiz / Test	<u> </u> <u> X </u>	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> </u> <u> X </u>	
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 <u> </u>		
Comments (Why is it an upper level question): Question requires analyzing condition and applying the correct actions to ensure shutdown margin is maintained.			

ORIGINAL

Question: 4

Immediately following a reactor trip, the following conditions exist:

- CRD trip breakers open
- NI power is 1×10^{-6} amps
- Control Rod 3-1 100% withdrawn
- Control Rod 3-3 100% withdrawn

Which one of the following identifies the procedure flowpath for this situation?

- a. Immediately enter DB-OP-02510, Loss of Reactor Coolant System Boron, and initiate immediate boration per Step 4.1.2.
- b. Immediately enter DB-OP-02516, CRD Malfunctions, and attempt to insert Safety Group 3.
- c. Enter DB-OP-02000, RPS, SFAS, SFRCS, or SG Tube Rupture, and at Step 3.2, Reactivity Control, momentarily de-energize E2 and F2.
- d. Enter DB-OP-02000, RPS, SFAS, SFRCS, or SG Tube Rupture; and at Step 4.1 commence boration to 2100 ppmB.

Answer:

d.

Question: 4

Immediately following a reactor trip, the following conditions exist:

- CRD trip breakers open
- NI power is 1×10^{-6} amps and lowering
- Control Rod 3-1 100% withdrawn
- Control Rod 3-3 100% withdrawn

Which one of the following identifies the correct action for this situation in accordance with DB-OP-02000, RPS, SFAS, SFRCS, or SG Tube Rupture?

- a. Route to DB-OP-02510, Loss of Reactor Coolant System Boron, at the completion of the Supplementary Actions.
- b. Initiate emergency boration until adequate shutdown margin is restored in accordance with Specific Rule 1, Reactivity Control.
- c. Momentarily de-energize E2 and F2 in accordance with the Immediate Actions.
- d. Commence boration to achieve acceptable shutdown margin in accordance with the Supplementary Actions.

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-026-AK3.04	
	Importance Rating	3.5	3.7

Proposed Question: 5
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- b. Seal injection is not required because RCPs are off.
- c. Adequate SDM exists without adding additional boron.
- d. HPI and LPI pumps can be started and run for up to one hour without cooling water if needed.

Technical Reference(s): DB-OP-02523 Abnormal Procedure Discussion Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-123-02K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u>
	Comprehension or Analysis _____

10 CFR Part 55 Content:	55.41 <u> .10 </u>
	55.43 _____

Comments (Why is it an upper level question):

Question: 5

Following a loss of all CCW pumps, a makeup pump can be operated for up to one hour without cooling water in order to:

- a. allow post-trip pressurizer level recovery.
- b. provide seal injection since CCW is lost to the RCPs.
- c. ensure a boron injection flowpath is available to maintain shutdown margin $\geq 1\% \Delta K/K$ until xenon can add adequate negative reactivity.
- d. prevent the need to start HPI pumps and LPI pumps since CCW essential headers are NOT available.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	BW/E05-EA1.1	
	Importance Rating	4.2	4.2
Proposed Question: 6			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./c. Cannot use both injection lines with suction aligned to the MU tank. b. MU flow limited to < 250 gpm unless piggybacked from LPI. Procedure does not piggyback for an overcooling event.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-106-14K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .3 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 6

During an overcooling event, pressurizer level lowers to four inches. RCS inventory should be maintained by running both makeup pumps with suction from the:

- a. makeup tank at maximum flow through both makeup injection lines.
- b. BWST at maximum flow through both makeup injection lines.
- c. makeup tank with flow limited to 250 gpm through each makeup injection line.
- d. BWST with flow limited to 250 gpm through each makeup injection line.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-051-GEN 2.4.8	
	Importance Rating	3.0	3.7
Proposed Question: 7			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect):			
a./c. Immediate actions are performed first on a reactor trip.			
b. Specific Rule 6 for loss of D1 bus is performed prior to routing to Supplementary Actions.			
Technical Reference(s): DB-OP-01003		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-300-05K			
Question Source:	Bank # Modified Bank # New	_____ _____ <u>X</u>	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u>X</u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u>.10</u> _____	
Comments (Why is it an upper level question):			

Question: 7

The following plant conditions exist:

- A reactor startup is in progress.
- An electrical problem has caused a loss of D2 Bus and D1 Bus.
- The auxiliary boiler has tripped and condenser pressure is increasing.
- The MDFP has tripped.

Place the following in the correct hierarchy of performance:

1. DB-OP-02518, High Condenser Pressure
 2. DB-OP-02000, Immediate Actions
 3. DB-OP-02000, Supplementary Actions
 4. DB-OP-02000, Specific Rules
 5. DB-OP-02521, Loss of AC Bus Power Sources
-
- a. 5, 2, 3, 4, 1
 - b. 2, 3, 4, 1, 5
 - c. 5, 1, 2, 4, 3
 - d. 2, 4, 3, 1, 5

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-057-AA2.11	
	Importance Rating	2.9	3.0

Proposed Question: 8
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
a./b./d. Control power to MFPT 2 is supplied from Panel YBU. Loss of Y2, Y4, or YBR will not effect MFPT 2 speed.

Technical Reference(s): DB-OP-02542
Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-141-08A

Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)
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Question History	Previous NRC Exam _____ Previous Quiz / Test _____
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Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____
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10 CFR Part 55 Content:	55.41 <u> .4 </u> 55.43 _____
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Comments (Why is it an upper level question):

Question: 8

A loss of _____ will cause MFPT 2 to be driven to zero speed.

- a. Essential Panel Y2
- b. Essential Panel Y4
- c. Panel YBU
- d. Non-Essential Panel YBR

Answer:

- c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	BW/A06-GEN 2.4.5	
	Importance Rating	2.9	3.6
Proposed Question: 9 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./c./d. Control Room Evacuation procedure and the Fire Procedure do not take priority over DB-OP-02000 IAW DB-OP-01003.			
Technical Reference(s): DB-OP-01003		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-119-05K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question): 			

Question: 9

Direction provided in DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture, takes priority over abnormal procedures with the exception of:

- a. DB-OP-02508, Control Room Evacuation and DB-OP-02519, Serious Control Room Fire.
- b. DB-OP-02501, Serious Station Fire and DB-OP-02519, Serious Control Room Fire.
- c. DB-OP-02508, Control Room Evacuation and DB-OP-02529, Fire Procedure.
- d. DB-OP-02501, Serious Station Fire and DB-OP-02529, Fire Procedure.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-074-EK2.06	
	Importance Rating	3.5	3.6
Proposed Question: 10			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./b. DB-OP-02000 directs cooldown at the maximum attainable rate. c. DB-OP-02000 directs cooldown the RCS until LPI flow is established.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-304-05K			
Question Source:	Bank # Modified Bank # New	_____ _____ <u>X</u>	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u>X</u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u>.8</u> _____	
Comments (Why is it an upper level question):			

Question: 10

The following plant conditions exist:

- The plant was at 100% power.
- Adequate subcooling margin has been lost due to a small break loss of coolant accident.
- There is NO makeup OR HPI flow available.

Which one of the following is the correct response to these conditions?

Fully open the AVVs to cooldown the RCS at:

- a. 100°F/hour until CFTs begin to empty.
- b. 100°F/hour until LPI flow has been established.
- c. the maximum attainable rate until CFTs begin to empty.
- d. the maximum attainable rate until LPI flow has been established.

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	BW/E03-EA2.02	
	Importance Rating	3.5	4.0
Proposed Question: 11 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. SG tube stresses are caused by temperature differences between the SG tubes and shells. c. Heat input from the RCPs is only a concern during a lack of heat transfer event. d. RCPs would not cavitate until a loss of all RCS inventory in the RCS loops had occurred.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-304-05K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .3 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 11

Which one of the following explains why the reactor coolant pumps are tripped following a loss of adequate subcooling margin?

- a. Prevent possible uncovering the core.
- b. Reduce tension stresses on the steam generator tubes.
- c. Reduce the heat input into the RCS.
- d. Prevent damage to the RCPs due to cavitation.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-076-AK2.01	
	Importance Rating	2.6	3.0

Proposed Question: 12
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- b. CTMT RAD HI is an indication of an RCS leak.
- c. SFAS CTMT RAD HI is an indication of an RCS leak.
- d. VAC SYS DISCH RAD HI is an indication of an SG tube leak.

Technical Reference(s): DB-OP-02535

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-135-01K

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> X </u>
	Comprehension or Analysis	_____

10 CFR Part 55 Content:	55.41	<u> .11 </u>
	55.43	_____

Comments (Why is it an upper level question):

Question: 12

Which one of the following annunciators, if alarming, is a symptom of high activity in the Reactor Coolant System and requires entry into DB-OP-02535, High Activity in the Reactor Coolant System?

- a. LETDOWN RAD HI (2-1-A)
- b. CTMT RAD HI (4-1-A)
- c. SFAS CTMT RAD CH TRIP (5-1-A)
- d. VAC SYS DISCH RAD HI (9-4-A)

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-055-EA1.02	
	Importance Rating	4.3	4.4

Proposed Question: 13
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
a./b./d. These electrical trips are bypassed when the SBODG is manually started from the Control Room.

Technical Reference(s): DB-OP-06334
Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-406-10K

Question Source: ORQ-0953	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
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Question History 1996 Exam	Previous NRC Exam Previous Quiz / Test	_____ <u> X </u>
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Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>
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10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____
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Comments (Why is it an upper level question):
Must recognize that starting the SBODG from the Control Room bypasses several electrical trips.

Question: 13

The Station Blackout Diesel Generator (SBODG) has been started from the Control Room and loaded on D2 Bus following a station blackout. The SBODG then automatically trips.

Determine which one of the following caused the trip.

- a. Negative phase sequence
- b. Reverse power
- c. Transformer DF8 overcurrent
- d. Ground overcurrent

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	000-062-AA2.06	
	Importance Rating	2.8	3.1
Proposed Question: 14			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Credit is not taken for the MDFP in safety analysis for a seismic event. b. Curbs on the entrances to the AFP rooms prevent flooding. d. Curbs on the entrances to the HVSG rooms prevent flooding.			
Technical Reference(s): DB-OP-02511		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-111-02K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .4 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 14

The plant is at 100% power. A seismic event occurs causing a Service Water System break in the TPCW header.

Action is required within three hours to isolate the service water break to prevent:

- a. flooding of the MDFP.
- b. flooding of the AFPs.
- c. loss of ultimate heat sink inventory.
- d. loss of high voltage switchgear buses.

Answer:

- c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	000-038-EA1.27	
	Importance Rating	3.9	3.9

Proposed Question: 15
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. 1025 signal cannot be read on the TBV controllers.
- b. 995 signal is only present when the reactor is tripped.
- d. 870 signal is only present when < 92 MWE.

Technical Reference(s): DB-OP-06401

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-515-04K

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

Question History Previous NRC Exam _____
Previous Quiz / Test _____

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

10 CFR Part 55 Content: 55.41 .4
55.43 _____

Comments (Why is it an upper level question):

Question: 15

The following plant conditions exist:

- A plant shutdown is in progress due to an SG tube rupture.
- Steam flow is being transferred from the turbine to the Turbine Bypass Valves (TBVs).
- Steam generators are on low level levels.
- Megawatt demand is 220 MWE.

The measured variable display for the TBVs shows the pointer below the carat. This indicates that the TBVs are set to control header pressure at the _____ psig setpoint.

- a. 1025
- b. 995
- c. 920
- d. 870

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A#	000-059-AA2.04	
	Importance Rating	3.2	3.5
Proposed Question: 16 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./c./d. Shall not drain contaminated water to circ water, the settling basin, or Training Building Pond.			
Technical Reference(s): DB-OP-02531		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-131-11K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .12 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 16

The following plant conditions exist:

- A plant shutdown and cooldown is in progress due to an 80 gallon per minute steam generator tube leak.
- The Technical Support Center has determined the need to drain the condenser hotwell.

The hotwell drains will be routed to _____ in order to reduce hotwell level.

- a. the Circulating Water System
- b. Condensate Polishing Demin Holdup Tanks
- c. any of the settling basins
- d. Training Building Pond

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	BW/A01-GEN 2.1.30	
	Importance Rating	3.9	3.4

Proposed Question: 17
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. Output breakers will not open on successful SCW runback.
- b. Low load limit is not in effect when in track.
- d. FW and reactor will be matched during the runback.

Technical Reference(s): DB-OP-02016

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-512-02K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u>X</u>

10 CFR Part 55 Content:	55.41 <u>.7</u>
	55.43 _____

Comments (Why is it an upper level question):

Must recognize the turbine transfers to manual on an SCW runback, and the turbine in manual places the ICS in track.

