

**WRITTEN RO EXAM
WITH ANSWERS**

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		1	
Group #		1	
K/A #		011.EA1.13	
Importance Rating		4.1	

Proposed Question:

3. Unit 1 is operating at 100% power when a Large Break LOCA occurs. Five minutes later, the Primary Operator notices the following:

- ECW Pump 1B is running
- ECW Train 1B Blowdown Isolation Valve is closed
- ECW Train 1B Screen Wash Booster Pump is running
- ECW Pump 1B Discharge Valve indicates intermediate position (red AND green lights lit)
- ECW Trains A and C are operating normally
- The yard watch reports the ECW Pump 1B Discharge Valve is 50% open

Which ONE of the following is true concerning ECW Train 1B?

- A. Safety Injection actuation has blocked the trip of the pump to allow the train to operate. The pump will continue to run even if the discharge valve is partially closed.
- B. Safety Injection Train B was reset prior to the discharge valve reaching full open. The discharge valve will open fully when the control switch is taken to OPEN.
- C. Safety Injection Train B did not actuate. Manually actuating Safety Injection will open the discharge valve fully.
- D. ECW Pump 1B did not receive a start signal from the sequencer. The pump was running prior to the Large Break LOCA.

Proposed Answer: A

Explanation:

Technical Reference: 9E-EW01-01 Rev 8, 9E-EW04-02 Rev 5

Proposed references to be provided to applicants during examination:

Learning Objective: 91193

Question Source: Bank # STP-19 Modified
New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		1	
Group #		1	
K/A #		027.AK2.03	
Importance Rating		2.6	

Proposed Question:

6. The pressurizer master pressure controller has failed to zero output in AUTO.

With no operator action RCS pressure will:

- A. Decrease to the Reactor Trip setpoint.
- B. Increase to the Reactor Trip setpoint.
- C. Stabilize at Program setpoint
- D. Cycle at the PORV setpoint.

Proposed Answer: D

Explanation:

The master controller will close both spray valves and turn on all heaters, causing pressure to increase. PORV PCV-456 is controlled by a bistable not the master controller so that when pressure reaches 2235 psig it will open and control pressure.

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-674 Modified
New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 7
55.43

Comments:

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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Step 7 continued from previous page.

- ___ a. DETERMINE required core exit temperature based on ruptured SG pressure (QDPS MAX QUAD T/C AVG):

RUPTURED SG PRESSURE (PSIG)	CORE EXIT TEMPERATURE (°F)	
1285	533	[518]
1250	529	[514]
1200	524	[509]
1150	517	[502]
1100	512	[497]
1050	505	[490]
1000	499	[484]
950	492	[477]
900	486	[471]
850	478	[463]
800	471	[456]
750	463	[448]
700	454	[439]
650	446	[431]
600	437	[422]
550	427	[412]
500	416	[401]
450	403	[388]

Step 7 continued on next page.

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		1	
Group #		1	
K/A #		040.AK3.04	
Importance Rating		4.5	

Proposed Question:

8. OPOP05-EO-EO20, Faulted Steam Generator Isolation, step 4 ensures isolation of Main and Auxiliary Feedwater to the affected SG(s).

Which ONE of the following is the reason for the actions of this step?

- A. Maintains at least two loops available for cooldown.
- B. Maximizes cooldown capability of the non-faulted SG(s) following a feedline break.
- C. Allows identification of the faulted SG(s).
- D. Allows identification of a tube rupture in the faulted SG(s).

Proposed Answer: B

Explanation:

Technical Reference: OPOP05-EO-EO20 Rev 3; 148--00039, WOG ERG E-2 Faulted SG Isolation Rev 1C, page 32

Proposed references to be provided to applicants during examination:

Learning Objective: 81264

Question Source: Bank # STP-2 Modified
New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10
 55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		1	
Group #		1	
K/A #		E04.EK2.1	
Importance Rating		3.5	

Proposed Question:

16. Unit 1 is operating at 100% power with all systems in their normal lineup. A small RCS leak develops in the Chemical and Volume Control System (CVCS) with the following Control Room indications:

- Pressurizer level indicates 50% and is decreasing
- RCS pressure indicates 2220 psig and is stable
- Containment pressure is normal
- LETDN HX OUTLET PRESSURE PI-0135 indicates 0 psig
- PRT PRESS HI alarm is illuminated
- LETDN HX OUTL FLOW HI/LO alarm is illuminated
- ICS Points (2) CVCS LTDN AREA TEMP TRN HI are in alarm

Considering these indications, which ONE of the following AUTOMATIC actions has taken place?

- A. TCV-0143, Letdown Temperature Divert Valve, positioned to the VCT.
- B. MOV-0023/0024, Letdown Line Containment Isolation Valves closed.
- C. FV-0011, Letdown Header Orifice Isolation Valve closed.
- D. PCV-0135, Letdown Pressure Control Valve opened.

Proposed Answer: B

Explanation:

MOV-0023/24 are designed to automatically close on high room temperature for high energy line break accident (HELBA) protection. The question stem indicates there is a small RCS leak present in the CVCS, however, there are no direct indications of leak location. The student must determine leak location and corresponding automatic actions by evaluating the given indications relative to the answers.

