

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	001-A3.05	
	Importance Rating		3.5
Proposed Question: See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. All safety rods out does not cause an asymmetry fault alarm. c. Asymmetry fault does not come from RPI. d. All safety rods out indication does not input to asymmetry fault.			
Technical Reference(s): DB-OP-06402.02		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination:			
Learning Objective (As available): OPS-SYS-501-04K			
Question Source: OLC-6688	Bank # Modified Bank # New	<u> X </u> <u> </u> <u> </u>	(Note changes or attach parent)
Question History	Previous NRC Exam Previous Quiz / Test	<u> </u> <u> X </u>	
Question Cognitive Level:	Memory or Fundamental Knowledge Comprehension or Analysis	<u> X </u> <u> </u>	
10 CFR Part 55 Content:	55.41 55.43	<u> X </u> <u> </u>	
Comments (Why is it an upper level question):			

Question:

The following plant conditions exist:

- A reactor startup is in progress
- Group 4 rods are being withdrawn
- Indication for Rod 4-1 is erratic
- An “asymmetry fault” alarm is illuminated on the rod control panel

Which one of the following is the cause for the rod alarm?

There is erratic indication from Group 4, Rod 1 . . .

- a. relative position indication (RPI) causing a loss of “all safety rods out” indication.
- b. absolute position indication (API) causing a 6.5% (9 inch) asymmetric rod fault.
- c. relative position indication (RPI) causing a 6.5% (9 inch) asymmetric rod fault.
- d. absolute position indication (API) causing a loss of “all safety rods out” indication.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	003-A2.02	
	Importance Rating		3.9
Proposed Question: See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. With RCP breaker closed, FW will not reratio. b. Temperature will be low in Loop 1 due to decreased flow. d. The power level is not high enough for a reactor trip. RPS still has indication four RCPs are on.			
Technical Reference(s): DB-OP-02515.01		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination:			
Learning Objective (As available):			
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> X </u> 55.43 _____		
Comments (Why is it an upper level question): The examinee must diagnose that RCP 1-1 has sheared a shaft and the affect on the plant.			

Question:

The following plant conditions exist:

- Reactor power is 82% with a power increase in progress
- The following alarm actuate:
 - 4-2-C HOT LEG TOTAL FLOW LO
 - 4-3-B LOOP 1 HOT LEG FLOW LO
- All four RCP breakers indicate closed, with the following current values:
 - RCP 1-1 = 160 amps
 - RCP 1-2 = 230 amps
 - RCP 2-1 = 260 amps
 - RCP 2-2 = 260 amps

Which one of the following is a correct description of the plant's response to the above conditions?

- a. Steam Generator 1 will be underfed and Steam Generator 2 will be overfed.
- b. The reactor will trip due to high hot leg temperature in Loop 1.
- c. Steam Generator 1 will be overfed and Steam Generator 2 will be underfed.
- d. The reactor will trip due to the RPS power to pump trip.

Answer:

- c.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	004-A4.01	
	Importance Rating		3.9
Proposed Question: See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): c. Power is at 100% and rods should not be pulled. d. Adding demin water will reduce rod index and imbalance further. e. Reducing power will not correct rod index or imbalance.			
Technical Reference(s): Core Operating Limits Report		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: COLR			
Learning Objective (As available): OLC-GOP-202-05S			
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> X </u>		
Comments (Why is it an upper level question): The examinee must be able to predict rod motion and imbalance during boron additions. This question is SRO level due to addressing Tech. Specs.			

Question:

The following plant conditions exist:

- Effective Full Power Days is 290
- A power increase to 100% has just occurred
- Final rod index is 270
- Excore imbalance is indicating negative 13.

Which one of the following actions should be taken to prevent exceeding limits in the Core Operating Limit Report?

- a. Add boron to increase rod index and reduce the negative imbalance.
- b. Manually withdraw control rods to increase rod index and reduce the negative imbalance.
- c. Add demin water to increase rod index and reduce the negative imbalance.
- d. Reduce reactor power to increase rod index and reduce the negative imbalance.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	013-K2.01	
	Importance Rating		3.8
Proposed Question: See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. Actuation Channel 2 only has a half trip. c. Actuation Channel 1 will not trip, only SFAS Channel 1 has a trip input. d. SFAS Channel 2 is deenergized causing a half trip.			
Technical Reference(s): E-16, Sheet 1		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination:			
Learning Objective (As available):			
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> X </u> 55.43 _____		
Comments (Why is it an upper level question): The examinee will have to diagnose the affects a loss of power in one SFAS channel has on another channel in test.			

Question:

The following plant conditions exist:

- Plant is in Mode 1.
- DB-SC-03110, SFAS Channel 1 Functional Test, is in progress with the following components out of normal configuration:
 - Test Trip Bypass Switch in reactor coolant pressure position
 - Test Function Switch in the reactor coolant position
 - BA105, RC pressure low trip bistable, is tripped

Essential 120 VAC Instrument Bus Y2 has deenergized.