Question: 17

The following plant conditions exist:

- The reactor was initially at 40% power.
- A loss of both stator cooling water pumps caused a plant runback.

Which one of the following actions would have to be taken to clear annunciator 14-6-D, ICS IN TRACK?

- a. Reclose the turbine generator output breakers ACB 34560 and ACB 34561.
- b. Adjust reactor power to clear the ULD low load limit.
- c. Transfer turbine control to ICS AUTOMATIC.
- d. Adjust feedwater flow to match reactor power.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	000-054-AK3.02	
	Importance Rating	3.4	3.7
Proposed Question: 18			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect):			
a. If RFR is abnormal, then SFRCS is manually actuated.			
c./d. MDFP is only started if the AFPs are unavailable.			
Technical Reference(s): DB-OP-02000 Technical Bases			
Reference Attached: _____ (Attach if not previously provided)			
Proposed references to be provided to applicants during examination:			
None			
Learning Objective (As available): OPS-GOP-303-05K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 18

The following plant conditions exist:

- The reactor was initially at 50% power with MFPT 1 out of service.
- Following an MFPT 2 control system failure, the reactor tripped on high RCS pressure.
- AFW started on low SG levels.
- MFPT 2 is running on the low speed stop.

What action should be taken NEXT based on these conditions?

- a. Place MFPT 2 speed in manual and control steam generators on low level limits to balance steam loads.
- b. Initiate AFW flow and isolation of both SGs to replace the malfunctioning MFW System.
- c. Start the MDFP in the AFW mode and shutdown the AFPTs in preparation for trip recovery.
- d. Start the MDFP in the MFW mode and shut down the AFPTs to conserve water in the condensate storage tanks.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	BW/E04-EK1.3	
	Importance Rating	4.0	4.0
Proposed Question: 19			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. DB-OP-02000 Immediate Actions are completed prior to symptom checks. c./d. Feed and bleed cooling is required immediately if only one MU pump is available.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-305-01K			
Question Source: ORQ-0098	Bank # Modified Bank # New	_____ <u>X</u> _____	(Note changes or attach parent)
Question History 1998 Exam	Previous NRC Exam Previous Quiz / Test	_____ <u>X</u> _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u>X</u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u>.10</u> _____	
Comments (Why is it an upper level question):			

ORIGINAL

Question: 19

The reactor has tripped.

Both MFPTs AND both AFW pumps are tripped.

MUP 1-2 is disassembled for maintenance.

MU/HPI cooling should be initiated _____.

- a. immediately.
- b. when the "check for lack of heat transfer" step is reached in the procedure.
- c. when Tavg exceeds 600°F if feedwater is NOT restored.
- d. when Thot exceeds 600°F even if feedwater is restored.

Answer:

- a.

Question: 19

The following plant conditions exist:

- The reactor has tripped due to a loss of MFW.
- Both AFW pumps tripped on overspeed.
- The standby makeup pump failed to start.
- MDFP is out of service for maintenance.

MU/HPI cooling should be initiated _____.

- a. immediately upon entry in DB-OP-02000
- b. after completion of the Immediate Actions in DB-OP-02000
- c. when Step 4.10, Check for Lack of Heat Transfer, is reached in the Supplementary Actions of DB-OP-02000
- d. when the first Thot indication reaches 600°F

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	000-058-GEN 2.1.29	
	Importance Rating	3.4	3.3
Proposed Question: 20			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a/b. Loss of D1P/DAP does not affect CCW to the CRDMs or letdown coolers. c. CCW pump will continue to run if control power is lost.			
Technical Reference(s): DB-OP-02537		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-137-04K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 20

The reactor was at 100% when a loss of D1P and DAP occurred.

DB-OP-02537, Loss of D1P and DAP, directs the verification of CCW containment isolation OPEN:

- a. to verify cooling water is available to the CRDMs.
- b. to verify cooling water is available to both letdown coolers.
- c. because CCW Pump 1 has lost control power.
- d. because seal injection is lost to two RCPs.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	000-060-AA1.02	
	Importance Rating	2.9	3.1

Proposed Question: 21
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
b/c. SI filters are in the FH area
d. Main station exhaust fans do not auto stop on high radiation

Technical Reference(s): DB-OP-06412
Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-109-07K

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> X </u>
	Comprehension or Analysis	_____

10 CFR Part 55 Content:	55.41	<u> .11 </u>
	55.43	_____

Comments (Why is it an upper level question):

Question: 21

The plant is at 100% power.

- Maintenance is in progress on Seal Injection Filter 1.
- A leaking Seal Injection Filter isolation valve has led to high airborne radioactivity.

Which one of the following ventilation systems will automatically shutdown?

- a. The Fuel Handling Ventilation System
- b. The Radwaste Area Ventilation System
- c. The Containment Purge Ventilation System
- d. The Main Station Exhaust System

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A#	000-001-AA2.04	
	Importance Rating	4.2	4.3
Proposed Question: 22			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Lowering feedwater demand will create a mismatch between feedwater flow and reactor power. b. Lowering MWE will create a mismatch between SG heat removal and reactor power. d. SG/Rx demand will only reduce feedwater in this scenario.			
Technical Reference(s): DB-OP-02516		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-116-02K			
Question Source: OLC-4488	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 1998 NRC Exam	Previous NRC Exam Previous Quiz / Test	<u> X </u> _____	
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .6 </u> 55.43 _____		
Comments (Why is it an upper level question): Must diagnose the failure from the information given and determine the correct action to mitigate.			

Question: 22

The following plant conditions exist:

- Tave is 584°F and rising.
- Main feedwater flow is rising.
- Reactor power is 92% and rising.
- Neutron error is 2% in the "IN" direction.
- Rod index is 293% and rods are moving out.
- RCS pressure is 2170 psig and rising.
- Diamond panel OUT COMMAND red light is lit.
- Turbine header pressure is 870 psig and stable.
- Generator output is 880 MWE and rising.

The operator should:

- a. put Feedwater Loop Demand HAND/AUTO stations in HAND and reduce feedwater flow.
- b. put the turbine in MANUAL and reduce megawatts.
- c. depress and hold the ROD STOP button.
- d. place the SG/RX Demand HAND/AUTO station in HAND and reduce the demand.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	BW/E02-EK1.1	
	Importance Rating	3.6	3.6

Proposed Question: 23
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- The power supply light being lit indicates power is available.
- Normal post-trip SG level is 40 inches.
- Instrument air drops post-trip; minimum pressure is 75 psig.

Technical Reference(s): DB-OP-02000

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-303-02K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u>X</u>

10 CFR Part 55 Content:	55.41 <u>.10</u>
	55.43 _____

Comments (Why is it an upper level question):
Must analyze various parameters and determine if an SFRCS actuation is required.

Question: 23

Following a reactor trip, which one of the following would require the initiation of AFW flow and isolation of both steam generators?

- a. NNI X AC power supply indicating light is lit.
- b. Both SG levels indicate 40 inches.
- c. Instrument air header pressure indicates 91 psig.
- d. ICS HAND/AUTO station indicating lights are off.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	BW/A04-GEN 2.4.7	
	Importance Rating	3.1	3.8

Proposed Question: 24
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
a./c. Turbine Trip AB directs tripping the reactor.
b. Turbine Trip AB directs manually initiating SFRCS.

Technical Reference(s): DB-OP-02500
Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-101-06K

Question Source: OLC-4909	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 1999 NRC Exam	Previous NRC Exam Previous Quiz / Test	<u> X </u> _____	

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u> X </u>

10 CFR Part 55 Content:	55.41 <u> .10 </u>
	55.43 _____

Comments (Why is it an upper level question):
Must analyze data on plant conditions, determine appropriate AB actions and comprehend resulting status of plant.

Question: 24

The following sequence of events has occurred:

- The main turbine tripped at 35% reactor power.
- Main Stop Valve 1 failed to close.
- Main Control Valve 4 failed to close.

After completion of the appropriate steps of DB-OP-02500, Turbine Trip, the plant status will be:

- a. reactor power at 28%, steam generator level control on low level limits, and steam generator pressure control on TBVs.
- b. reactor power at 0%, steam generator level control on low level limits, and steam generator pressure control on the MSSVs.
- c. reactor power at 28%, steam generator level control on auxiliary feedwater, and steam generator pressure control on TBVs.
- d. reactor power at 0%, steam generator level control on auxiliary feedwater, and steam generator pressure control on the MSSVs.

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	000-009-EK2.03	
	Importance Rating	3.0	3.3

Proposed Question: 25
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. Tsat for 125 psig is 353°F.
- b. Tsat for 210 psig is 392°F.
- d. Tsat for 400 psig is 448°F.

Technical Reference(s): DB-OP-02000

Reference Attached: _____
(Attach if not previously provided)

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

Learning Objective (As available): OPS-GOP-308-04K

Question Source:	Bank #	<u> X </u>	(Note changes or attach parent)
OLC-4062	Modified Bank #	_____	
	New	_____	

Question History	Previous NRC Exam	<u> X </u>
1997 NRC Exam	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u> X </u>

10 CFR Part 55 Content:	55.41	<u> .14 </u>
	55.43	_____

Comments (Why is it an upper level question):

Must use steam tables to determine correct saturation pressure for a 100°F temperature change.

Question: 25

A plant transient is in progress. Plant conditions are as follows:

- All RCPs are tripped.
- Incore thermocouples indicate 900°F.
- RCS pressure is 200 psig.
- Both SGs are unisolated and pressures are approximately 815 psig.

In accordance with DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture, Step 9.13, the operator is directed to induce heat transfer from the RCS to the SGs by rapidly lowering BOTH SG pressures to achieve a 100°F step decrease in secondary Tsat.

Which one of the following SG pressures corresponds to this new Tsat condition?

- a. 125 psig
- b. 210 psig
- c. 300 psig
- d. 400 psig

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	I
	K/A#	000-011-EK2.02	
	Importance Rating	2.6	2.7
Proposed Question: 26 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. Closing the minimum recirc valves will have a minimal effect on discharge head. c. Minimum recirc is 35 gpm and will have a minimal effect on total flow. d. Minimum recirc valves are not containment isolation valves.			
Technical Reference(s): DB-OP-06011		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-309-04K			
Question Source: OLC-4579	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 1996 NRC Exam	Previous NRC Exam Previous Quiz / Test	<u> X </u> _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u> 3 </u> _____	
Comments (Why is it an upper level question):			

Question: 26

The following plant conditions exist:

- A LOCA is in progress.
- BWST level is 8 feet and decreasing.
- HPI is running and required to be in operation by DB-OP-02000, RPS, SFAS, SFRCS Trip or SG Rupture.

Which one of the following is the reason for closing the HPI recirc valves (HP-32 and HP-31) when placing HPI into the piggyback mode?

- a. Prevent depletion of the containment emergency sump.
- b. Increase the discharge head of the HPI pumps.
- c. Increase the HPI injection flow rate.
- d. Ensure containment integrity is maintained.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	000-022-AK3.07	
	Importance Rating	3.0	3.2

Proposed Question: 27
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- This action is only required if MUPs are not piggybacked from LPI.
- MUP 2 is only injecting through the normal makeup line.
- Minimum recirc valves are closed to increase injection flow.

Technical Reference(s): DB-OP-02000

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-301-03S

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>X</u>

10 CFR Part 55 Content:	55.41	<u>.3</u>
	55.43	_____

Comments (Why is it an upper level question):

Must recognize the MU System lineup for MU/HPI cooling and determine MU injection lines are separated.

Question: 27

The following plant conditions exist:

- A loss of all main and auxiliary feedwater has occurred.
- AFTER makeup/HPI cooling has been initiated in accordance with DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture, Makeup Pump 1 trips due to an electrical fault.

Which one of the following is the correct response to the loss of MU Pump 1?

- a. Throttle MU 32 and MU 6419 to limit injection flow to 250 gpm per makeup line.
- b. Close MU 6421 to prevent runout of Makeup Pump 2.
- c. Open MU 6406 to ensure minimum recirc flow is available for Makeup Pump 2.
- d. No action is required since MU 6409 is closed, separating the makeup injection lines.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	000-025-AK1.01	
	Importance Rating	3.9	4.3
Proposed Question: 28 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. MU pumps provide boron injection flowpath in Mode 4. b. Both RCS loops are operable in Mode 4. d. Only one ECCS loop is required to be operable in Mode 4.			
Technical Reference(s): Tech. Specs. 3/4.4.2		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-434-01K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .8 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine the plant is in Mode 4 and apply correct Tech. Spec.			