Technical Reference: 0POP04-CV-0004, Rev 2, Step 1 RNO d.; Logic 9-Z-42410, Rev 8

Proposed references to be provided to applicants during examination:

Learning Objective: 70174

Question Source: Bank # STP-22 Modified
New

Question History: Last NRC Exam 6/30/98

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

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

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		1	
Group #		1	
K/A #		E05.EA1.1	
Importance Rating		4.1	

Proposed Question:

18. A complete loss of all feedwater has occurred on Unit 1 in conjunction with a feedline break inside containment on SG A. The following plant conditions currently exist:

- RCS Pressure 1900 psig and INCREASING
- Core Exit TCs 578 °F and STABLE
- RCS T_{HOT} 575 °F and STABLE
- RCS T_{avg} 547 °F and STABLE
- RCS T_{COLD} 520 °F and STABLE
- Pzr Level 45% and SLOWLY INCREASING
- Containment Pressure 12 psig and DECREASING
- Containment Temperature 170 °F and STABLE
- SG NR Levels A=0%, B=0%, C=0%, D=0%
- SG WR Levels A=0%, B=30%, C=20%, D=25%

0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink, has been entered and RCS Bleed and Feed has just been established. A report is received in the Control Room that the Turbine Driven Auxiliary Feedwater Pump is recovered and ready for use.

Which ONE of the following actions should be taken under these circumstances?

- A. Ensure total feed flow to the intact SGs is > 576 gpm.
- B. Feed SG A, B, C, AND D at a rate not to exceed 100 gpm until T_{HOT} is less than 550 °F.
- C. Feed SG A, B, C, OR D at a rate not to exceed 100 gpm until WR level reaches 73%.
- D. Maintain bleed and feed until T_{HOT} is less than 550 °F, then feed SG A, B, C, OR D.

Proposed Answer: A

Explanation:

Technical Reference: 0POP05-EO-FRH1, R11

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-225 Modified
New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10
 55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		1	
Group #		2	
K/A #		037.AA1.08	
Importance Rating		3.3	

Proposed Question:

21. In response to Charging flow unexpectedly GREATER THAN letdown flow coincident with increasing secondary system radiation, 0POP04-RC-0004, Steam Generator Tube Leakage, was implemented. 0POP04-RC-0004 directs that if VCT level cannot be maintained >15% by ...

- A. auto or manual makeup with CCP suction aligned to RWST, then trip the RX and initiate SI.
- B. auto or manual makeup with CCP suction aligned to RWST, then increase letdown.
- C. auto or manual makeup with CCP suction aligned to VCT, then trip the RX and initiate SI.
- D. auto or manual makeup with CCP suction aligned to VCT, then shift CCP suction to RWST.

Proposed Answer: C

Explanation:

The reactor should be tripped if VCT level cannot be maintained via normal makeup.

Technical Reference: 0POP04-RC-0004, Steam Generator Tube Leakage, step 6

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** 10
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		<u>1</u>	<u> </u>
Group #		<u>2</u>	<u> </u>
K/A #		<u>061.G2.3.4</u>	
Importance Rating		<u>2.5</u>	<u> </u>

Proposed Question:

22. Area Radiation Monitor RE-8052 in the In-Core Instrumentation Room is alarming HIGH at 1200 mrem/hr. Local surveys have confirmed that this radiation level is accurate. Due to his expertise, Jim Neutron, who was a contractor until he was hired by STP a few months ago, will need to enter the area to conduct repairs. Jim is 52 years old, has a lifetime TEDE of 40 rem to date, and has already accumulated 3.6 rem TEDE this year, 360 mrem of which was received at STP. The federal exposure limits imposed by 10 CFR Part 20 require that Joe's stay time for the job must not exceed _____ without authorization for a Planned Special Exposure.

- A. 0 minutes
- B. 20 minutes
- C. 57 minutes
- D. 70 minutes

Proposed Answer: D

Explanation:

The federal limit is 5 rem per year, so Jim has 1400 mrem left; so he must be limited to 70 minutes (1400 mrem).

Technical Reference: 10 CFR 20.1201

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** 10, 11, 12
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		1	
Group #		2	
K/A #		E15.EK1.3	
Importance Rating		2.8	

Proposed Question:

26. Under what condition is entry into OPOP05-EO-FRZ2, "Response to Containment Flooding," warranted?

- A. Containment water level is 68 inches.
- B. Containment Radiation is greater than 2.0 + 03E R/HR.
- C. Containment Critical Safety function tree is in an Orange Condition.
- D. Containment Pressure is greater than 9.5 psig.

Proposed Answer: C

Explanation:

Technical Reference: POP05-EO-FRZ2

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-1068 Modified
New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10
 55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		1	
Group #		2	
K/A #		E08.EK3.3	
Importance Rating		3.7	

Proposed Question:

27. Procedure 0POP05-EO-FRP1, "Response to Imminent Pressurized Thermal Shock Condition," has a step to terminate safety injection flow. However, if the safety injection termination criteria are not satisfied, a reactor coolant pump should be started. What is the reason for starting an RCP in this condition?

- A. Establishes forced flow to control the cooldown rate.
- B. Allows RCS depressurization via the pressurizer spray nozzle.
- C. Equalizes steam generator pressures to allow cooldown of all 4 loops.
- D. Mixes the incoming SI water and the RCS water to raise the temperature of the water entering the downcomer.