Which one of the following describes the response of the SFAS System?

- a. SFAS Actuation Channel 2 will trip due to a half trip being present from the testing.
- b. SFAS Actuation Channel 2 will have a half trip and SFAS Actuation Channel 1 will have no trip present due to testing.
- c. SFAS Actuation Channel 1 will trip due to a half trip being present from the testing.
- d. SFAS Actuation Channel 1 will have a half trip and SFAS Actuation Channel 2 will have no trip present due to testing.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	013-A1.01	
	Importance Rating		4.2
Proposed Question: See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): b. Pressure is above maximum per Figure 1, HPI shall be throttled. c. HPI shall not be throttled less than 35 gpm per Specific Rule 2. d. Use of only one HPI pump to initiate full HPI flow should not be aligned if two are available.			
Technical Reference(s): DB-OP-02000.05, C-1		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination: Provide Figure 1 of DB-OP-02000.			
Learning Objective (As available): OPS-GOP-301-03S			
Question Source: OLC-4380	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> X </u> 55.43 _____		
Comments (Why is it an upper level question): The examinee must diagnose a loss of SCM require HPI initiation.			

Question:

Given the following conditions:

- A loss of coolant accident has occurred
- SFAS has initiated on low RCS pressure
- RCS TSAT meters indicate 5°F

What is the required mode of operation for HPI?

- a. HPI should be throttled to prevent exceeding the maximum P/T for cooldown limit line on Figure 1.
- b. Full HPI should be initiated with both pumps.
- c. HPI should be throttled to less than 35 gpm per pump.
- d. Full HPI should be initiated with one pump.

Answer:

- b.

Question:

Given the following conditions:

- A loss of coolant accident has occurred
- SFAS has initiated on low RCS pressure
- RCS temperature is 300°F
- RCS pressure is 1510 psig

What is the required mode of operation for HPI?

- a. HPI should be throttled to prevent going above the maximum P/T for cooldown limit line on Figure 1.
- b. Full HPI should be initiated with both pumps.
- c. HPI should be throttled to less than 35 gpm per pump.
- d. Full HPI should be initiated with one pump to prevent going below the maximum P/T for cooldown limit line on Figure 1.

Answer:

- a.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	014-K4.06	
	Importance Rating		3.7
Proposed Question: See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): a. 45% is less than what is require per Tech. Specs. b. Control rod position is to be verified with zone reference. c. The relative indicator is the one failed.			
Technical Reference(s): T.S. 3.1.3.3		Reference Attached: _____ (Attach if not previously provided)	
Proposed references to be provided to applicants during examination:			
Learning Objective (As available): OPS-SYS-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 _____ Comprehension or Analysis <u> X </u>		
10 CFR Part 55 Content:	55.41 _____ 55.43 <u> X </u>		
Comments (Why is it an upper level question): The examinee must be able to determine which position indicator is failed RPI or API. This question is SRO level due to addressing T.S.			

Question:

The plant is at 100% power when Alarm 5-6-E CRD SEQ FAULT alarms.

Which one of the following would be the correct action to take for the failed rod position indication?

- a. Reduce power to $\leq 45\%$ and restore failed indication.
- b. Verify control rod position on the absolute position indicators and maintain current power.
- c. Verify control rod position on the relative position indicator and reduce power to 60%.
- d. Verify control rod position on the zone reference lights and maintain current power level.

Answer:

- d.

Question:

Which one of the following describes the effect of a loss of compensating voltage on the intermediate range indication?

- a. Results in an indicated neutron level lower than actual.
- b. Results in an indicated neutron level higher than actual.
- c. Results in a greater indicated startup rate (SUR).
- d. Results in a decrease in the amount of overlap between intermediate and source range nuclear instruments.

Answer:

- b.

EXAMINATION OUTLINE CROSS-REFERENCE:	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	017-K4.01	
	Importance Rating		3.7
Proposed Question: See Attached			
Proposed Answer: See attached			
Explanation (Why the distractors are incorrect): With natural circ., the procedure requires the Thot indication be used for determining SCM.			
Technical Reference(s): DB-OP-02000.05, Step 4.11 <div style="float: right; text-align: right;"> Reference Attached: _____ (Attach if not previously provided) </div>			
Proposed references to be provided to applicants during examination: DB-OP-02000.05, Figure 1			
Learning Objective (As available):			
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> X </u> 55.43 _____		
Comments (Why is it an upper level question): Has to interpret P/T with the steam table.			

Question:

The following plant conditions exist:

- A LOCA has occurred
- The reactor has tripped
- Both cold leg temperatures are 465°F
- Both SGs are at 470 psig
- Subcooling margin meters are deenergized

Which one of the following RCS pressures and temperatures provide indication of adequate subcooling margin?

- a. 900 psig using hot let temperature of 495°F
- b. 900 psig using incore temperature of 495°F
- c. 700 psig using hot let temperature of 480°F
- d. 700 psig using incore temperature of 480°F

Answer:

- a.