Question: 28

The following plant conditions exist:

- Plant heatup is in progress.
- RCS temperature is 210°F.
- RCS pressure is 250 psig.
- Loop 2 RCPs are running.
- DH Train 2 is aligned in the decay heat mode.
- DH Train 1 is aligned in the LPI mode.
- A leak develops in the Decay Heat System requiring DH Pump 2 to be stopped and DH 12 DH NORMAL SUCTION ISOLATION, to be closed.

Which one of the following Tech. Specs. should be entered?

- a. 3.1.2.2 for an inoperable boron injection flowpath.
- b. 3.4.1.2 since less than two coolant loops are operable.
- c. 3.4.2 for an inoperable DHR relief valve, DH 4849.
- d. 3.5.3 since only one ECCS subsystem is operable.

Answer:

- c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	000-032-AA2.06	
	Importance Rating	3.9	4.1

Proposed Question: 29
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- NI 1 is de-energized.
- NR NI 3-1 is not on scale.
- Annunciator comes in when SRNIs are initially energized.

Technical Reference(s): DB-OP-02505

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

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

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>X</u>

10 CFR Part 55 Content:	55.41	<u>.2</u>
	55.43	_____

Comments (Why is it an upper level question):
Must determine what NIs are available based on time after trip and RPS channels de-energized.

Question: 29

The following plant conditions exist:

- The plant is at 50% power.
- RPS Channel 2 was de-energized for maintenance.
- A loss of Y1 led to a loss of second RPS channel and a reactor trip.

Which one of the following Nuclear Instruments (NI) can be used to monitor reactor power 15 minutes after the reactor trip?

- a. NI 1, SOURCE RANGE LOG COUNT RATE
- b. NR NI 3-1, INTERMEDIATE RANGE Recorder
- c. Annunciator 5-5-E, SUR ROD WITHDRAW INHIBIT
- d. NI 5875A, SOURCE RANGE Gamma-Metrics Channel 2

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	3	3
	K/A#	000-056-AK1.03	
	Importance Rating	3.1	3.4

Proposed Question: 30
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
Saturation temperature for 1670 psig is 612°F.
b. Since SCM is less than 20°F, incore temperature is used to determine SCM.
c./d. Tave or Tcold are not used to determine SCM.

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

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

Learning Objective (As available): OPS-GOP-304-01K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u>X</u>

10 CFR Part 55 Content:	55.41 <u>.14</u>
	55.43 _____

Comments (Why is it an upper level question):
Must determine which temperature instrument to use and calculate subcooling margin.

Question: 30

The following plant conditions exist:

- The plant was at 100% power.
- A loss of off-site power occurred 10 minutes ago.
 - RCS pressure is 1670 psig.
 - Average incore temperature is 600°F.
 - RCS hotleg temperature is 594°F.
 - RCS average temperature is 572°F.
 - RCS coldleg temperature is 550°F.

Which one of the following is the correct subcooling margin for the above plant conditions?

- a. 12°F.
- b. 18°F.
- c. 40°F.
- d. 62°F.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	3	3
	K/A#	BW/E13-GEN 2.4.39	
	Importance Rating	3.3	3.1
Proposed Question: 31			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect):			
a. Sandusky County is not on the 4-way ringdown. b. Carroll Township and Erie County are not on the 4-way ringdown. d. Sandusky County, Carroll Township, and Erie County are not on the 4-way ringdown.			
Technical Reference(s): RA-EP-02010		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-603-05K			
Question Source:	Bank # Modified Bank # New	_____ _____ <u>X</u>	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u>X</u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u>.10</u> _____	
Comments (Why is it an upper level question):			

Question: 31

Due to an RCS leak, the Shift Manager directs the spare Reactor Operator to make Emergency Plan notifications using the 4-Way Ringdown Phone.

Which one of the following combinations identifies who will be notified?

1. Sandusky County Sheriff
 2. Ohio Highway Patrol
 3. Lucas County Sheriff
 4. Carroll Township Police
 5. Ottawa County Sheriff
 6. Erie County Sheriff
-
- a. 1, 3, and 5
 - b. 2, 4, and 6
 - c. 2, 3, and 5
 - d. 1, 4, and 6

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	3	3
	K/A#	BW/A07-AA1.2	
	Importance Rating	2.8	3.0
Proposed Question: 32 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. EDG rooms, AFP rooms, and BWST tunnel do not contain SSD equipment. c. EDG rooms and BWST tunnel do not contain SSD equipment. d. AFP rooms do not contain SSD equipment.			
Technical Reference(s): RA-EP-02880		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-605-16K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question): 			

Question: 32

Which of the following are the three areas that affect Safe Shutdown Systems that are covered by RA-EP-02880, Internal Flooding?

1. Service Water Pump Room
 2. Emergency Diesel Generator Rooms
 3. Component Cooling Water Pumps Room
 4. Auxiliary Feedwater Pump Rooms
 5. Emergency Core Cooling Systems Room
 6. Borated Water Storage Tank Pipe Tunnel
-
- a. 1, 3, and 5
 - b. 2, 4, and 6
 - c. 1, 2, and 6
 - d. 3, 4, and 5

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	001-K5.56	
	Importance Rating	4.2	4.6
Proposed Question: 33			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. None of these are used to monitor DNBR. b. Quadrant power tilt is not used to monitor DNBR. c. Axial power imbalance and reg. rod position are not used to monitor DNBR.			
Technical Reference(s): Tech. Spec. 3.2.5		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-432-02A			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .5 </u> 55.43 <u> .2 </u>		
Comments (Why is it an upper level question):			

Question: 33

Which of the following are monitored to ensure the minimum DNBR is maintained in accordance with Tech. Spec. 3.2.5?

1. Axial Power Imbalance
 2. Quadrant Power Tilt
 3. Regulating Rod Groups Insertion Limits
 4. RCS Hot Leg Temperature
 5. RCS Pressure
 6. RCS Flow
-
- a. 1, 2, and 3
 - b. 2, 4, and 5
 - c. 1, 3, and 6
 - d. 4, 5, and 6

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	001-A4.15	
	Importance Rating	3.1	3.1

Proposed Question: 34
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
a./c. Rods will insert when Tave is reduced.
b. Tave reduction adds positive reactivity.

Technical Reference(s): DB-OP-06902
Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OLC-BAT-229-01K

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>X</u>

10 CFR Part 55 Content:	55.41	<u>.1</u>
	55.43	<u>.6</u>

Comments (Why is it an upper level question):
Must determine the reactivity added and how Group 7 is affected.

Question: 34

The following plant conditions exist:

- The plant is at 100% at the end of core life.
- Tave is being reduced from 582°F to 576°F in accordance with DB-OP-06902, Power Operations.

In response to the Tave reduction, Group 7 rods will automatically:

- a. withdraw due to the addition of positive reactivity.
- b. insert due to the addition of negative reactivity.
- c. withdraw due to the addition of negative reactivity.
- d. insert due to the addition of positive reactivity.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	003-K4.11	
	Importance Rating	3.0	3.0
Proposed Question: 35			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. SR temperature high gives alarm only. c. SR flow low gives alarm only d. Seal cooler CCW flow low is a starting interlock.			
Technical Reference(s): DB-OP-02515 DB-OP-02523		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-304-07K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 35

CC 4100, Seal Cooling CCW Return from RCP 1-1, will automatically close if RCP 1-1:

- a. seal cooler CCW pressure is HIGH.
- b. seal return temperature is HIGH.
- c. seal return flow is LOW.
- d. seal cooler CCW flow is LOW.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	004-K6.07	
	Importance Rating	2.7	2.8
Proposed Question: 36 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. MU 32 would close due to pressurizer level increasing. b. MU 19 would not be affected. d. RCS pressure would not reach the PORV setpoint.			
Technical Reference(s): DB-OP-06006		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-106-03K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> 3 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine how a loss of letdown affects the RCS.			

Question: 36

The following plant conditions exist:

- The plant is at 100% power.
- All systems in a normal lineup.
- A leak in Letdown Cooler 1 has caused MU 2B, Letdown Isolation Valve, to automatically close.

Which one of the following automatic actions would occur as a result of MU 2B closing?

- a. MU 32, Pressurizer Level Control, would continuously cycle open and closed.
- b. MU 19, RCP Seal Injection Flow Control, would continuously cycle open and closed.
- c. RC 2, Pressurizer Spray Valve, would continuously cycle open and closed.
- d. RC 2A, PORV, would continuously cycle open and closed.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	015-K6.02	
	Importance Rating	2.6	2.9

Proposed Question: 37
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
a./b. NI-3 is reading correctly.
d. If voltage was high, NI-4 would indicate low.

Technical Reference(s): DB-OP-03006
Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-502-03K

Question Source: OLC-6762	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
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Question History 1996 NRC Exam	Previous NRC Exam Previous Quiz / Test	<u> X </u> _____
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Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u> X </u>

10 CFR Part 55 Content:	55.41 <u> .2 </u>
	55.43 <u> .6 </u>

Comments (Why is it an upper level question):
Must determine which NI is abnormal and then determine why.

Question: 37

The reactor has tripped, and all control rods have inserted. Nine minutes after the trip, the following plant conditions exist:

- Intermediate Range, NI-3, indicates a power level decrease of one decade every three minutes.
- Intermediate Range, NI-4, indicates a power level decrease of one decade every nine minutes.
- NI-3 currently reads 8×10^{-10} amps decreasing.
- NI-4 currently reads 6×10^{-8} amps decreasing.

Which one of the following explains the reason for the response of the intermediate range nuclear instruments?

- a. Compensating voltage on NI-3 is set too high.
- b. Compensating voltage on NI-3 is set too low.
- c. Compensating voltage on NI-4 is set too low.
- d. Compensating voltage on NI-4 is set too high.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	022-K4.04	
	Importance Rating	2.8	3.1
Proposed Question: 38			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect):			
a. CACs are designed for accidental conditions. b. CRD vent fans will not provide enough cooling if CCW is lost. c. CTMT recirc fans are for mixing air in CTMT.			
Technical Reference(s): DB-OP-06402		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination:			
None			
Learning Objective (As available): OPS-SYS-102-05K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .3 </u> 55.43 <u> .5 </u>		
Comments (Why is it an upper level question):			

Question: 38

A control rod drive ventilation fan should be started whenever:

- a. only one containment air cooler is available for cooling containment.
- b. component cooling water is lost to the control rod drive motors.
- c. the containment recirc fans are NOT running.
- d. the Control Rod Drive System is capable of rod withdrawal.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	003-A2.05	
	Importance Rating	2.5	2.8

Proposed Question: 39
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- Boron concentration is not high enough to affect RCP seals.
- BWST water is maintained high enough to not affect RCP seals.
- Letdown flow will not affect seal return flows.

Technical Reference(s):
DB-OP-02000

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-105-05K

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>X</u>

10 CFR Part 55 Content:	55.41	<u>.3</u>
	55.43	_____

Comments (Why is it an upper level question):
Must determine why RCP seal flows are abnormal.

Question: 39

The following plant conditions exist:

- The reactor tripped.
- Two control rods failed to insert.
- Boration from the BWST is in progress in order to establish adequate shutdown margin.
- All other post-trip responses are normal.

Twenty minutes after boration has been established, RCP seal return flow annunciators begin to alarm because:

- a. high boron concentration is affecting the RCP seal face clearances.
- b. high makeup tank level and pressure are affecting seal return flows.
- c. low seal injection water temperature from the BWST is affecting the RCP seal face clearances.
- d. high letdown flow rates are affecting seal return flows.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	056-A2.04	
	Importance Rating	2.6	2.8

Proposed Question: 40
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- b. Rapid shutdown required if flow is greater than available pump capacity.
- c. Runback starts at four feet in the D/As.
- d. Only need to throttle CD2796 if pressure is low.

Technical Reference(s): DB-OP-06221

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-205-15K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u>
	Comprehension or Analysis _____

10 CFR Part 55 Content:	55.41 <u> .4 </u>
	55.43 <u> .5 </u>

Comments (Why is it an upper level question):

Question: 40

The following plant conditions exist:

- The plant is at 75% power.
- All systems are in a normal lineup.

Which one of the following is the correct action if Condensate Pump 1 would trip?

- a. Start the standby condensate pump to maintain flow less than 3.5 MPPH per pump.
- b. Start a rapid plant shutdown to maintain deaerator levels at 8 feet.
- c. Monitor the automatic ICS runback to 55% power.
- d. Throttle CD 2796, Condensate Pump Discharge Pressure Control Valve, to maintain discharge pressure greater than 190 psig.

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	059-K4.13	
	Importance Rating	2.9	2.9
Proposed Question: 41 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. 40" is setpoint if SCM is adequate. b. 49" is setpoint if using AFW. d. 240" is max. level for SGTR.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-301-04K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 <u> .5 </u>		
Comments (Why is it an upper level question): Must recognize SCM is inadequate and determine SG level required by SR 4.			