Proposed Answer: D

Explanation:

Technical Reference: POP05-EO-FRP1 background document

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-1046 Modified
New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		<u>2</u>	<u> </u>
Group #		<u>1</u>	<u> </u>
K/A #		<u>039.A2.01</u>	<u> </u>
Importance Rating		<u>3.1</u>	<u> </u>

Proposed Question:

44. The Reactor, which was operating at 92%, has tripped on low PZR Pressure due to a large break LOCA. All systems are responding to the LOCA as designed. Five seconds after the LOCA initiated, the following parameters are indicated:

Tave = 575°F

SG Pressure = 1125 psig

PZR Pressure = 1003 psig

Containment Pressure = 2.9 psig

Under these conditions, the state of the main steam system is:

- A. MSIV's are closed on High Containment Pressure and SG PORV's are relieving SG pressure.
- B. MSIV's are closed on Low SG Pressure but SG PORV's and SG Safeties remain closed.
- C. MSIV's are open and Steam Dump Valves are passing steam to the condenser.
- D. MSIV's are open but Steam Dumps are shut since they have not yet armed.

Proposed Answer: C

Explanation:

MSIV's have not received a closure signal yet, SD's armed when the Turbine tripped on interlock with the RX trip, and Tave is currently above Tref, which places a demand on the SD's to pass steam.

Technical Reference: LOT202.02

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** 5
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		2	
Group #		1	
K/A #		062.G2.4.6	
Importance Rating		3.1	

Proposed Question:

49. Given the following:

- A LOCA has occurred on Unit 1.
- OPOP05-EO-EO00, Reactor Trip or Safety Injection is being implemented.
- Containment pressure is 13 psig.
- Power is lost to 4.16 KV Bus E1A.
- RCS pressure is 1520 psig.
- The highest critical safety function is an ORANGE path on Containment.
- All systems responded normally to actuation signals.

Which ONE of the following describes the action that should be taken regarding Reactor Coolant Pump (RCP) trip criteria and the reason for that action?

- A. The RCPs should be stopped per Adverse Containment criteria.
- B. The RCPs should be stopped because RCP cooling is lost.
- C. The RCPs should NOT be stopped because RCP trip criteria does NOT apply in OPOP05-EO-FRZ1, Response to High Containment Pressure.
- D. The RCPs should NOT be stopped because RCS pressure is above the RCP trip criteria setpoint.

Proposed Answer: B **Explanation:****Technical Reference:** OPOP05-EO-EO00 **Proposed references to be provided to applicants during examination:****Learning Objective:** _____

Question Source: Bank # STP-848 Modified
New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

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

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		<u>2</u>	<u> </u>
Group #		<u>1</u>	<u> </u>
K/A #		<u>064.A1.03</u>	<u> </u>
Importance Rating		<u>3.2</u>	<u> </u>

Proposed Question:

51. The #11 ESF Diesel Generator is undergoing a surveillance test and is currently paralleled with off-site power with a load of 5400 KW and voltage at 4160v. If the Control Room operator were to go to RAISE on the DG GOVERNOR Control switch, which of the following would reach a limit first?

- A. Frequency
- B. Voltage
- C. Reactive Power (kVAR)
- D. True Power (KW)

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** 8
55.43 _____

Comments:

Changed "5400 MW" to "5400 KW" in question stem during administration of exam when student recognized and correctly pointed out that MW was a typo; all students made aware of correction during exam; made correction to exam file before saving in ADAMS.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	<u>2</u>	<u> </u>
	Group #	<u>2</u>	<u> </u>
	K/A #	<u>016.K1.09</u>	<u> </u>
	Importance Rating	<u>3.7</u>	<u> </u>

Proposed Question:

58. Unit 2 is in the process of a normal shutdown and cooldown for refueling. Currently:

- PZR Pressure = 1850 psig
- Steam Line Pressure = 725 psig
- Containment Pressure = 0.2 psig

Some minutes later, a pipe rupture in containment results in a Steam Line Isolation. At the moment of Steam Line Isolation actuation, the above parameters had reached the following values:

- PZR Pressure = 1213 psig
- Steam Line Pressure = 325 psig
- Containment Pressure = 2.2 psig

Steam Line Isolation actuation was due to:

- A. Low PZR Pressure
- B. Low Steam Line Pressure
- C. High Containment Pressure
- D. High Rate of Change of Steam Line Pressure

Proposed Answer: D

Explanation:

Low P_{PZR} and Low P_{STM} signals are blocked due to the cooldown below 1985#, and Pcont did not exceed 3psig; Low P_{STM} block also sets the Stm Line Isolation signal to high rate instead of low pressure, therefore it is the only reasonable cause.

Technical Reference: LOT201.22

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 7
 55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	<u>2</u>	<u> </u>
	Group #	<u>2</u>	<u> </u>
	K/A #	<u>035.K5.13</u>	
	Importance Rating	<u>3.4</u>	<u> </u>

Proposed Question:

59. Unit 2 is initially at 80% power with Rod Control in Automatic. Turbine load is slowly increased to 90% power. When compared with the plant conditions at 80% power, which of the following represents the expected FINAL plant conditions assuming no RCS boron changes are made during the power increase?

	Steam Pressure	Control Rods	Tavg
A.	LOWER	HIGHER	HIGHER
B.	LOWER	HIGHER	LOWER
C.	HIGHER	LOWER	HIGHER
D.	HIGHER	LOWER	LOWER

Proposed Answer: A

Explanation:

Due to Tavg programming, Rods will step out with a power increase in order to raise Tavg and mitigate somewhat the pressure drop in the SG.