Question: 41

The following plant conditions exist:

- Makeup/high pressure injection cooling is in progress due to a loss of all feedwater.
- Subcooling margin is 5°F.

The motor driven feed pump is started in the main feedwater mode.

Steam generator levels should be maintained at:

- a. 40 inches.
- b. 49 inches.
- c. 124 inches.
- d. 240 inches.

Answer:

- c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	059-A1.07	
	Importance Rating	2.5	2.6
Proposed Question: 42			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. 3900 RPM is the LSS setpoint. c. 4600 RPM is the RFR setpoint. d. 5300 RPM is the HSS setpoint.			
Technical Reference(s): DB-OP-02532		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-524-04K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> 4 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 42

The following plant conditions exist:

- The plant is at 100% power.
- All systems are in a normal lineup.

A loss of ICS DC power occurs. Prior to any operator action, the speed of BOTH main feed pumps will go to:

- a. 3900 RPM.
- b. 4400 RPM.
- c. 4600 RPM.
- d. 5300 RPM.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	061-K2.02	
	Importance Rating	3.7	3.7
Proposed Question: 43 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. F13 does not power MDPF auxiliaries. c./d. C2 does not power the MDPF.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-407-24K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .4 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 43

The following plant conditions exist:

- A loss of offsite power has occurred.
- Both AFPTs tripped.

The motor driven feed pump can be started if 4160 VAC Bus _____ and 480 VAC Motor Control Center _____ are re-energized.

- a. D2; F71
- b. D2; F13
- c. C2; F71
- d. C2; F13

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	068-A2.04	
	Importance Rating	3.3	3.3
Proposed Question: 44			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect):			
a. Stopping the dilution pump does not terminate the release.			
c./d. The release should be terminated.			
Technical Reference(s): DB-OP-03011			
Reference Attached: _____ (Attach if not previously provided)			
Proposed references to be provided to applicants during examination:			
None			
Learning Objective (As available): OPS-SYS-111-10K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .13 </u> 55.43 <u> .4 </u>		
Comments (Why is it an upper level question):			

Question: 44

The following plant conditions exist:

- A miscellaneous waste monitor tank release is in progress.
- RE 1878B, Miscellaneous Radwaste Monitor RE, is inoperable.
- Annunciator 7-1-D, MISC WST SYS OUT RAD HI, alarms due to a WARN alarm on RE 1878A.

The release:

- a. should be terminated by stopping the dilution pump from the Control Room.
- b. should be terminated by closing WM 1876, Misc Liquid Wst Disch Iso Vlv, from the Radwaste Control Panel.
- c. can continue if four-hour grab samples are taken by Chemistry.
- d. can continue with both RE 1878A and RE 1878B inoperable with Radiation Protection Manager approval.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	071-K1.05	
	Importance Rating	2.7	2.8

Proposed Question: 45
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
a./c. Radiation problem is not in containment.
b. 4-way ring down circuit is for notifications.

Technical Reference(s): HS-EP-02240
Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-606-01K

Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)
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Question History	Previous NRC Exam _____ Previous Quiz / Test _____
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Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____
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10 CFR Part 55 Content:	55.41 <u> .11 </u> 55.43 <u> .4 </u>
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Comments (Why is it an upper level question):

Question: 45

A General Emergency has been declared due to a waste gas decay tank rupture.

Which one of the following would be used to obtain data for an Off-Site Dose Assessment Nomogram?

- a. RE 4597AA, Containment Atmospheric Radiation Monitor, and the 4-way ring down circuit.
- b. RE 4598AA, Station Vent Radiation Monitor, and the 4-way ring down circuit.
- c. RE 4597AA, Containment Atmosphere Radiation Monitor, and the Meteorological Tower.
- d. RE 4598AA, Station Vent Radiation Monitor, and the Meteorological Tower.

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	072-K1.04	
	Importance Rating	3.3	3.5
Proposed Question: 46			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b./d. CREVS and station EVS do not auto start. c. FH ventilation is tripped by RE 8446 and RE 8447.			
Technical Reference(s): DB-OP-02009		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-606-06K			
Question Source: OLC-5623	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 2001 Quiz	Previous NRC Exam Previous Quiz / Test	_____ <u> X </u>	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u> .7 </u> <u> .4 </u>	
Comments (Why is it an upper level question):			

Question: 46

Which one of the following will automatically occur upon receipt of Annunciator 9-3-A, UNIT VENT RAD HI?

- a. The Control Room Normal Ventilation System will shut down.
- b. The Control Room Emergency Ventilation System will start up.
- c. The Fuel Handling Ventilation System will shut down.
- d. The Station Emergency Ventilation System will start up.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	2	2
Group #	1	1
K/A#	013-A4.02	
Importance Rating	4.3	4.4

Proposed Question: 47

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- b. HPI cannot exceed PT limits when RCS temperature is $>352^{\circ}\text{F}$.
- c. Interlock is not in effect when DH 11 and 12 are closed.
- d. Tech. Spec. limit is not a concern since pressurize level is low during heatup.

Technical Reference(s):
DB-OP-06900Reference Attached: _____
(Attach if not
previously provided)Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-506-02K

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> X </u>
	Comprehension or Analysis	_____

10 CFR Part 55 Content:	55.41	<u> .5 </u>
	55.43	_____

Comments (Why is it an upper level question):

Question: 47

During a plant heatup, SFAS low pressure trips are reset at an RCS pressure of 1650 psig to:

- a. prevent an SFAS channel from reaching the automatic block reset prior to resetting the low pressure trip.
- b. ensure an inadvertent HPI actuation does not cause RCS pressure to exceed the reactor vessel pressure-temperature limit.
- c. prevent the SFAS pressurizer heater interlock bistable from de-energizing pressurizer heaters.
- d. ensure an inadvertent HPI actuation does not cause pressurizer level to exceed the maximum Tech. Spec. limit.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	056-K1.03	
	Importance Rating	2.6	2.6
Proposed Question: 48 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./b./d. MFPT receives sealing steam from gland steam.			
Technical Reference(s): OS-010 OS-012A		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-205-13K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .4 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 48

Which of the following components receive seal water from the Condensate System?

1. Main feed pump shaft seal
 2. Main feed pump turbine shaft seal
 3. Main feed pump booster pump shaft seal
 4. Main feed pump turbine drain pump shaft seal
-
- a. 1, 2, and 3
 - b. 2, 3, and 4
 - c. 1, 3, and 4
 - d. 1, 2, and 4

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	2	2
Group #	1	1
K/A#	017-K3.01	
Importance Rating	3.5	3.7

Proposed Question: 49

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- b. Do not use That if RCS flow unavailable.
c./d. Do not throttle MU/HPI until SCM regained.

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

Proposed references to be provided to applicants during examination:

None

Learning Objective (As available): OPS-GOP-305-02K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u>X</u>

10 CFR Part 55 Content:	55.41 <u>.10</u>
	55.43 _____

Comments (Why is it an upper level question):

Must recognize the need to use average incore temperature to establish primary to secondary heat transfer.

Question: 49

The following plant conditions exist:

- Makeup/high pressure injection cooling is in progress due to a loss of all feedwater.
- The Safety Parameter Display System has failed.
- Auxiliary feedwater has been restored to SG2.

To induce primary to secondary heat transfer, lower _____.

- a. SG2 saturation temperature 50°F lower than average incore temperature
- b. SG2 saturation temperature 50°F lower than Loop 2 hotleg temperature
- c. makeup/HPI flow to raise average incore temperature 50°F higher than SG2 saturation temperature
- d. makeup/HPI flow to raise Loop 2 hotleg temperature 50°F higher than SG2 saturation temperature

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	033-K1.02	
	Importance Rating	2.5	2.7
Proposed Question: 50			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./c. SFP pumps are not capable of being powered from EDG and/or SBODG. d. DHP 2 does not have power.			
Technical Reference(s): DB-OP-02527		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-127-09K			
Question Source:	Bank # Modified Bank # New	_____ _____ <u>X</u>	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u>X</u>	
10 CFR Part 55 Content:	55.41 55.43	<u>.4</u> <u>.7</u>	
Comments (Why is it an upper level question): Must determine what pumps are available to provide cooling to the SFP.			

Question: 50

The following plant conditions exist:

- The reactor vessel has been defueled.
- A loss of offsite power occurs.
- EDG 1 starts and energizes C1 Bus.
- D1 Bus locks out.

Which one of the following methods can be used for cooling the Spent Fuel Pool (SFP)?

- a. Energize C2 Bus from C1 Bus and restart SFP Pump 1.
- b. Align Decay Heat Pump 1 to the SFP and start Decay Heat Pump 1.
- c. Energize D2 Bus from the SBODG and restart SFP Pump 2.
- d. Align Decay Heat Pump 2 to the SFP and start Decay Heat Pump 2.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	002-A4.03	
	Importance Rating	4.3	4.4

Proposed Question: 51
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- Increasing C/D rate will make head bubble bigger.
- Water needed to replace the head bubble.
- Increasing SG steaming will increase C/D rate.

Technical Reference(s): DB-OP-06903

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-206-06K

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>X</u>

10 CFR Part 55 Content:	55.41	<u>.14</u>
	55.43	_____

Comments (Why is it an upper level question):
Must analyze conditions, determine the problem and the solution to a head bubble.

Question: 51

The following plant conditions exist:

- The plant tripped due to a loss of offsite power.
- A plant cooldown is being performed to comply with Tech. Specs.
- RCS hotleg temperature is 550°F.
- RCS coldleg temperature is 518°F.
- RCS pressure is 1400 psig.
- Pressurizer level is increasing.
- Computer Point T012, Reactor Vessel Head Vent Temperature, indicates 586°F.

Which one of the following actions should be taken?

- a. Increase cooldown rate to lower reactor vessel head vent temperature.
- b. Increase RCS pressure to restore subcooling margin.
- c. Increase letdown flow to lower pressurizer level.
- d. Increase SG steaming rate to enhance natural circ flow.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	006-K5.01	
	Importance Rating	2.8	3.3
Proposed Question: 52 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./c. Level transmitters are not vented. d. Reference leg density decreases.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-301-04K			
Question Source: ORQ-1607	Bank # _____ Modified Bank # _____ New _____	<u> X </u> _____ _____	(Note changes or attach parent)
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .14 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine the effect temperature has on density and the effect on level indication.			

Question: 52

A small break LOCA has occurred resulting in a plant trip. The following plant conditions exist:

- Incore thermocouples read 580°F and steady.
- RCS pressure is 1400 psig and steady.
- All equipment has operated as designed.
- Average CAC suction temperature is 173°F.

Which one of the following explains Annunciator 3-3-F, CF TK 1 LVL HI, being lit?

- a. Increased containment PRESSURE has resulted in increased differential pressure across the CFT 1 level transmitter.
- b. Increased containment TEMPERATURE has resulted in decreased CFT 1 level indicator reference leg density.
- c. Increased containment PRESSURE has resulted in decreased differential pressure across the CFT 1 level transmitter.
- d. Increased containment TEMPERATURE has resulted in increased CFT 1 level indicator reference leg density.

Answer:

b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	011-A4.04	
	Importance Rating	3.2	2.9
Proposed Question: 53 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./b./c. Immediate action for pressurizer instrument failure is to place MU 32 in HAND and control makeup flow.			
Technical Reference(s): DB-OP-02514		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-104-18K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 <u> .5 </u>		
Comments (Why is it an upper level question): Must analyze plant conditions and determine immediate actions.			

Question: 53

The following plant conditions exist:

- The plant is at 100% power.
- MU 32, MAKE FLOW CONTROLLER, is opening.
- Temperature compensated pressurizer level has taken a STEP DROP to 150 inches.
- BOTH uncompensated pressurizer level instruments indicate 145 inches.
- The selected pressurizer temperature indicates 350°F.

Which one of the following actions should be taken IMMEDIATELY?

- a. Select the alternate pressurizer temperature instrument.
- b. Select an alternate temperature compensated pressurizer level instrument.
- c. Close MU 2B, Letdown Isolation Valve.
- d. Place MU 32 in HAND and obtain desired makeup flow.

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	2	2
Group #	2	2
K/A#	012-A1.01	
Importance Rating	2.9	3.4

Proposed Question: 54

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- b. The flux/delta flux/flow trip is bypassed.
- c. High flux trip is not bypassed.
- d. High flux trip is reduced to 4.5% when in SDBP.

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

Proposed references to be provided to applicants during examination:

None

Learning Objective (As available): OPS-SYS-502-24K

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

Question History	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u> X </u>

10 CFR Part 55 Content:	55.41	<u> .6 </u>
	55.43	_____

Comments (Why is it an upper level question):

Must determine the effect of the NI failure on current plant status.

Question: 54

The following plant conditions exist:

- A plant shutdown and cooldown is in progress.
- RCS pressure is 1620 psig.
- RCS temperature is 460°F.
- Group 1 Control Rods are withdrawn.

The lower detector for power range NI 6 fails high.

The NI failure will _____.

- a. cause RPS Channel 1 to trip on high flux
- b. cause RPS Channel 1 to trip on flux/delta flux/flow
- c. have no effect since RPS Channel 1 is in shutdown bypass
- d. have no effect since a single detector failure does NOT exceed the high flux trip setpoint of 104.75%

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	016-A2.04	
	Importance Rating	2.5	2.6
Proposed Question: 55			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./b./d. MU 32 loses power to the E/P booster which causes sluggish control.			
Technical Reference(s): DB-OP-02532		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-507-01K			
Question Source: ORQ-1648	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> _____	
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 55

The following plant conditions exist:

- The plant is at 100% power.
- The fuse supplying NNI AC power to the pressurizer level HAND/AUTO station, LIC RC14, blows.

Which one of the following describes the affect?

- a. MU 32 will fail open.
- b. MU 32 may NOT respond to control from the HAND/AUTO station.
- c. MU 32 may respond sluggishly.
- d. MU 32 will fail to mid-position.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	2	2
Group #	2	2
K/A#	029-A1.03	
Importance Rating	3.0	3.3

Proposed Question: 56

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

b./c./d. With only the purge fan running, pressure will drop in containment causing refueling canal level to rise.

Technical Reference(s):
DB-OP-06503Reference Attached: _____
(Attach if not
previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective (As available): OPS-SYS-109-08K

Question Source:	Bank #	<u> X </u>	
OLC-4753	Modified Bank #	<u> </u>	(Note changes or attach parent)
	New	<u> </u>	

Question History	Previous NRC Exam	<u> X </u>
1999 NRC Exam	Previous Quiz / Test	<u> </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> </u>
	Comprehension or Analysis	<u> X </u>

10 CFR Part 55 Content:	55.41	<u> .9 </u>
	55.43	<u> .7 </u>

Comments (Why is it an upper level question):

Must determine the effect and CTMT pressure and the effect on RF canal and SFP levels.

Question: 56

The following plant conditions exist:

- Plant is in Mode 6.
- Fuel handling operations are in progress.
- Containment Equipment Hatch is installed.
- The inner door of the personnel hatch is closed.
- A start of the Containment Purge System on containment is attempted.
- The CTMT purge exhaust fan starts. The CTMT purge supply fan fails to start.
- The CTMT purge exhaust fan fails to automatically trip.

The refueling canal level will _____ and the spent fuel pool level will _____.

- a. increase; decrease
- b. decrease; increase
- c. increase; not change
- d. not change; increase

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	039-K1.05	
	Importance Rating	2.5	2.6

Proposed Question: 57
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

a. FW flow stays constant since reactor power and steam flow remain the same.

b./c. TBVs control at 870 psig since the reactor does not trip.

Technical Reference(s): DB-OP-02500

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-101-05K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u>X</u>

10 CFR Part 55 Content:	55.41 <u>.4</u>
	55.43 _____

Comments (Why is it an upper level question):

Must determine how a turbine trip affects reactor power and the affect on TBVs and feedwater.

Question: 57

The following plant conditions exist:

- The plant is at 22% power.
- A plant startup is in progress.

The main turbine trips on low lube oil pressure.

Which of the following is the expected response for feedwater control and steam pressure control?

- a. Feedwater flow decreases.
Turbine bypass valves control pressure at 870 psig.
- b. Feedwater flow remains constant.
Turbine bypass valves control pressure at 995 psig.
- c. Feedwater flow decreases.
Turbine bypass valves control pressure at 995 psig.
- d. Feedwater flow remains constant.
Turbine bypass valves control pressure at 870 psig.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	055-K3.01	
	Importance Rating	2.5	2.7
Proposed Question: 58 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Flash tank normally has positive pressure. b. High circ. water temperature would not increase off-gas flow. d. Steam flow is higher because of the high condenser pressure.			
Technical Reference(s): DB-OP-02518		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-118-07K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .4 </u> 55.43 _____		
Comments (Why is it an upper level question): Must analyze plant conditions to determine the reason for high condenser pressure.			

Question: 58

The following plant conditions exist:

- LP condenser pressure has increased from 2.2" to 3.7" HgA.
- HP condenser pressure has increased from 4.3" to 5.3" HgA.
- Reactor power is at 102%.
- Off-gas flow (FI-1002) is off scale high.

Based on the above information, the cause of the increasing condenser pressure is _____.

- a. positive pressure in the flash tank
- b. high circulating water temperature
- c. PCV 1061, Vacuum Control Valve, open
- d. high total steam flow

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	064-K3.03	
	Importance Rating	3.6	3.9
Proposed Question: 59			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Load does not increase when the governor fails. b. Cannot change power factor if the EDG is not paralleled. d. Isochronous-droop switch does not effect the hydraulic governor.			
Technical Reference(s): DB-OP-06316		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-406-09K			
Question Source:	Bank # _____ Modified Bank # _____ New <u>X</u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u>X</u>		
10 CFR Part 55 Content:	55.41 <u>.7</u> 55.43 _____		
Comments (Why is it an upper level question): Must determine how the governor failure affects the EDG and determine the corrective action.			

Question: 59

The following plant conditions exist:

- The plant is at 100% power.
- An undervoltage on 4160 VAC Bus D1 occurs.
- EDG 2 starts and energizes D1 bus.

Five minutes later, the electronic governor for EDG 2 loses power.

Which one of the following actions is required to return the operating parameters for EDG 2 to normal?

- a. Stop non-essential loads to return EDG 2 load to less than 2600 KW.
- b. Raise the generator voltage to return EDG 2 power factor to .8.
- c. Lower engine speed to return EDG 2 to 60 Hertz.
- d. Place the governor in the isochronous mode with the isochronous-droop switch.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	073-K5.02	
	Importance Rating	2.5	3.1
Proposed Question: 60			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect):			
a. EVS is aligned to the MPRs if an FH accident occurs in CTMT. c. FH vent. is required to be stopped. d. CREVS is started on an FH accident in CTMT.			
Technical Reference(s): DB-OP-02530		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-130-03K			
Question Source:	Bank # Modified Bank # New	_____ _____ <u>X</u>	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u>X</u>	
10 CFR Part 55 Content:	55.41 55.43	<u>.10</u> <u>.7</u>	
Comments (Why is it an upper level question): Must determine correct actions based on plant and equipment conditions.			

Question: 60

The following plant conditions exist:

- The plant is in Mode 6.
- The core is being off-loaded to the Spent Fuel Pool (SFP).
- Essential 480 VAC Bus F1 is out of service.
- Fuel handling personnel report a fuel assembly has been damaged in the SFP.
- A HIGH alarm is received on RE 8446 and RE 8447, Fuel Handling Exhaust System REs.

Which one of the following actions should be taken?

- a. Realign EVS Train 1 to the mechanical penetration rooms.
- b. Evacuate all of the Radiologically Restricted Area (RRA).
- c. Verify the Fuel Handling Ventilation System is running.
- d. Start Control Room EVS Train 1.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	075-K2.03	
	Importance Rating	2.6	2.7
Proposed Question: 61 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./b. BUSWP is powered from C2 bus. d. EDG 2 is stopped due to high CCW temperature.			
Technical Reference(s): DB-OP-02521 DB-OP-02511		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-111-03K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 <u> .5 </u>		
Comments (Why is it an upper level question): Must analyze electrical busses available and determine how to power the BUSWP.			

Question: 61

The following plant conditions exist:

- The plant is at 100% power.
- Service Water Pump (SWP) 3 is out of service.
- A loss of off-site power occurs.
- SWP 2 fails to start.
- CCW Loop 2 temperature has risen to 130°F.
- DB-OP-02000 actions have been performed.

Which one of the following actions should be performed to start the Backup Service Water Pump (BUSWP) in place of SWP 2?

- a. Energize D2 bus from the SBODG, and start the BUSWP.
- b. Energize D2 bus from C1 bus, and start the BUSWP.
- c. Energize C2 bus from C1 bus, and start the BUSWP.
- d. Energize C2 bus from EDG 2, and start the BUSWP.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	2	2
Group #	2	2
K/A#	079-A2.01	
Importance Rating	2.9	3.2

Proposed Question: 62

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. SA 10920 does not control IA pressure.
- c. Air dryers would not be isolated.
- d. AVV air would not be isolated.

Technical Reference(s):
OS-19BReference Attached: _____
(Attach if not
previously provided)Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-602-12K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u>X</u>

10 CFR Part 55 Content:	55.41 <u>.4</u>
	55.43 _____

Comments (Why is it an upper level question):

Must analyze what SA 6445 isolates.

Question: 62

The following plant conditions exist:

- The reactor has been tripped due to a loss of TPCW.
- The Emergency Instrument Air Compressor (EIAC) is running.
- Both Station Air Compressors (SAC) are locked out.

Which one of the following describes the effect that SA 6445, IA/SA Crosstie, inadvertently closing would have?

- a. SA 10920, Discharge Pressure Control Valve, would be isolated and unable to control IA pressure.
- b. Atomizing air to the auxiliary boiler would be isolated.
- c. The air dryers would be isolated, and moisture would accumulate in the IA System.
- d. Control air to the atmospheric vent valves would be isolated.

Answer:

b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	086-K6.04	
	Importance Rating	2.6	2.9
Proposed Question: 63			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. Sprinkler heads are fused and actuate by heat. c./d. The ten-minute time delay is on the Aux. Building water curtains.			
Technical Reference(s): OS-47B		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-601-03K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine how the detector failure affects the sprinkler system and determine if the sprinkler heads will actuate.			

Question: 63

A local fire detector in Room 318, EDG 1 Room, fails and sends an actuation signal to the Fire Suppression System.

Which one of the following describes the response of the Room 318 Fire Suppression System?

- a. The sprinkler pipe fills with water.
The sprinkler heads do not actuate.
- b. The sprinkler pipe fills with water.
The sprinkler heads actuate immediately.
- c. A ten-minute time delay starts to fill the sprinkler pipe.
The sprinkler heads actuate immediately.
- d. A ten-minute time delay starts to fill the sprinkler pipe.
The sprinkler heads do not actuate.

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	3	3
	K/A#	078-K4.02	
	Importance Rating	3.2	3.5
Proposed Question: 64			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): SA 2008 fails closed at 90 psig. SA 6445 fails closed at 95 psig. IA 2043 full closed at 70 psig. IA 2044 full closed at 60 psig.			
Technical Reference(s): OS-19		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-602-07K			
Question Source: OLC-3528	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 1997 Exam	Previous NRC Exam Previous Quiz / Test	<u> X </u> _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u> .7 </u> _____	
Comments (Why is it an upper level question):			

Question: 64

The following plant conditions exist:

- The plant is at 100% power.
- Instrument air pressure is 99 psig and decreasing.

Which of the following describes the correct sequence of events if instrument air pressure continues to decrease?

1. IA 2043, TURBINE BLDG BACK PRESSURE CONTROL VALVE, goes full closed.
 2. IA 2044, AUX BLDG INSTRUMENT AIR CONTROL VALVE, goes full closed.
 3. SA 2008, STATION AIR HEADER BACK PRESSURE REGULATOR, goes full closed.
 4. SA 6445, IA/SA CROSSTIE SOLENOID, goes full closed.
-
- a. 2,1,4,3
 - b. 2,4,3,1
 - c. 4,2,3,1
 - d. 4,3,1,2

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	2	2
Group #	3	3
K/A#	007-A2.05	
Importance Rating	3.2	3.6

Proposed Question: 65

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- b. QT pumps to RCDT.
- c. QT pumps to RCDT.
- d. QT auto recircs on high temperature.

Technical Reference(s):
OS-01AReference Attached: _____
(Attach if not
previously provided)

Proposed references to be provided to applicants during examination:

None

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

Question Source:	Bank #	<u> X </u>	(Note changes or attach parent)
ONL-2911	Modified Bank #	<u> </u>	
	New	<u> </u>	

Question History	Previous NRC Exam	<u> </u>
	Previous Quiz / Test	<u> </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> </u>
	Comprehension or Analysis	<u> X </u>

10 CFR Part 55 Content:	55.41	<u> .10 </u>
	55.43	<u> </u>

Comments (Why is it an upper level question):

Must determine what is causing QT pump to start and where it drains.

Question: 65

The following plant conditions exist:

- PZR PORV outlet temperature 255°F
- PZR quench tank level 10.0 ft.
- PZR quench tank temperature 215°F

Assume PZR quench tank level and temperature control are in AUTOMATIC. Which one of the following is correct?