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** 5
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		<u>2</u>	<u> </u>
Group #		<u>2</u>	<u> </u>
K/A #		<u>041.A2.03</u>	<u> </u>
Importance Rating		<u>2.8</u>	<u> </u>

Proposed Question:

60. While Unit 2 is operating at 85%, a leak in the Instrument Air System causes IAS pressure to drop, "IAS HDR PRESS LO" annunciator alarms, but the compressors are able to maintain IAS header such that the air pressure at the Steam Dumps is 10 psig below the IAS HDR PRESS LO alarm setpoint. In this condition, the status of the Steam Dumps is:

- A. They are available for controlled actuation and are currently shut.
- B. They are available for controlled actuation and have actuated full open.
- C. They are unavailable for controlled actuation and have failed shut on low IAS pressure.
- D. They are unavailable for controlled actuation and have failed open on low IAS pressure.

Proposed Answer: A

Explanation:

Steam Dumps require 55 psig from the IAS, and the alarm comes in at 90 psig, so there is still sufficient IAS pressure for Steam Dump actuation if necessary.

Technical Reference: LOT202.09, 0POP09-AN-08M3

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** 7, 8
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		<u>2</u>	<u> </u>
Group #		<u>2</u>	<u> </u>
K/A #		<u>055.K1.06</u>	<u> </u>
Importance Rating		<u>2.6</u>	<u> </u>

Proposed Question:

61. RT-8027, Condenser Air Removal System radiation monitor, monitors the CARS discharge _____ and provides _____ automatically when the HIGH Alarm setpoint is reached.

- E. directly to the atmosphere; audible alarm in the Control Room and closure of the CARS pump suction valves
- F. directly to the atmosphere; audible alarm in the Control Room, but no control function
- G. to the Unit Vent Stack; audible alarm in the Control Room and closure of the CARS pump suction valves
- D. to the Unit Vent Stack; audible alarm in the Control Room, but no control function

Proposed Answer: D

Explanation:

Technical Reference: LOT202.41 Table 1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified
New X

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 11, 13
55.43 _____

Comments:

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

Proposed Question:

72. Given the following conditions on Unit 1:

- Reactor power is being maintained at 30%
- SGFPs 11 and 12 are in service
- All controls are in automatic

SGFP 12 trips due to a loss of lube oil and 0POP04-FW-0002, Steam Generator Feed Pump Trip is entered. The SUFP has automatically started.

Which ONE of the following describes the immediate operator actions that should be taken?

- A. 1) Check SGFPs – Required number running.
2) Check SGFP Master Controller - OPERABLE.
- B. 1) Start a standby FW Booster Pump.
2) Check SG Feedwater Regulating Valves responding in AUTOMATIC.
- C. 1) Check SGFP Master Controller - OPERABLE.
2) Check SG Feedwater Regulating Valves responding in AUTOMATIC.
- D. 1) Place Low Power Feedwater Regulating Valves in MANUAL.
2) Check SGFPs – Required number running.

Proposed Answer: A

Explanation:

Technical Reference: 0POP04-FW-0002 Rev 6, Steps 1-2

Proposed references to be provided to applicants during examination:

Learning Objective: 92108

Question Source: Bank # STP-110 Modified
New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10
 55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		3	
Group #		4	
K/A #			G2.4.7
Importance Rating		3.1	

Proposed Question:

74. 0POP05-EO-EO30, Steam Generator Tube Rupture, is being performed in response to a tube rupture on SG 1A.

The cooldown has just been completed but the target temperature value selected by the crew was 50°F higher than that stipulated in the procedure.

This error could result in which ONE of the following conditions?

- A. Filling the Pressurizer solid during the subsequent depressurization.
- B. Decrease the time for termination of the primary to secondary leakage.
- C. Decrease in pressure of the ruptured SG with increased leakage from the RCS.
- D. Loss of RCS subcooling before RCS and ruptured SG pressures are equalized.

Proposed Answer: D

Explanation:

- A. Incorrect - The pressurizer being overfilled is a symptom of overcooling the RCS instead of undercooling.
- B. Incorrect - The time will not decrease, the undercooling would cause a situation where the leakage cannot be stopped due to loss of subcooling before the pressures are equal.
- C. Incorrect - The situation given will result in the leakage not stopping causing steam generator overfill and pressure increase to RCS pressure.
- D. Correct - To stop primary to secondary leakage the RCS pressure must be decreased to a value equal to the ruptures S/G pressure. If cooldown is stopped too soon the required subcooling will be lost before RCS & S/G pressures are equalized.

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-654 Modified
New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10
55.43

Comments:

**WRITTEN SRO EXAM
WITH ANSWERS**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	1
	Group #	_____	1
	K/A #	E05.EA2.1	
	Importance Rating	_____	4.4

Proposed Question 76:

Unit 2 is in a Train B Outage when a reactor trip occurs followed by a loss of offsite power (LOOP). The operators have just completed 0POP05-EO-EO00, "Reactor Trip and Safety Injection," including Addendum 5.

Current conditions are:

- Containment Pressure: 5.5 psig
- Containment Radiation: 10.1 R/hr
- Core Exit Thermocouples: 584°F
- RCS Pressure: 1352 psig
- SB A WR Level: 31%
- SGs B, C, and D WR Levels: 5 - 8%
- AFW Pump 21 Failed to start
- Total AFW flow is approximately 500 gpm and cannot be increased

What actions are required?