- a. Quench tank recirculating pump started on HIGH TEMPERATURE caused by the leaking PORV, and level is automatically being controlled by draining to the RC DRAIN TANK.
- b. Quench tank recirculating pump started on HIGH LEVEL caused by the leaking PORV, and level is automatically being controlled by draining to the CONTAINMENT SUMP.
- c. Quench tank recirculation pump started to reduce HIGH TEMPERATURE caused by the leaking PORV, and level is automatically being controlled by draining to the CONTAINMENT SUMP.
- d. Quench tank recirculating pump started to reduce HIGH LEVEL caused by the leaking PORV, and level is automatically being controlled by draining to the RC DRAIN TANK.

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	3	3
	K/A#	041-A4.08	
	Importance Rating	3.0	3.1

Proposed Question: 66
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):
b. ICS does not lose power.
c./d. Instrument air compressor is powered from D2 bus.

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

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-512-06K

Question Source: ORQ-0105	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
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Question History 2000 Requal Exam	Previous NRC Exam Previous Quiz / Test	<u> </u> <u> X </u>
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Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> </u> <u> X </u>
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10 CFR Part 55 Content:	55.41 <u> .4 </u> 55.43 <u> </u>
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Comments (Why is it an upper level question):
Must analyze plant conditions to determine TBVs cannot be operated.

Question: 66

The following plant conditions exist:

- The plant was at 100% power.
- A complete loss of off-site power occurred approximately ten minutes ago.
- EDGs have started and loaded as required.
- The Station Blackout Diesel Generator has been started and is supplying Bus D2.

Which of the following conditions will prevent the turbine bypass valves from controlling SG pressures?

1. The MSIVs (MS 100 and MS 101) have closed.
 2. All four circ. water pumps have tripped.
 3. Instrument air pressure has been lost.
 4. ICS power has been de-energized.
-
- a. 1, 2
 - b. 1, 4
 - c. 2, 3
 - d. 3, 4

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	2
	Group #	3	3
	K/A#	045-2.4.50	
	Importance Rating	3.3	3.3
Proposed Question: 67 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./b./c. Turbine will not trip unless >80% @ two minutes.			
Technical Reference(s): DB-OP-02016		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-215-15K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .4 </u> 55.43 _____		
Comments (Why is it an upper level question): Must analyze data to determine the status of the annunciators.			

Question: 67

The following plant conditions exist:

- The plant was at 100% power.
- Both stator cooling water pumps tripped.
- Two minutes later, the plant is at 50% power.

Which of the following annunciators will be in alarm?

1. 14-6-D, ICS IN TRACK
 2. 16-1-F, STAT-CLNT LOSS TURB TRIP
 3. 16-1-G, STAT-CLNT LOSS T-G RNBK
 4. 16-2-F, STAT-CLNT INLET FLOW LO
-
- a. 1, 2, 3
 - b. 1, 2, 4
 - c. 1, 3, 4
 - d. 2, 3, 4

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:

Level:	RO	SRO
Tier #	3	3
Group #		
K/A#	GEN 2.1.19	
Importance Rating	3.0	3.0

Proposed Question: 68

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. Must average SG steam and water temperatures.
- b. Must average SG steam and water temperatures.
- d. DAAS does not provide SG shell temperatures.

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

Proposed references to be provided to applicants during examination:

None

Learning Objective (As available): OPS-GOP-206-05K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge <u>X</u>
	Comprehension or Analysis _____

10 CFR Part 55 Content:	55.41 <u>.4</u>
	55.43 _____

Comments (Why is it an upper level question):

Question: 68

The following plant conditions exist:

- The plant has tripped due to a major steam leak.
- SG 1 is dry.
- Safety Parameter Display System (SPDS) is not functioning.

In order to determine SG tube to shell differential temperature:

- a. SG 1 outlet temperature (TI 614) can be substituted for the average SG shell temperature.
- b. SG 1 downcomer (TI SP8B) temperature can be substituted for the average SG shell temperature.
- c. Average SG shell temperature can be provided from the Plant Process Computer (PPC).
- d. Average SG shell temperature can be provided from the Data Acquisition Analysis System (DAAS).

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	3
	Group #		
	K/A#	GEN 2.1.27	
	Importance Rating	2.8	2.9
Proposed Question: 69 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b./c./d. The only high rad signal that auto starts EVS is from the FH area.			
Technical Reference(s): DB-OP-06504		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-109-01K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .11 </u> 55.43 <u> .7 </u>		
Comments (Why is it an upper level question):			

Question: 69

The station EVS automatically starts on a high radiation signal _____.

- a. in the fuel handling area
- b. in the radwaste area
- c. from the Containment Purge System radiation monitor when purging the mechanical penetration rooms
- d. from the Containment Purge System radiation monitor when purging containment.

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	3
	Group #		
	K/A#	GEN 2.2.33	
	Importance Rating	2.5	2.9

Proposed Question: 70

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a./c. Performed by a different ST.
- d. Performed under a work order.

Technical Reference(s):
DB-SC-03271

Reference Attached: _____
(Attach if not
previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-501-02K

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

Question History Previous NRC Exam _____
Previous Quiz / Test _____

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

10 CFR Part 55 Content: 55.41 .2
55.43 .6

Comments (Why is it an upper level question):

Question: 70

After the reactor has been refueled, DB-SC-03271, Control Rod Drive (CRD) Program Verification, is performed to ensure _____.

- a. CRD breakers receive trip signals from RPS
- b. CRD power cables are correctly connected
- c. CRD sequence fault circuitry operates properly
- d. CRD motors have cooling water connected

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	3
	Group #		
	K/A#	GEN 2.4.09	
	Importance Rating	3.3	3.9

Proposed Question: 71
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. AFW is controlling SG level
- c. Pressurizer level setpoint will be below the normal post-trip setpoint.
- d. The bias will cause TBVs to close.

Technical Reference(s): DB-OP-02000

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

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

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis <u>X</u>

10 CFR Part 55 Content:	55.41 <u>.10</u>
	55.43 <u>.5</u>

Comments (Why is it an upper level question):
Must analyze plant conditions and determine the reason for the overcooling.

Question: 71

The following plant conditions exist:

- The plant was at 5% power following a startup from a two-week maintenance outage.
- A malfunction of a startup feedwater control valve has led to an SFRCS actuation on low SG level.
- All systems responded normally.
- Ten minutes after the reactor trip, RCS temperature and SG pressures are slowly decreasing.

Which one of the following would be the correct mitigation strategy for this event?

- a. Manually control MFW control valves and MFW pumps since RFR was NOT armed.
- b. Manually initiate AFW flow and isolation of both SGs due to secondary steam demand exceeding primary heat production.
- c. Lower pressurizer level setpoint to minimize the makeup flow into the RCS.
- d. Manually control turbine bypass valves due to the 125 psig bias added to the steam header pressure setpoint.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	3
	Group #		
	K/A#	GEN 2.4.26	
	Importance Rating	2.9	3.3
Proposed Question: 72 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Cannot replace the US without an up-to-date physical. b. SM cannot be part of the Fire Brigade. d. FS cannot be part of the Fire Brigade without an up-to-date physical.			
Technical Reference(s): NT-OT-07007		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-501-05K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 <u> .5 </u>		
Comments (Why is it an upper level question): Must determine manning requirement based on plant mode and determine how to replace an individual.			

Question: 72

The following plant conditions exist:

- The plant is at 100% power.
- The Shift Manager is notified that the on-duty Field Supervisor, who is also the Fire Brigade Captain, failed the required two-year physical due to the spirometer test.

Which of the following actions can be taken to replace the Field Supervisor/Fire Brigade Captain?

- a. The Field Supervisor can take the Unit Supervisor position. The Unit Supervisor can take the Field Supervisor position and Fire Brigade Captain position, if qualified.
- b. The Field Supervisor can remain in the Field Supervisor position. The Shift Manager can become the Fire Brigade Captain, if qualified.
- c. The Field Supervisor can remain in the Field Supervisor position. A spare Equipment Operator III can become the Fire Brigade Captain, if qualified.
- d. The Field Supervisor can remain in the Field Supervisor position and the Fire Brigade Captain Position for up to two hours while waiting for a replacement to be called in.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	3
	Group #		
	K/A#	GEN 2.4.39	
	Importance Rating	3.3	3.1

Proposed Question: 73

See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. Cannot make PARs.
- b. Cannot classify.
- c. Cannot downgrade.

Technical Reference(s):
RA-EP-01500

Reference Attached: _____
(Attach if not
previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective (As available): OPS-GOP-601-03K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u>
	Comprehension or Analysis _____

10 CFR Part 55 Content:	55.41 <u> .10 </u>
	55.43 <u> .5 </u>

Comments (Why is it an upper level question):

Question: 73

Which of the following actions can be performed by a Reactor Operator during the implementation of the Emergency Plan?

1. Off-site dose assessment
 2. Classification of the event
 3. Protective action recommendation
 4. Downgrade of the event
 5. State and counties notifications
 6. NRC notifications
-
- a. 1, 3, 5
 - b. 2, 4, 6
 - c. 2, 3, 4
 - d. 1, 5, 6

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A#	000-029-EA2.05	
	Importance Rating	3.4	3.4
Proposed Question: 74 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. RCS heats up because MFW flow is lowering. c. RFR will not actuate until < 23.5% power. d. System flow would not exceed the capacity of the MFW System.			
Technical Reference(s): ICS Logic Drawings		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-302-02K			
Question Source:	Bank # _____ Modified Bank # _____ New <u>X</u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u>X</u>		
10 CFR Part 55 Content:	55.41 <u>.2</u> 55.43 _____		
Comments (Why is it an upper level question): Must determine how MFW is effected by an ATWS and how MFW will respond.			

Question: 74

The following plant conditions exist:

- The plant was initially at 100% power.
- The main turbine tripped due to high vibrations.
- The reactor failed to trip.
- Efforts to de-energize Buses E2 and F2 from the Control Room have been UNSUCCESSFUL.

Which one of the following describes the response of the Main Feedwater Control Valves (MFCVs) in ICS automatic control?

- a. MFCVs move in the closed direction due to ICS being in TRACK.
- b. MFCVs move in the open direction due to the RCS heatup.
- c. MFCVs move in the closed direction due to RAPID FEEDWATER REDUCTION.
- d. MFCVs move in the open direction due to excessive steam flow through the MS Safety Valves.

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	BW/A02-AA2.1	
	Importance Rating	3.6	4.0
Proposed Question: 75 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Loss of NNI/ICS AB will route to DB-OP-02000. c. NNI not affected if power source transfers. d. YBU will power NNI on a loss of YAU.			
Technical Reference(s): DB-OP-02532		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-132-01K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 <u> .5 </u>		
Comments (Why is it an upper level question): Must analyze plant conditions to determine appropriate procedure to use.			

Question: 75

The following plant conditions exist:

- The plant is in Mode 3.
- The following annunciators are received:
 - ICS/NNI 118 VAC PWR TRBL (14-2-D)
 - ICS INPUT MISMATCH (14-4-E)
 - ICS INPUT TRANSFER (14-4-F)
 - NNI X AC power light is out

Which one of the following is the proper procedure to be FIRST utilized?

- a. DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture
- b. DB-OP-02532, Loss of NNI/ICS Power
- c. DB-OP-02537, Loss of D1P and DAP
- d. DB-OP-02541, Loss of YAU

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	
	Group #	1	
	K/A#	000-027-AK2.03	
	Importance Rating	2.6	
Proposed Question: 76 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Indicated pressurizer level does not go below 40 inches which is the low level cutoff for pressurizer heaters. c./d. Indicated pressurizer level decreases, which sends an open signal to MU32.			
Technical Reference(s): DB-OP-02513		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-113-03K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question): Must recognize temperature compensation failing low causes indicated level to decrease and determine how the low level affects MU32 and pressurizer heaters.			

Question: 76

The plant is at 100% power with all systems normal. The selected pressurizer temperature instruments fails low.

The instrument failure causes MU32 to _____ and pressurizer heaters _____.

- a. open; to de-energize
- b. open; are NOT effected
- c. close; to de-energize
- d. close; are NOT effected

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	1	
	Group #	2	
	K/A#	000-033-AK3.02	
Importance Rating		3.6	
Proposed Question: 77			
See Attached			
Proposed Answer:		See attached	
Explanation (Why the distractors are incorrect):			
a. SUR not effected by NI 3 failure. b. Tech. Spec. prohibits going above 5% if initially below 5% when the NI fails. d. Bypassing RPS will not remove the loss of NI signal.			
Technical Reference(s): DB-OP-02505		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination:			
None			
Learning Objective (As available): OPS-GOP-105-03K			
Question Source: OLC-3407	Bank # Modified Bank # New	_____ <u> X </u> _____	(Note changes or attach parent)
Question History 1996 Quiz	Previous NRC Exam Previous Quiz / Test	_____ <u> X </u> _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u> .1 </u> _____	
Comments (Why is it an upper level question):			

ORIGINAL

Question: 77

The following plant conditions exist:

- The plant is in Mode 1, at 7% RTP during initial power escalation from a refueling outage.
- Intermediate Range NI3 fails LOW.

Which ONE of the following conditions will result from this occurrence?

- a. No effect.
- b. Source Range NI 1 will energize.
- c. BOTH Source Range NIs will be energized.
- d. Intermediate Range SUR will fail mid-scale at 5 dpm (on CTRM center console).

Answer:

- c.

Question: 77

The following plant conditions exist:

- The reactor is at 7% power during initial power escalation from a refueling outage.
- Intermediate Range NI 3 fails low.

Which one of the following OPERATOR actions will be required as a result of this occurrence?

- a. Rod withdrawal and power increase will need to be stopped due to high startup rate.
- b. Reactor power will need to be reduced to less than 5% to comply with Tech. Specs.
- c. Both Source Range NIs will need to be de-energized since reactor power is less than 10%.
- d. RPS Channel 4 will need to be manually bypassed to remove the channel's input to other RPS channels.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	1	
	K/A#	001-GEN 2.1.33	
	Importance Rating	3.4	
Proposed Question: 78 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. T.S. 3.1.3.6 allows Group 7 rods to be at 100% at any power level. b. T.S. 3.1.3.9 allows APSRs to be at any position until the end of core life. c. T.S. 3.1.3.1 requires all rods to be within 6.5% of the group average.			
Technical Reference(s): Tech. Spec. 3.1.3.5		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-431-01K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .6 </u> 55.43 _____		
Comments (Why is it an upper level question): Must analyze conditions and determine if Tech. Spec. applies.			

Question: 78

The plant is at 50% power and 300 EFPD.

Which one of the following would require entry into Tech. Specs.?

- a. Group 7 rods are 100% withdrawn.
- b. Group 8 rods are 90% withdrawn.
- c. Rod 5-4 is 96% withdrawn.
- d. Rod 2-2 is 92% withdrawn.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	1	
	K/A#	003-A4.08	
	Importance Rating	3.2	
Proposed Question: 79			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./c./d. These are supplemental actions for a loss of MU pump.			
Technical Reference(s): DB-OP-02512		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None.			
Learning Objective (As available): OPS-GOP-115-02K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 79

The following plant conditions exist:

- The plant is at 100%.
- The running makeup pump trips.

Which one of the following should be performed immediately?

- a. Place MU19, RCP Seal Injection Flow Control, in HAND and close.
- b. Verify CCW supply to the RCPs.
- c. Place MU32, Pressurizer Level Control, in HAND and close.
- d. Verify the makeup tank is available.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	1	
	K/A#	013-K1.12	
	Importance Rating	4.1	
Proposed Question: 80 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. SFAS start puts the EDG in the isochronous mode. b. Sequence only starts on C1 or D1 undervoltage. d. Same as a. and b.			
Technical Reference(s): DB-OP-06316		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-506-07K			
Question Source: OLC-7372	Bank # Modified Bank # New	_____ <u> X </u> _____	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u> X </u>	
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine the effect an SFAS actuation has on the EDGs.			

ORIGINAL

Question: 80

- The Emergency Diesel Generator (EDG) 1 is running for the monthly surveillance.
- The EDG is paralleled with the grid and at full load.
- SFAS Channels 1 and 2 trip due to RCS low pressure.

Select the condition of the EDG and the SFAS load sequencer AFTER receipt of the SFAS signal.

- a. The EDG engine remains running and the load sequencer is not started.
- b. The EDG engine remains running and the load sequencer is started.
- c. The EDG engine trips and the load sequencer is not started.
- d. The EDG engine trips and the load sequencer is started.

Answer:

- a.

Question: 80

The following plant conditions exist:

- Emergency Diesel Generator (EDG) 1 is running for the monthly surveillance test and is paralleled with the grid at 2500 KW.
- A small break LOCA causes an SFAS actuation on RCS low pressure.
- No operator actions have been taken.

Which one of the following describes the mode of the EDG and the SFAS sequencer AFTER receipt of the SFAS signal?

- a. EDG 1 is in the droop mode and the sequencer is NOT started.
- b. EDG 1 is in the isochronous mode and the sequencer is started.
- c. EDG 1 is in the isochronous mode and the sequencer is NOT started.
- d. EDG 1 is in the droop mode and the sequencer is started.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	1	
	K/A#	015-A3.02	
	Importance Rating	3.7	
Proposed Question: 81 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Sequence inhibit applicable when rods are in auto. b. Asymmetric fault applicable when >60% power. d. SRO applicable when rods are in auto.			
Technical Reference(s): DB-OP-06402		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-501-06K			
Question Source: OLC-6719	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u> X </u>	
10 CFR Part 55 Content:	55.41 55.43	<u> .6 </u> <u> .6 </u>	
Comments (Why is it an upper level question): Must determine when various scenarios are applicable to out inhibit.			

Question: 81

Which one of the following conditions would result in an OUT INHIBIT being generated in the rod control logic?

- a. Sequence inhibit during approach to criticality.
- b. An asymmetric fault when lifting off low level limits.
- c. A high intermediate range startup rate when at the point of adding heat.
- d. A safety rod group NOT at the out limit during control rod exercise test.

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	1	
	K/A#	022-A3.01	
	Importance Rating	4.1	

Proposed Question: 82
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- Spray pumps would not be running.
- CACs would be in slow speed.
- Spray valves throttle when suction is transferred to the emergency sump.

Technical Reference(s): DB-OP-02000

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-306-03K

Question Source:	Bank #	<u> X </u>	(Note changes or attach parent)
OLC-7153	Modified Bank #	<u> </u>	
	New	<u> </u>	

Question History	Previous NRC Exam	<u> </u>
2001 Quiz	Previous Quiz / Test	<u> X </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> </u>
	Comprehension or Analysis	<u> X </u>

10 CFR Part 55 Content:	55.41	<u> .7 </u>
	55.43	<u> </u>

Comments (Why is it an upper level question):
Must recognize SFAS has initiated and determine appropriate equipment response.

Question: 82

The following plant conditions exist:

- The plant had been operating at 100% power.
- A small break loss of coolant accident has caused the RCS pressure to lower to 1500 psig. Containment pressure is 19.3 psia.

Which one of the following statement describes automatic actions which should have occurred for this condition?

- a. Two CACs running in fast, two CTMT spray pumps running with discharge valves throttled to 60%.
- b. Two CACs running in fast, two CTMT spray pumps running with discharge valves open
- c. Two CACs running in slow, CTMT spray pumps off with discharge valves throttled to 60%.
- d. Two CACs running in slow, CTMT spray pumps off with discharge valves open.

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	1	
	K/A#	059-K3.03	
	Importance Rating	3.5	
Proposed Question: 83 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Indicated flow is less than demand. c./d. SG levels will increase.			
Technical Reference(s): DB-OP-06407		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-512-04K			
Question Source: ORQ-1991	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 2000 Exam	Previous NRC Exam Previous Quiz / Test	_____ <u> X </u>	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u> X </u>	
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine how RTD failure affects actual FW flow and determine the affect on SG levels.			

Question: 83

The following plant conditions exist:

- The plant is operating at 100% power.
- The ICS is in full automatic.
- The RTD providing temperature compensation for feedwater flow is failing high.
- No SASS transfer occurs.

Which one of the following describes the response of the steam generator levels?

- a. SG levels will INCREASE because indicated feedwater flow is greater than feedwater demand.
- b. SG levels will INCREASE because indicated feedwater flow is less than feedwater demand.
- c. SG levels will DECREASE because indicated feedwater flow is greater than feedwater demand.
- d. SG levels will DECREASE because indicated feedwater flow is less than feedwater demand.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	2	
	K/A#	010-K4.03	
	Importance Rating	3.8	
Proposed Question: 84 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Spray valve will only go to 40% when in AUTO. b. Spray valve will go to 40% when pressure is >2205 psig. c. Spray valve will only go to 40% when in AUTO.			
Technical Reference(s): OS-01A		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-104-05K			
Question Source: OLC-6486	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u> X </u>	
10 CFR Part 55 Content:	55.41 <u> .3 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine how conditions affect the spray valve.			

Question: 84

The following plant conditions exist:

- RC System pressure is 2190 psig.
- The operator has taken the RC2, Pressurizer Spray Valve, control switch to OPEN and then RETURNED to auto with the spray valve at 25% open.

Which one of the following describes the expected response of the pressurizer spray valve under these conditions?

- a. The spray valve will immediately go to fully open.
- b. The spray valve will immediately open to the 40% open position.
- c. The spray valve will remain at 25% open until pressure increases to 2205 psig, at which time it will open fully.
- d. The spray valve will remain at 25% open until pressure increases to 2205 psig, at which time it will open to 40% open.

Answer:

d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	2	
	K/A#	014-GEN 2.1.21	
	Importance Rating	3.1	
Proposed Question: 85			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. Night Orders have direction to perform the test. c. PR-01 provides guidance for altering procedures. d. DOCS has been replaced by Curator.			
Technical Reference(s): NG-NA-00107		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): ONL-BQT-127-05K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 85

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

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

- a. using the Curator controlled view library
- b. referring to the most recent Night Order
- c. referring to PR-01, Operations Procedure Maintenance
- d. using the Document On-Line Control System (DOCS)

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	2	
	K/A#	026-K3.02	
	Importance Rating	4.2	
Proposed Question: 86 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Will not increase flow rate. c./d. Does not increase discharge pressure.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-306-10K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .8 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine how the failure affects CTMT spray.			

Question: 86

A large break loss of coolant accident has occurred.

While transferring LPI suction to the emergency sump, CS 1530, Containment Spray Pump 1 (CSP) Discharge Valve, fails in the OPEN position.

Which one of the following describes the effect this failure will have on the Containment Spray System?

- a. Potential to exceed the design flow rate of the CSP.
- b. Potential to lose net positive suction head for the CSP.
- c. Potential to overpressurize the containment spray header.
- d. Potential to cause cavitation at the containment spray header nozzles.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	2	
	K/A#	035-A3.01	
	Importance Rating	4.0	
Proposed Question: 87 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Setpoint without an SFAS actuation. b. Setpoint without an SFAS and low pressure on an SG. d. Setpoint with an SFAS and low pressure on an SG.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: Steam Tables			
Learning Objective (As available): OPS-GOP-301-04K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine the status of RCPs and if SFAS has actuated to determine SG level.			

Question: 87

The following plant conditions exist:

- The reactor has tripped from 100% power due to low RCS pressure.
- RCS pressure is 1500 psig.
- Hotleg temperatures are 590°F.
- Average incore temperature is 595°F.
- SG1 pressure is 790 psig and steady.
- SG2 pressure is 820 psig and steady.

Which one of the following SG levels should be maintained?

- a. 49 inches
- b. 55 inches
- c. 124 inches
- d. 130 inches

Answer:

- c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	2	
	K/A#	062-A3.04	
	Importance Rating	2.7	
Proposed Question: 88 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Battery charger will not have power. c. E4 will be deenergized. d. F4 is not the normal power supply.			
Technical Reference(s): DB-OP-06333		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-410-07K			
Question Source: ONL-0532	Bank # _____ Modified Bank # _____ New _____	X _____ _____	(Note changes or attach parent)
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis _____	X	
10 CFR Part 55 Content:	55.41 .7 55.43 _____		
Comments (Why is it an upper level question): Must determine status of power supplies and determine what will power the distribution panel.			

Question: 88

The following plant conditions exist:

- The plant was at 100% power.
- All systems were in a normal lineup.
- 13.8 kv Bus A lockout has occurred five minutes ago.
- The misc. diesel generator failed to start.

What is the source of power for the YS1, 208/120 VAC Distribution Panel?

- a. The SCI-UPS battery charger through the SCI-UPS inverter.
- b. The SCI-UPS battery through the SCI-UPS inverter.
- c. 480 Volt Bus E4 through the SCI-UPS regulated transformer.
- d. 480 Volt Bus F4 through the SCI-UPS regulated transformer.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	2	
	K/A#	063-K4.02	
	Importance Rating	2.9	
Proposed Question: 89 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Deenergizing RPS will trip the reactor. b. RCP DC oil pumps are not running. d. Battery Charger 1PN does not have power.			
Technical Reference(s): DB-OP-02521		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-121-09K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question): Must analyze plant conditions and determine available power sources.			