- A. Immediately transition to Procedure 0POP05-EO-FRH1, "Response to Loss of Secondary Heat Sink," and establish feed and bleed.
- B. Immediately transition to Procedure 0POP05-EO-EO10, "Loss of Reactor or Secondary Coolant," and depressurize the intact Sgs to 1000 psig.
- C. Immediately transition to Procedure 0POP05-EO-FRH1, "Response to Loss of Secondary Heat Sink," and dump steam to the condenser to reduce SB pressures.
- D. Perform Procedure 0POP05-EO-FRH1, "Response to Loss of Secondary Heat Sink," concurrently with Procedure 0POP05-EO-EO10, "Loss of Reactor or Secondary Coolant."

Proposed Answer: A

Explanation:

Technical Reference: POP01-ZA-0018, POP05-EO-FRH1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-1092 Modified _____
New _____

Question History: Last NRC Exam Class 13

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

10 CFR Part 55 Content: 55.41
 55.43 5

Comments: _____

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	1
	Group #	_____	2
	K/A #	APE 037.AA2.12	
	Importance Rating	_____	4.1

Proposed Question 78:

Unit 1 plant parameters:

- Letdown flow is 125 gpm.
- Tave is STABLE.
- Pressurizer level is STABLE.
- Seal injection flow to each RCP is 8 gpm.
- Seal leakoff flow from each RCP is 3 gpm.
- Charging flow is 115 gpm as indicated on FI-0205A.
- MOV-001A, PZR PORV Block Valve has a 0.5 gpm packing leak.
- Leakage from known sources other than S/G leakage is 8.5 gpm.
- Unidentified leakage is 0.6 gpm.
- SG 1A has a primary-to-secondary leak

Based on the above conditions, what actions are required to be taken and why?

- A. Continue plant operations, unidentified leakage is less than 1 gpm.
- B. Continue plant operations, identified leakage is less than 10 gpm.
- C. Commence a plant shutdown, primary-to-secondary leakage through 1 steam generator greater than or equal to 150 gallons per day.
- D. Commence a plant shutdown, leakage exceeds pressure boundary leakage.

Proposed Answer: C **Explanation:**

SG 1A has a primary-to-secondary leak rate of 0.4 gpm (576 gpd) and this exceeds the TS limit of 150 gpd.

Technical Reference: TS 3.4.6.2 **Proposed references to be provided to applicants during examination:****Learning Objective:** _____

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** _____
55.43 2

Comments: _____

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	1
	Group #	_____	2
	K/A #	APE068.G2.4.11	
	Importance Rating	_____	4.6

Proposed Question 79:

Unit 2 has experienced a reactor trip and Safety Injection. While performing 0POP05-EO-EO00, Reactor Trip or Safety Injection, a fire breaks out in CP-004. The Control Room must be evacuated.

Which ONE of the following must be performed when the Control Room personnel arrive at the Aux Shutdown Panel?

- A. 0POP05-EO-EO00 should be continued where left off, and 0POP04-ZO-0001, Control Room Evacuation, initiated when 0POP05-EO-EO00 is completed.
- B. 0POP05-EO-EO00 and 0POP04-ZO-0001, Control Room Evacuation, are to be performed concurrently, to the degree possible.
- C. 0POP04-ZO-0001, Control Room Evacuation, must be performed exclusively.
- D. 0POP04-ZO-0001, Control Room Evacuation, is to be performed, unless a CSF Orange or Red condition exists. At which time implementation of the associated FRG is required.

Proposed Answer: C

Explanation:

0POP04-ZO-0001, Control Room Evacuation, must be performed exclusively.

Technical Reference: 0POP04-ZO-0001, Control Room Evacuation and
0POP01-ZA-0018, EOP usage

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-1012 Modified _____
New _____

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** _____
55.43 5

Comments: _____

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	<u>2</u>
	Group #	_____	<u>1</u>
	K/A #	<u>063A2.01</u>	
	Importance Rating	_____	<u>3.2</u>

Proposed Question 80:

Unit 2 is in Mode 2. Electrical Maintenance personnel identify the cause of a DC ground alarm as a problem in Switchboard E2A11, Cubicle 4A, "Train A RX Trip SWGR Control Power." The system engineer determines that the ground on the load cubicle disables Train 'R' Reactor Trip Breaker (RTR) and Train 'R' Reactor Trip Bypass Breaker (BYR) shunt trip circuits only. What action(s) is the SRO required to complete for Unit 2?

- A. Declare the effected breakers inoperable. No impact due to redundant trip circuits. No action required.
- B. Declare the effected breakers inoperable. Enter T.S. 3.0.3 and commence a reactor shutdown within 1 hour.
- C. Restore the shunt trip circuits to operable status within 48 hrs or declare the breakers inoperable and be in at least HOT STANDBY within 6 hours.
- D. Restore the inoperable breakers to operable status within 48 hours or open the reactor trip breakers within the next hour.