Question: 89

The following plant conditions exist:

- The plant is at 100% power.
- A lockout of 4160 VAC Bus C1 occurs.

Which one of the following actions should be completed to maximize available battery life?

- a. Deenergize RPS Channels 1 and 3.
- b. Lockout the DC oil pumps for RCP 1-1 and RCP 2-2.
- c. Transfer Panel YAU from Inverter YVA to Panel YAR.
- d. Place Battery Charger 1PN in service as Battery Charger 1P.

Answer:

- c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	3	
	K/A#	005-K6.03	
	Importance Rating	2.5	

Proposed Question: 90
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- Below minimum NPSH for an RCP.
- DHP 1 is aligned in the LPI mode.
- HPI pump is used last.

Technical Reference(s): DB-OP-02527

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-GOP-127-02K

Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)
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Question History	Previous NRC Exam _____ Previous Quiz / Test _____
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Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>
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10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____
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Comments (Why is it an upper level question):
Must determine operational mode and applicable actions that can be taken.

Question: 90

The following plant conditions exist:

- Plant cooldown is in progress using DH Pump 2.
- RCS temperature is 210°F.
- DH14A, DH CLR2 OUTLET, fails closed.

Which one of the following would be the PREFERRED method to re-establish cooling to the RCS?

- a. Start an RCP to provide cooling through the SGs.
- b. Place DH Pump 1 in service on the RCS.
- c. Start HPI Pump 2 and inject water from the BWST.
- d. Locally control DH14A to maintain RCS temperature.

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	3	
	K/A#	008-K3.03	
	Importance Rating	4.1	
Proposed Question: 91 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./b./d. On a loss of CCW, the reactor is tripped (Mode 3) and RCPs are stopped (natural circ).			
Technical Reference(s): DB-OP-02523		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-123-02K			
Question Source: OLC-3900	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 2000 Quiz	Previous NRC Exam Previous Quiz / Test	_____ <u> X </u>	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u> X </u>	
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine actions to be taken based on plant conditions and determine final plant conditions.			

Question: 91

The following plant conditions exist:

- The plant is in Mode 1, operating at 82% power.
- CCW Pump 1-3 is OOS for bearing replacement.
- CCW Pump 1-1 breaker has been racked out for an inspection.
- Tech. Spec. 3.7.3.1 (CCW) has been entered.
- The following symptoms have been noted in the CTRM:
 - Annunciator (11-5-B) CCW PMP 2 FLOW LO
 - Computer Alarm (Q116) CC PMP MTR TRBL (TRIP)
 - Computer Alarm (Z120) CC PMP 2 (OFF)

Assuming that all efforts to correct this situation fail, choose the final condition that the plant will be placed in, after DB-OP-02523, CCW Malfunctions, has been implemented.

- a. Mode 1, 72% RTP
- b. Mode 3, with forced RC flow
- c. Mode 3, with natural circulation flow
- d. Mode 1, low level limits

Answer:

c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	3	
	K/A#	076-K1.01	
	Importance Rating	3.4	
Proposed Question: 92 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a./b./d. SW 1424 fails open on a loss of air.			
Technical Reference(s): DB-OP-02528		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-304-07K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question): Must determine how SW 1424 will fail and the effect on CCW temperature.			

Question: 92

The following plant conditions exist:

- The plant is at 100% power.
- CCW Pump 1 is in service.

A loss of instrument air to SW1424, CCW Heat Exchanger 1 Temperature Control Valve, has occurred. CCW temperature will _____.

- a. rise due to SW1424 failing closed
- b. NOT change due to SW1424 failing as is
- c. lower due to SW1424 failing open
- d. control at setpoint if the auto pushbutton is depressed

Answer:

- c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	
	Group #		
	K/A#	GEN 2.1.03	
	Importance Rating	3.0	
Proposed Question: 93 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b./c./d. Needs CTRM SRO permission, not Shift Manager permission.			
Technical Reference(s): DB-OP-00100		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-502-01K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 93

Which one of the following sets of conditions is required to be met if a relief for a Reactor Operator is necessary any time other than normal shift turnover? The relief:

1. can have either an active SRO or RO license.
 2. can be the Control Room SRO if another SRO assumes the Control Room SRO position
 3. must have completed a shift turnover.
 4. must receive permission from the Shift Manager.
-
- a. 1, 2, 3
 - b. 2, 3, 4
 - c. 1, 2, 4
 - d. 1, 3, 4

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	
	Group #		
	K/A#	GEN 2.1.17	
	Importance Rating	3.5	
Proposed Question: 94			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect):			
a./c. The alarm should be announced if unexpected.			
d. Not an entry condition for an AB.			
Technical Reference(s): DB-OP-00000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination:			
None			
Learning Objective (As available): OPS-GOP-501-04K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 94

The following plant conditions exist:

- EDG 1 is tagged out for maintenance.
- Annunciator 1-6-D, C1/D1 CONTROL PWR TRBL, is locked in.

Which one of the following is the correct response if Annunciator 1-6-D reflashed?

- a. The annunciator DOES NOT have to be announced if it was previously locked in.
- b. The annunciator DOES have to be announced if the reflash was unexpected.
- c. The annunciator DOES NOT have to be announced since maintenance is being performed on EDG 1.
- d. The annunciator DOES have to be announced since it is an entry condition for Loss of AC Power Abnormal Procedure.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	
	Group #		
	K/A#	GEN 2.2.12	
	Importance Rating	3.0	
Proposed Question: 95 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Checked by DB-SC-03200. b. Checked by DB-SC-04187. c. Checked by DB-OP-03007.			
Technical Reference(s): DB-OP-03006		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-400-02K			
Question Source:	Bank # _____ Modified Bank # _____ New <u> X </u>	(Note changes or attach parent)	
Question History	Previous NRC Exam _____ Previous Quiz / Test _____		
Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u> Comprehension or Analysis _____		
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 <u> .2 </u>		
Comments (Why is it an upper level question):			

Question: 95

Performance of DB-OP-03006, Miscellaneous Instrument Shift Checks, ensures Technical Specification requirement for _____ are met.

- a. RE 4598AA and BA, Station Vent Monitors
- b. RE 1998, Failed Fuel Detector
- c. Meteorological Instrumentation
- d. Shutdown Margin

Answer:

- d.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	
	Group #		
	K/A#	GEN 2.2.27	
	Importance Rating	2.6	
Proposed Question: 96 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b./d. AFHB cannot pick up fuel from the upenders. c. Line shows using the west transfer mechanism.			
Technical Reference(s): DB-NE-06101		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-FHT-102-01K			
Question Source: OLC-4554	Bank # Modified Bank # New	_____ <u> X </u> _____	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	_____ <u> X </u>	
10 CFR Part 55 Content:	55.41 <u> .10 </u> 55.43 <u> .7 </u>		
Comments (Why is it an upper level question): Must analyze movement sheet to determine the correct sequence.			

ORIGINAL

Question: 96

A fuel assembly with a control rod in the spent fuel pool location AO3 is to be moved to the core at location HO5 using the east basket. According to DB-NE-06101, Fuel/Control Component Shuffle, the FH Director's Fuel Movement Sequence Sheet should show which one of the following?

	<u>Moved By</u>	<u>Fuel ID</u>	<u>Control Comp ID</u>	<u>Initial Location</u>	<u>Final Location</u>
a.	FSHB	NJ02QN	BAFI	E	H05
b.	MFHB	NJ01DV	C31A	E	H05
c.	SFCC	NJ039B	C35B	W	H05
d.	AFHB	NJ02QH	BAFG	W	H05

Answer:

b.

Question: 96

A fuel assembly with a control rod in the spent fuel pool location AO3 is to be moved to the core at location HO5 using the east basket.

The FH Director's Fuel Movement Sequence Sheet should show which one of the following?

	<u>Line No.</u>	<u>Moved By</u>	<u>Fuel ID</u>	<u>Control Comp ID</u>	<u>Initial Location</u>	<u>Final Location</u>
a.	1	FSHB	NJ07LX	C2TU	A03	E
	2	MFHB	NJ07LX	C2TU	E	H05
b.	1	FSHB	NJ06KT	A06Q	A03	W
	2	AFHB	NJ06KT	A06Q	W	H05
c.	1	FSHB	NJ07LX	C2TU	A03	W
	2	MFHB	NJ06KT	A06Q	W	H05
d.	1	FSHB	NJ06KT	A06Q	A03	E
	2	AFHB	NJ07LX	C2TU	E	H05

Answer:

a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	
	Group #		
	K/A#	GEN 2.3.1	
	Importance Rating	2.6	
Proposed Question: 97			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect):			
a. Skin is 50 R/year. c. Lens is 15 R/year. d. TEDE is 5 R/year.			
Technical Reference(s): DB-HP-01201		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination:			
None			
Learning Objective (As available): OPS-GOP-511-01K			
Question Source: OLC-5238	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 1996 Exam	Previous NRC Exam Previous Quiz / Test	<u> X </u> _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u> .12 </u> _____	
Comments (Why is it an upper level question):			

Question: 97

Which one of the following combinations represents the regulatory exposure limits of 10 CFR 20?

- a. - 5.0 R/year TEDE
 - 15.0 R/year to the SKIN
 - 15.0 R/year to the LENS of the eye
- b. - 5.0 R/year TEDE
 - 15.0 R/year to the LENS of the eye
 - 50.0 R/year to EXTREMITIES
- c. - 5.0 R/year to the SKIN
 - 50.0 R/year to EXTREMITIES
 - 50.0 R/year to the LENS of the eye
- d. - 15.0 R/year TEDE
 - 15.0 R/year to the EXTREMITIES
 - 50.0 R/year to the SKIN

Answer:

b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	
	Group #		
	K/A#	GEN 2.3.10	
	Importance Rating	2.9	
Proposed Question: 98			
See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. ECCS equipment will be monitored remotely. c. Communications can be done with Gai-Tronics. d. AVVs will not be needed during a LBLOCA.			
Technical Reference(s): DB-OP-02000		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-GOP-309-04K			
Question Source:	Bank # Modified Bank # New	_____ _____ <u> X </u>	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	_____ _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> _____	
10 CFR Part 55 Content:	55.41 55.43	<u> .12 </u> <u> .4 </u>	
Comments (Why is it an upper level question):			

Question: 98

A large break LOCA has occurred.

The route for closing the breakers for DH7A, DH7B, DH9A, and DH9B is required in order to _____.

- a. minimize the time spent in extremely high radiation levels
- b. verify the ECCS equipment is operating properly
- c. ensure radio contact can be maintained with the Control Room
- d. complete the route near the AVVs' remote operators in the event manual control is needed

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	3	
	Group #		
	K/A#	GEN 2.3.11	
	Importance Rating	2.7	

Proposed Question: 99
See Attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

- a. Required for inoperable REs.
- c. Required for inoperable REs.
- d. Required for inoperable REs.

Technical Reference(s): DB-OP-03011

Reference Attached: _____
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
None

Learning Objective (As available): OPS-SYS-111-09K

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

Question History	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge <u> X </u>
	Comprehension or Analysis _____

10 CFR Part 55 Content:	55.41 <u> .13 </u>
	55.43 <u> .2 </u>

Comments (Why is it an upper level question):

Question: 99

The following plant conditions exist:

- A release of the MWMT started at 0930.
- The release will be completed at 1115.
- Computer Point F201, Collection Box Out Flow to Lake, becomes inoperable at 1015.

The MWMT release can continue provided _____.

- a. at least two independent verifications of the discharge valving lineup are performed
- b. the dilution flow is manually calculated every 30 minutes
- c. at least two independent verifications of the release rate calculations are done
- d. grab samples are collected and analyzed every two hours

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #	2	
	Group #	3	
	K/A#	103-A3.01	
	Importance Rating	3.9	
Proposed Question: 100 See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Supply fan trips when the exhaust fan trips. b. Purge valves are controlled from limit switches. c. Filters are not affected by interlocks.			
Technical Reference(s): DB-OP-06503		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: None			
Learning Objective (As available): OPS-SYS-109-07K			
Question Source: OLC-4105	Bank # Modified Bank # New	<u> X </u> _____ _____	(Note changes or attach parent)
Question History 1997 Exam	Previous NRC Exam Previous Quiz / Test	<u> X </u> _____	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> _____	
10 CFR Part 55 Content:	55.41 <u> .7 </u> 55.43 _____		
Comments (Why is it an upper level question):			

Question: 100

Which one of the following is the reason interlocks are provided for the Containment Purge System?

- a. Start the supply fan when the exhaust fan trips.
- b. Prevent damage to the containment purge valves.
- c. Prevent reverse flow through the containment purge exhaust filters.
- d. Prevent simultaneous purging of the containment and penetration rooms.

Answer:

d.