Proposed Answer: C

Explanation:

Technical Reference: T.S. 3.3.1, Table 3.3.1, Item 20, Action 9, Procedure 0POP04-DJ-0001, "Loss of Class 1E 125 VDC Power"

Proposed references to be provided to applicants during examination:

T.S. 3.3.1 and T/Ss 3.0.1 - 3.0.5

Learning Objective: _____

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** _____
55.43 2

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #			2
Group #			1
K/A #		064.G.2.1.11	
Importance Rating			3.8

Proposed Question 81:

Unit 1 is in Mode 1 and DG 12 and DG 13 have just been tagged out for emergency maintenance. The remaining DG 11 is operable. A few minutes later, an auxiliary operator reports the air pressure for DG 11 Starting Air Receivers 11 and 12 as 180 psig and 172 psig, respectively.

What actions are required?

- Declare 50.54x and immediately request an exigent technical specification waiver.
- Demonstrate the operability of two offsite power sources within one hour and at least once per 8 hours thereafter. In addition, restore one diesel generator to an operable status within 2 hours.
- Demonstrate the operability of two offsite power sources within one hour and at least once per 8 hours thereafter. In addition, restore two diesel generators to an operable status within 14 days.
- Enter T.S. 3.0.3 and commence a reactor shutdown within 1 hour.

Proposed Answer: B

Explanation:

T.S. 3.8.1.1, Action f. requires B above.

Technical Reference: T.S. 3.8.1.1 Addendum 5 and Procedure 0POP02-DG-0001.

Proposed references to be provided to applicants during examination:

T.S. 3.8.1.1

Learning Objective: _____

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** _____
55.43 2

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	<u>3</u>
	Group #	_____	<u>1</u>
	K/A #	_____ 2.1.7	_____
	Importance Rating	_____	<u>4.4</u>

Proposed Question 82:

Unit 1 is in Mode 6 with core alterations in progress.

Train C Control Room HVAC has been tagged out for maintenance for the last eight days.

- Train A and B Control Room HVAC are in the recirculation and makeup air filtration mode of operation.
- Essential Chiller 12 B trips and cannot be restarted.

Based on this information, which ONE of the following describes acceptable actions to comply with Technical Specifications?

- A. Suspend core alterations. Core alterations may resume after Essential Chiller 12B is returned to service.
- B. Suspend core alterations. Core alterations may resume after Control Room HVAC Train B is secured and Control Room temperature remains $\leq 78^{\circ}\text{F}$.
- C. Core alterations may continue. Re-verify that Train "A" Control Room HVAC is in recirculation and makeup air filtration mode of operation.
- D. Core alterations may continue. Verify that Train "A" Control Room HVAC is capable of being powered from an operable emergency power source.

Proposed Answer: A

Explanation:

Technical Reference: T.S. 3.7.7, Modes 5 and 6, Section b. and basis.

Proposed references to be provided to applicants during examination: T.S. 3.7.7

Learning Objective: _____

Question Source:

Bank #	STP-Requal	Modified	X
	<u> B20237-33269-01 </u>		_____
		New	_____

Question History: Last NRC Exam _____

Cognitive Level:

_____	Memory or Fundamental Knowledge
<u> X </u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	_____
55.43	<u> 7 and 2 </u>

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	3
	Group #	_____	4
	K/A #	G2.4.16	
	Importance Rating	_____	4.0

Proposed Question 88:

The following conditions exist on Unit 1:

- The crew is responding to an ORANGE path condition for CONTAINMENT by performing the actions of 0POP05-EO-FRZ1, Response to High Containment Pressure.
- They have just performed the first substep for verifying Containment Ventilation Isolation when a RED path condition is noted for HEAT SINK.
- No other RED or ORANGE paths exist.

Which ONE of the following indicates the correct procedure usage for this condition?

- Complete all steps of 0POP05-EO-FRZ1, Response to High Containment Pressure, then transition to 0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink.
- Complete all steps of 0POP05-EO-FRZ1, Response to High Containment Pressure, then transition to 0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink, only if the CFST for CONTAINMENT is satisfied.
- Immediately transition to 0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink without completing the step in progress in 0POP05-EO-FRZ1, Response to High Containment Pressure.
- Complete the step in progress in 0POP05-EO-FRZ1, Response to High Containment Pressure, then transition to 0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink.

Proposed Answer: D

Explanation:

Complete the step in progress in 0POP05-EO-FRZ1, Response to High Containment Pressure, then transition to 0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink

Technical Reference: 0POP01-ZA-0018, Rev 9; LOT504.04, Rev 6

Proposed references to be provided to applicants during examination:

Learning Objective: LOT 504.04 Obj 92245

Question Source: Bank # STP-352 Modified
New

Question History: Last NRC Exam Class 10

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: 55.41
 55.43 5

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	3
	Group #	_____	4
	K/A #	2.4.27	_____
	Importance Rating	_____	3.5

Proposed Question 89:

The following events have occurred on Unit 1 with reactor power at 35%:

- 10:00 a.m. A fire in CP 004 required a control room evacuation due to heavy smoke.
- 10:02 a.m. All control room actions specified in Procedure 0POP04-ZO-0001, "Control Room Evacuation" were completed.
- 10:08 a.m. All remote shutdown stations were manned and ready.
- 10:10 a.m. Communications have been established between ASP and all remote shutdown operators.
- 10:11 a.m. All switches, required by Step 12 (transfer control of various valves to ASP) of Procedure 0POP04-ZO-0001, on auxiliary shutdown panel in the ASP position.
- 10:16 a.m. Step 11 (ESF switchgear alignment) of Procedure 0POP04-ZO-0001 is still in progress. Safe Shutdown Watch estimated that ESF Train B switchgear room alignment would be completed in 2 minutes. All other alignments completed.

Based on the above events, what actions are required:

- A. The Unit 1 Shift Supervisor shall coordinate the fire response and declare an ALERT.
- B. The Unit 2 Shift Supervisor shall coordinate the fire response and declare an ALERT.
- C. The Unit 1 Shift Supervisor shall coordinate the fire response and declare a Site Area Emergency.
- D. The Unit 2 Shift Supervisor shall coordinate the fire response and declare a Site Area Emergency.

Proposed Answer: B

Explanation:

The unaffected Unit personnel shall coordinate the response to fires in the affected unit and common areas (0POP04-ZO-0008, Note before Step 2.0). Alert based on completing Procedure 0POP04-ZO-0001 Step 12 within 15 minutes.

Technical Reference: 0POP04-ZO-0008, 0POP04-ZO-0001, and 0ERP01-ZV-IN01

Proposed references to be provided to applicants during examination:

Provide Emergency Classification Tables, Category H, for Fire/Explosion, Control Room Evacuation, and Misc Events and associated bases pages.

Learning Objective: LOT 504.50 Obj A92210

Question Source:	Bank #	STP Requal	Modified	X
		<u> B50450-92210-05 </u>		_____
			New	_____

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41
 55.43 See explanation below

Comments:

SRO only since SRO is responsible for emergency classification (if the emergency director) and is responsible for direction of fire brigade response.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	1
	Group #	_____	1
	K/A #	055.EA1.05	
	Importance Rating	_____	3.6

Proposed Question 91:

Given the following conditions on Unit 2:

- A loss of all AC power has occurred.
- The operators are performing Procedure 0POP05-EO-EC00, "Loss of All AC Power."
- Annunciator "125 V DC SYSTEM E2A11 TRBL" is in alarm.
- Control Board Meter "BUS A11 TRN A CH 1" is reading 107 V dc.

What actions are required to be taken?

- Transition to Procedure 0POP05-EO-ES05, "Natural Circulation Cooldown without Letdown," and open all reactor vessel head vent isolation valves and throttle open one head vent valve.
- Transition to Procedure 0POP05-EO-ES02, "Natural Circulation Cooldown," and locally open SG PORVs to commence a cooldown.
- Remain in Procedure 0POP05-EO-EC00, "Loss of All AC Power," and per Addendum 4, lineup an E2A11 Battery Charger from the TSC Diesel Generator.
- Remain in Procedure 0POP05-EO-EC00, "Loss of All AC Power," and per Addendum 4, open Breaker E2A11 1B, "BTRY E2A11 Main BKR."

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-340 Modified X
New

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41
 55.43 5

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	1
	Group #	_____	1
	K/A #	056.G.2.4.30	
	Importance Rating	_____	3.6

Proposed Question 92:

Unit 1 is in Mode 5 and a loss of offsite power occurs. All three ESF DGs are supplying their respective buses. You, as the Shift Supervisor, have declared an Unusual Event. Describe the notifications required to be made by Procedure 0ERP01-ZV-IN02, "Notifications to Offsite Agencies?"

- A. NRC Operations Center immediately and the State of Texas and Matagorda County no later than one hour after emergency declared.
- B. State of Texas and Matagorda County within 15 minutes, and the NRC Operations Center no later than one hour after emergency declared.
- C. State of Texas and Matagorda County within 15 minutes, and the NRC Site Resident Inspector no later than one hour after emergency declared.
- D. State of Texas, Matagorda County, and NRC Site Resident Inspector no later than one hour after emergency declared.

Proposed Answer: B

Explanation:

Technical Reference: Proc 0ERP01-ZV-IN02

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP- Modified
 New X

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: **55.41** _____
55.43 _____

Comments:

SROs can and do have the responsibility of the emergency director and per the procedure are required to approve all notifications and make sure the notifications are made within the required time frame.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	1
	Group #	_____	1
	K/A #	E04.EA1.3	
	Importance Rating	_____	4

Proposed Question 93:

Unit 2 was operating at 100% power when a LOCA occurred in the FHB. The following conditions exist:

- The crew is performing 0POP05-EO-EC12, "LOCA Outside Containment"
- Train 'A' ECCS and Containment Spray have been isolated based on high SI/CS sump level.
- RCS temperature is slowly increasing
- RCS Pressure continues to decrease

Based on these conditions, what is the next action to be taken in accordance with 0POP05-EO-EC12, LOCA Outside Containment?

- A. Transition to 0POP05-EO-ES12, "Post-LOCA Cooldown and Depressurization," to cool down and depressurize to Cold Shutdown conditions.
- B. Remain in 0POP05-EO-EC12, "LOCA Outside Containment," and sequentially isolate the remaining ECCS and CS trains in an attempt to stop the leakage.
- C. Transition to 0POP05-EO-EC11, "Loss of Emergency Coolant Recirculation," to cool down and depressurize to Cold Shutdown conditions.
- D. Concurrently perform 0POP05-EO-EC11, "Loss of Emergency Coolant Recirculation," and 0POP05-EO-EC12, "LOCA Outside Containment."

Proposed Answer: B

Explanation:

Assumptions - SBLOCA approximately 1.5" diameter in the FHB.

Technical Reference: 0POP05-EO-EC12, "LOCA Outside Containment,"

Proposed references to be provided to applicants during examination:

Learning Objective: _____

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

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41
 55.43 5

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>2</u>
	K/A #	033.G2.4.11	
	Importance Rating	_____	<u>3.6</u>

Proposed Question 95:

A plant startup is in progress.

At 7% power, the compensating voltage power supply in Intermediate Range Channel N35 failed. Reactor power is being maintained at 9% power until N35 is repaired.

What action(s) is required to be taken?

- A. Initiate action within one hour to place the unit in Hot Standby within the next six hours.
- B. Place the N35 LEVEL TRIP switch in the TRIP position and continue with the startup.
- C. Place the N35 LEVEL TRIP switch in the BYPASS position and reduce reactor power to just below the P-6 setpoint within one hour
- D. Maintain reactor power less than 10% of rated thermal power until Channel N35 is repaired.

Proposed Answer: D

Explanation:

Technical Reference: T.S. 3.3.1, Action 3 and Procedure 0POP04-NI-0001, "Nuclear Instrument Malfunction"

Proposed references to be provided to applicants during examination: T/S 3.3.1

Learning Objective: LOT503.01 Task # A92103

Question Source: Bank # STP- Modified X
 B50301-92103-19
New ____

Question History: Last NRC Exam ____

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

10 CFR Part 55 Content: 55.41
 55.43 2 and 5

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #			1
Group #			2
K/A #		E16.G2.3.10	
Importance Rating			3.3

Proposed Question 96:

Plant conditions are as follows:

- A large break LOCA has occurred
- Containment pressure = 9.2 psig
- Containment water level = 62 inches
- Containment radiation level = 2500 R/hr
- RWST Level is 175,000 gallons

Which procedure is appropriate for the above conditions:

- A. Procedure 0POP05-EO-FRZ1, "Response to High Containment Pressure"
- B. Procedure 0POP05-EO-FRZ2, "Response to Containment Flooding"
- C. Procedure 0POP05-EO-FRZ3, "Response to High Containment Radiation Level"
- D. Procedure 0POP05-EO-ES13, "Transfer to Cold Leg Recirculation"

Proposed Answer: C

Explanation:

Technical Reference: 0POP05-EO-FRZ3, "Response to High Containment Radiation Level"

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-1099 Modified
New

Question History: Last NRC Exam Class 13

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41
 55.43 5

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #			2
Group #			1
K/A #		012.G2.1.32	
Importance Rating			3.8

Proposed Question 97:

Which ONE of the following Reactor Trip System instrumentation setpoints is designed to protect the reactor core against Departure from Nucleate Boiling?

- A. Power Range Positive Rate
- B. Overpower - Delta T
- C. Pressurizer High Pressure
- D. RCP Underfrequency

Proposed Answer: D

Explanation:

Technical Reference: T.S. Basis 2.2.1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # STP-812 Modified
New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41
 55.43 2

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
Tier #		_____	3
Group #		_____	3
K/A #		2.3.4	_____
Importance Rating		_____	3.1

Proposed Question 98:

A LOCA has occurred on Unit 1 and a SAE has just been declared. The TSC and EOF have been activated. To prevent core damage it is recommended that entry be made into Safety Injection Pump Room 1A.

Projected dose rate in the Pump Room is 1.16E+5 mR/hr.

Duration of the exposure is expected to be 3 minutes.

Who must authorize this exposure?

- A. Radiological Director
- B. Emergency Director
- C. Plant Manager
- D. Vice President of Generation

Proposed Answer: B

Explanation:

Technical Reference: 0ERP01-ZV-IN06; 0PGP03-ZR-0050

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # 661 Modified
New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41**
55.43 4

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>1</u>
	K/A #	<u>APE 057.G.2.4.45</u>	
	Importance Rating	_____	<u>3.6</u>

Proposed Question 100:

Unit 1 is operating at 100% power when 120 VAC Distribution Panel DP-1202 becomes de-energized. The plant remains at 100% power with the following annunciators alarming (in addition to others) due to failed instrumentation:

- OT DT RX PRETRP
- PRZR LVL LO B/U HTRS OFF LETDN ISOL
- SG 1C LEVL DEV HI/LO
- T AVG/AUCT T AVG DEV

Based on the information provided, which of the following should be the FIRST action taken?

- A. Immediately trip the reactor and enter Procedure 0POP05-EO-EO00, "Reactor Trip or Safety Injection," since the plant should have tripped due to loss of DP-1202.
- B. Enter Procedure 0POP04-FW-0001, "Loss of Steam Generator Level Control," to stabilize SG levels to prevent an unnecessary Reactor Trip on SG level.
- C. Enter Procedure 0POP04-CV-0004, "Loss of Normal Letdown," to establish Excess Letdown to prevent an unnecessary Reactor Trip on Pressurizer Level.
- D. Enter Procedure 0POP04-RP-0004, "Failure of RCS Loop RTD Protection," to stabilize RCS temperature to prevent an unnecessary Reactor Trip on OPDT.

Proposed Answer: B

Explanation:

Technical Reference: Procedure 0POP04-FW-0001, "Loss of Steam Generator Water Level Control"

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:	Bank #	STP-	Modified	X
		<u>B50301-92104-10</u>		_____
			New	_____

Question History: Last NRC Exam _____

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

10 CFR Part 55 Content: 55.41 _____
55.43 5 _____

Comments: