U.S. Nuclear Regulatory Commission

Site-Specific SRO Written Examination

Applicant Information	
Name:	
Date:	Facility/Unit: Prairie Island NGP U1/U2
Region: I ☐ II ☐ III ☒ IV ☐	Reactor Type:W ☒ CE ☐ BW ☐ GE ☐
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination you must achieve a final grade of at least 80.00 percent overall, with 70.00 percent or better on the SRO-only items if given in conjunction with the RO exam; SRO-only exams given alone require a final grade of 80.00 percent to pass. You have 8 hours to complete the combined examination, and 3 hours if you are only taking the SRO portion.

Applicant Certification

All work done on this examination is my own. I have neither given nor received aid.

_____

Applicant"s Signature

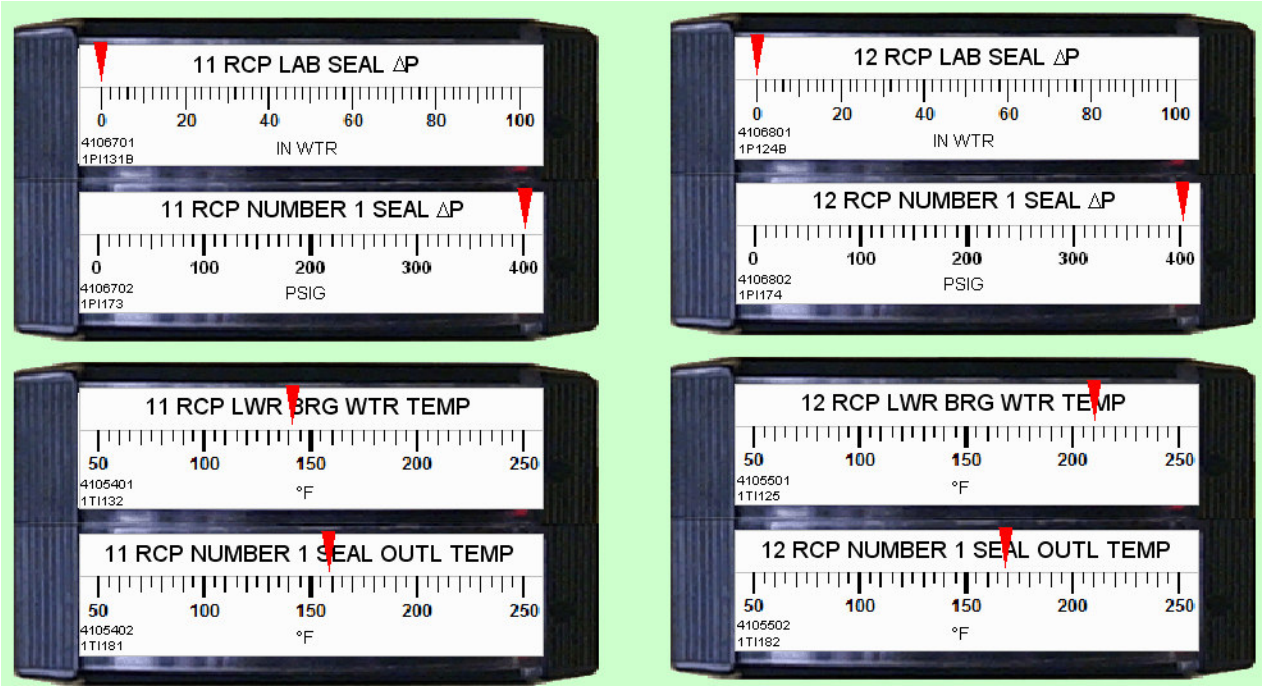
Results

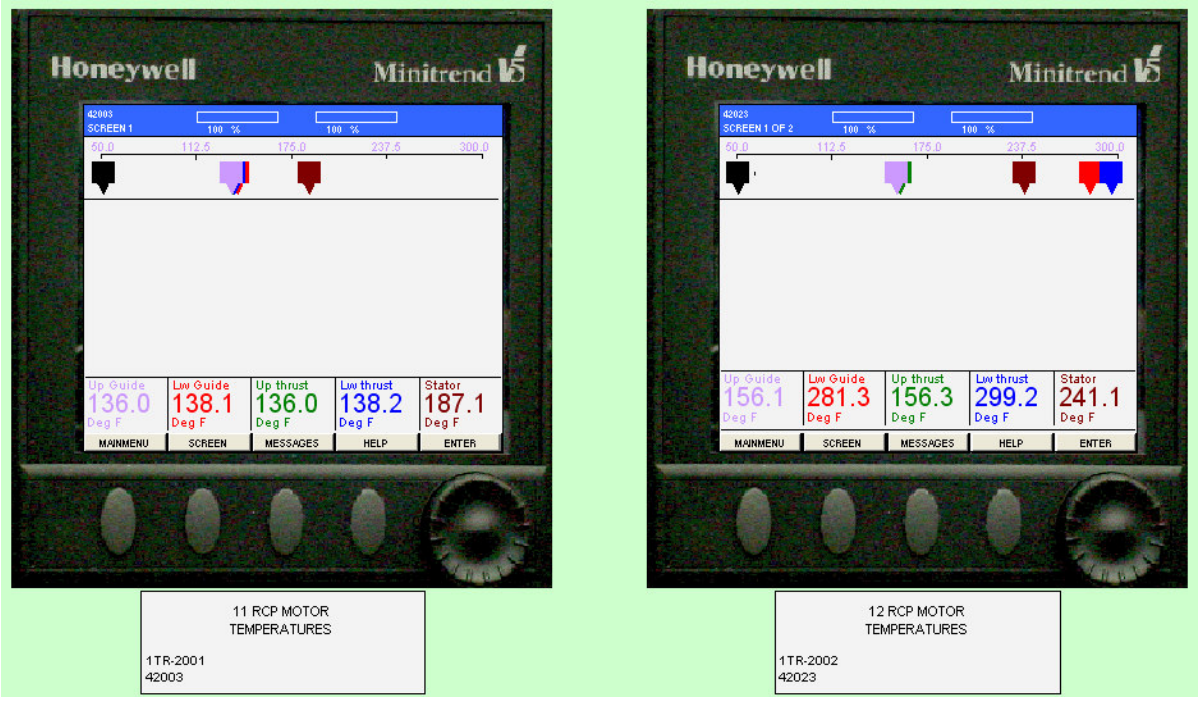
RO/SRO-Only/Total Examination Values	75	/ 25	/ 100	Points
Applicant"s Scores	_____	/ _____	/ _____	Points
Applicant"s Grade	_____	/ _____	/ _____	Percent

76. P8170L-002 136/015/017 AA2.10/3.7/3.7/3H/YES/P8100/1C3 AOP2/T.S. 3.4.5/2014 ILT NRC S76

Given the following conditions:

- Unit 1 is in Mode 3, HOT STANDBY.
- 11 and 12 RCPs are running.
- The RCP indications on Panel B (CVCS Letdown) are as follows:





Question continued on next page.

76. P8170L-002 136/015/017 AA2.10/3.7/3.7/3H/YES/P8100/1C3 AOP2/T.S. 3.4.5/2014 ILT NRC S76

Question continued from previous page.

- The CC indications of Panel A (Component Cooling) are as follows:

After completing the actions of the appropriate AOP, the Shift Supervisor will declare _____ INOPERABLE.

A. ONLY the "A" RCS loop

B. ✔ ONLY the "B" RCS loop

C. BOTH RCS Loops

D. NEITHER RCS Loops

3-SPK

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(2) Tech Specs. The question can NOT be answered by solely knowing < 1 hour TS actions OR by solely knowing the LCO "above the line" information OR by solely knowing TS Safety Limits. The question requires the application of required actions for T.S. 3.4.5.

Justifications:
a. Incorrect. Plausible as seal injection is loss to the 11 RCP; however, 11 RCP will NOT be secured because seal cooling is not lost to 11 RCP as indicated by bearing temperatures and CC flows to 11 RCP.
b. Correct. 12 RCP has lost seal cooling (Seal injection and CC to the bearings); therefore, 12 RCP will be secured per 1C3 AOP2. Once 12 RCP is secured, the "B" RCS Loop is INOPERABLE per T.S. 3.4.5.
c. Incorrect. Plausible if examinee incorrectly believes both RCPs will be stopped based on loss of seal injection flow alone. This is incorrect per 1C12.1 AOP1.
d. Incorrect. Plausible if examinee is not familiar or does not recognize 12 RCP has exceeded the bearing water temperature limit of 200F and determines NO RCPs need to be tripped at this time.

K/A Number:
015/017 Reactor Coolant Pump (RCP) Malfunctions
AA2.10:
Ability to determine and interpret the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow):
When to secure RCPs on loss of cooling or seal injection

Technical Reference(s): 1C3 AOP2 page 4, 1C12 AOP1 page 4, TS LCO 3.4.5

Proposed references to be provided to applicants during examination: None

Learning Objective: P8170L-002 Obj. 3H

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

Question History: Last NRC Exam ___N/A_____

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

10 CFR Part 55 Content:
55.41 _____
55.43 __2__

Comments:

77. P8172L-001A 133/022 2.4.8/3.8/4.5/7B/YES/P8100/1E-0/1C12.1 AOP1/SWI O-10/2014 ILT NRC S77
Given the following conditions:

- The crew is performing 1C12.1 AOP1, Loss of RCP Seal Injection.
- Unit 1 Reactor is tripped.
- Both Unit 1 RCPs are tripped.
- Immediate operator actions of 1E-0, Reactor Trip or Safety Injection, are complete.

- CC flow to each RCP is 210 gpm.
- The crew can NOT restore any Unit 1 Charging Pumps.

The SS will...

A. direct the Lead RO to perform Attachment L and
enter 1C3 AOP2, Loss of RCP Seal Cooling.

B. direct the Lead RO to perform Attachment L and
enter 1C18 AOP1, Makeup or Boration of the RCS Using a Safety Injection Pump.

C. transition to 1ES-0.1, Reactor Trip Recovery and
enter 1C3 AOP2, Loss of RCP Seal Cooling.

D.✔ transition to 1ES-0.1, Reactor Trip Recovery and
enter 1C18 AOP1, Makeup or Boration of the RCS Using a Safety Injection Pump.

3-SPK

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires assessing plant conditions (normal, abnormal, or emergency) and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed.

Justifications:
a. Incorrect. Plausible if examinee incorrectly believes SI will be actuated during E-0 in order to provide makeup to the RCS and incorrectly believes RCP seal cooling is lost.
b. Incorrect. Plausible as the SS will enter 1C18 AOP1; however, the SS will NOT direct the Lead RO to perform Attachment L.
c. Incorrect. Plausible as the SS will transition to 1ES-0.1; however, the SS will NOT enter 1C3 AOP2.
d. Correct.

K/A Number:
022 Loss of Reactor Coolant Makeup
2.4.8:
Knowledge of how abnormal operating procedures are used in conjunction with EOPs

Technical Reference(s): 1C12.1 AOP1 page 4, 1E-0 pages 4 -5, SWI O-10 pgs 5, 10, 14.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8172L-001A Obj. 7B

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

Question History: Last NRC Exam ___N/A_____

Question Cognitive Level:
Memory or Fundamental Knowledge ___
Comprehension or Analysis __X_

10 CFR Part 55 Content:
55.41 ____
55.43 __5__

Comments:

78. P8180L-003 058/025 AA2.07/3.4/3.7/7B/YES/P8100/1C15 AOP1 / AOP2/1C15 AOP3 / D2 AOP1/2014 ILT NRC S78
Given the following conditions:

- Unit 1 is in Mode 5.
- ERCS DP is 151" and stable.
- RVLIS is 100% and stable.
- An out-plant operator is in the field performing a valve lineup in the Auxiliary Building.
- 11 RHR Pump is in standby.
- 12 RHR Pump is running with the following indications:
  - Discharge pressure is oscillating between 0 and 100 psig.
  - Flow to the RCS is oscillating between 0 and 400 gpm.

The Shift Supervisor will enter...

A. ✔ 1C15 AOP1, RHR Flow Restoration,
and stop 12 RHR pump.

B. 1C15 AOP2, Loss of Coolant Inventory with RHR in Operation,
and isolate the leak.

C. D2 AOP1, Loss of Coolant While In A Reduced Inventory Condition,
and make up to the RCS.

D. 1C15 AOP3, RHR Operation without CR Instrumentation or Flow Control,
and manually throttle CLOSE the 11/12 RHR HX Bypass Flow Valve.

3-SPK

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires the knowledge of diagnostic steps and decision points in the EOPs that involve transitions to event specific sub-procedures or emergency contingency procedures.

Justifications:
a. Correct. Indications given are showing the 12 RHR Pump cavitating due to loss of suction.
b. Incorrect. Plausible if examinee incorrectly believes a loss of level is what caused the loss of RHR flow; however, RVLIS and ERCS DP are stable.
c. Incorrect. Plausible if examinee incorrectly believes the RCS is at reduced inventory; however, the RCS is NOT considered at reduced inventory until ERCS DP level is below 52.25 inches (corresponds to 3 feet below the reactor vessel flange) per 1D2.
d. Incorrect. Plausible as the 12 RHR pump is cavitating; however, NOT due to the flow control valve failing open.

K/A Number:
025 Loss of Residual Heat Removal System (RHRS)
AA2.07:
Ability to determine and interpret the following as they apply to the Loss of Residual Heat Removal System:
Pump cavitation

Technical Reference(s): 1C15 AOP1 pages 3 & 4, 1C15 AOP2 pages 3 & 4, 1C15 AOP3 pages 3 & 4, D2 AOP1 pages 3 & 4, 1D2 page 18.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8180L-003 058 Obj. 7B

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

Question History: Last NRC Exam ___N/A_____

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

10 CFR Part 55 Content:
55.41 ____
55.43 _5__

Comments:

79. P8197L-012 219/E12 2.2.44/4.2/4.4/38/YES/P8100/ECA-2.1//2014 ILT NRC S79

Given the following conditions:

- Unit 1 has experienced a major secondary system break.
- Both MSIVs are OPEN and can NOT be closed remotely.
- The crew has entered 1ECA-2.1, Uncontrolled Depressurization of Both Steam Generators.

- An Out-plant Operator closes 11 MSIV locally.

- 11 SG pressure is 550 psig and RISING.
- 12 SG pressure is 575 psig and LOWERING.

- 11 SG WR level is 45% and stable.
- 12 SG WR level is 48% and slowly lowering.

- Secondary radiation is normal.
- RWST level is 43% and slowly lowering.
- RCS pressure is 1600 psig and slowly lowering.

The Shift Supervisor will transition to...

A. 1ES-1.2, Transfer To Recirculation.

B. 1E-3, Steam Generator Tube Rupture.

C. ✔ 1E-2, Faulted Steam Generator Isolation.

D. 1E-1, Loss of Reactor or Secondary Coolant.

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires assessing plant conditions (normal, abnormal, or emergency) and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed. This is NOT a direct entry into a major EOP because the SS will have entered E-2, then transitioned to 1ECA-2.1, and then transition back to E-2.

Justifications:
a. Incorrect. Plausible if examinee incorrectly believes the switchover criteria is 43% RWST level; however, switchover criteria is 33% RWST level.
b. Incorrect. Plausible as 11 SG pressure rising is an indication of a SG Tube Rupture; however, during a SG Tube Rupture, level would also rise.
c. Correct. ECA-2.1 directs the operator to go to E-2 if one of the SGs pressures start to rise.
d. Incorrect. Plausible as RCS pressure is lower than normal; however, transition from 1ECA-2.1 only occurs if RCS is pressure is below 250 psig (no adverse containment).

K/A Number:
E12 Uncontrolled Depressurization of all Steam Generators
2.2.44:
Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.

Technical Reference(s): ECA-2.1 pages 5, 6, and information page.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8197L-012 Obj. 38

Question Source: Bank # _____
Modified Bank # P8197L-012 046
New _____

Question History: Last NRC Exam N/A

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

10 CFR Part 55 Content:
55.41 ___
55.43 5

Comments:

80. P8197L-011 105/055 EA2.03/3.9/4.7/7/YES/P8100/1ECA-0.0//2014 ILT NRC S80

Given the following conditions:

- The crew has entered 1ECA-0.0, Loss of All Safeguards AC Power.
- Offsite power is NOT available.
- Bus 15 is locked out.
- D2 Diesel Generator is OOS.
- The Bus 15 green load rejection lights are LIT.
- The Bus 16 green load rejection lights are NOT LIT.
- The Unit 2 Safeguard busses are energized from their respective diesels.

- 1ECA-0.0 is provided.

On which step of 1ECA-0.0 will the Shift Supervisor direct the Lead Reactor Operator to restore power to a Unit 1 Safeguards Bus?

A. step 6

B. step 7

C. step 10

D. ✔ step 11

2-RI

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires assessing plant conditions (normal, abnormal, or emergency) and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed.

Justifications:
a. Incorrect. Plausible if examinee incorrectly believes a Unit 1 source is available; however, since Bus 15 is locked out, D2 OOS, and NO offsite power, there is NO unit 1 source available.
b. Incorrect. Plausible as it is a common misconception to state Bus 16 is available; however, it is NOT available for sequencer loading. Therefore, ECA-2.1 directs operator to take isolate RCP seals and take loads to pullout prior to energizing Bus 16 from Unit 2 to prevent block loading the Unit 2 Diesel.
c. Incorrect. Plausible if examinee incorrectly believes a Unit 1 source is available.
d. Correct. Since the load sequencers are NOT available, Unit 1 sources are NOT available, and Unit 2 safeguards buses are energized, the crew will restore power on step 11.

K/A Number:
055 Loss of Offsite and Onsite Power (Station Blackout)
EA2.03:
Ability to determine or interpret the following as they apply to a Station Blackout:
Actions necessary to restore power

Technical Reference(s): 1ECA-0.0 pages 5 - 12

Proposed references to be provided to applicants during examination: All steps of 1ECA-0.0, but no background information.

Learning Objective: P8140L-247 Obj. 7

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

Question History: Last NRC Exam ___N/A_____

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

10 CFR Part 55 Content:
55.41 ____
55.43 __5__

Comments:

81. P8197L-011 017/E04 2.4.18/3.3/4.0/A3/YES/P8100/E-0/ECA-1.2/2014 ILT NRC S81

Given the following conditions:

- A LOCA has occurred on Unit 1.
- Containment pressure is 0.1 psig and stable.
- RCS subcooling is 92°F and stable.
- Total feed flow to SGs is 250 gpm and stable.
- RCS pressure is 1840 psig and stable.
- Pressurizer level is 0% and stable.

- Auxiliary building radiation alarms are the ONLY radiation alarms occurring.
- Additional equipment failures result in the break NOT being isolable from the RCS.

The Shift Supervisor will transition from 1E-0 to _____ and the Unit will be cooled down to Cold Shutdown using _____.

A. ✔ 1ECA-1.2, LOCA Outside Containment
1ECA-1.1, Loss of Emergency Coolant Recirculation

B. 1ECA-1.2, LOCA Outside Containment
1ES-1.1, Post-LOCA Cooldown and Depressurization

C. 1ES-0.2, SI Termination
1ES-1.1, Post-LOCA Cooldown and Depressurization

D. 1ES-0.2, SI Termination
1C1.3, Unit 1 Shutdown

3-SPK

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires assessing plant conditions (normal, abnormal, or emergency) and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed.

Justifications:
a. Correct. Since the LOCA is in the Auxiliary Building, transition is made directly to 1ECA-1.2 based on adverse radiation levels in the Auxiliary Building. The transition to 1ECA-1.1 is made because all RCS water is going to the Auxiliary Building instead of sump B in containment; therefore, loss of recirc capability.
b. Incorrect. Plausible as the SS will transition from 1E-0 to 1ECA-1.2; however, the unit will not be cooled down using ES-1.1.
c. Incorrect. Plausible if the examinee incorrectly believes SI termination criteria is met and incorrectly believes the unit will be cooled down using 1ES-1.1. SI termination criteria is not met because pressurizer level is below 7% and RCS pressure is below 2000 psig. During a normal small break LOCA (i.e. inside containment), the unit would be cooled down using 1ES-1.1.
d. Incorrect. Plausible as the crew would transition to 1ES-0.2 and the unit would be cooled down using 1C1.3; however, this procedure flow path would only be used in this situation if SI termination criteria was met. SI termination criteria is not met because pressurizer level is below 7% and RCS pressure is below 2000 psig.

K/A Number:
E04 LOCA Outside Containment
2.4.18:
Knowledge of the specific bases for EOPs

Technical Reference(s): 1E-0 page 11, 1ECA-1.2 pages 1 -4.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8197L-011 Obj. A3

Question Source: Bank # P8197L-011 017
Modified Bank # _____
New _____

Question History: Last NRC Exam N/A

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

10 CFR Part 55 Content:
55.41 ___
55.43 5

Comments:

82. P8182L-003 030/036 2.4.4/4.5/4.7/3C/YES/P8100/C1.6 AOP1 /D5.2 AOP1/B17 / C17/2014 ILT NRC S82
Given the following conditions:

- Core reload refueling activities are in progress.
- An irradiated fuel assembly is being lowered into the core with the HOIST JOG SWITCH.
- The ENTERING CORE SLOW ZONE light has just extinguished.
- The manipulator crane operator continues lowering the irradiated fuel assembly into the core, now using the HOIST CONTROL LEVER.

- The hoist abruptly stops and the mast support tube is shaking noticeably.
- The manipulator crane camera shows the fuel assembly is FULLY inserted.

- The following indications are present:
  - ENTERING CORE SLOW ZONE light is OFF.
  - INTERMEDIATE CORE ZONE light is ON.
  - BOTTOM CORE SLOW ZONE light is OFF.
  - UNDERLOAD light is ON.
  - SLACK CABLE light is ON.
  - Gas bubbles are visible rising from the vicinity of the fuel assembly.

The _____ control signal has failed. The Containment SRO will implement _____ AND _____.

A. UNDERLOAD
D5.2 AOP1, Damaged Fuel Assembly
C1.6 AOP1, Containment Evacuation

B. UNDERLOAD
D5.2 AOP1, Damaged Fuel Assembly
D5.2 AOP4, Spent Fuel Pool Area Evacuation-Refueling

C. ✔ BOTTOM CORE SLOW ZONE
D5.2 AOP1, Damaged Fuel Assembly
C1.6 AOP1, Containment Evacuation

D. BOTTOM CORE SLOW ZONE
C1.6 AOP1, Containment Evacuation
D5.2 AOP4, Spent Fuel Pool Area Evacuation-Refueling

3-SPK

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(7) Fuel handling facilities and procedures. This question requires knowledge of the Refuel Floor SRO responsibilities.

Justification:
a. *Incorrect. This is the wrong control signal failure, since the underload light is illuminated, even though the procedures are correct.*
b. *Incorrect. This has both the wrong control signal failure and incorrect procedures to implement.*
c. *Correct. This is the correct control signal failure and the correct procedures to be implemented.*
d. *Incorrect. Although this is the correct control signal failure, the implemented procedures are not correct.*

K/A Number:
036 Fuel Handling Accident
2.4.4:
Ability to recognize abnormal indications for system operating parameters that are entry level conditions for emergency and abnormal operating procedures.

Technical Reference(s): C1.6 AOP1 page 3, D5.2 AOP1 page 3, B17 pages 10 - 14, C17 page 27.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8182L-003 Obj. 3C

Question Source: Bank #: P8182L-003 030
Modified Bank #: _____
New: _____

Question History: Last NRC Exam: 2012 ILT NRC EXAM

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

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

Comments:

83. P8171L-007 071/037 AA2.10/3.2/4.1/6/YES/P8100/TS 3.4.14//2014 ILT NRC S83

Given the following conditions:

- Unit 1 is at 100% power.
- The following RCS leakage indications were determined at 1100 on 8/4/14:
  - IDENTIFIED leakage is 9.1 gpm.
  - UNIDENTIFIED leakage is 0.8 gpm.
  - Primary to Secondary leakage is 432 gallons per day.
- T.S. LCO 3.4.14 is provided.

Technical Specification LCO 3.4.14 requires Unit 1 to be in Mode 5 by _____ on _____.

A. ✔ 2300
8/5/14

B. 0700
8/6/14

C. 2300
8/7/14

D. 0300
8/8/14

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(2) Tech Specs. The question can NOT be answered by solely knowing < 1 hour TS actions OR by solely knowing the LCO "above the line" information OR by solely knowing TS Safety Limits. The question requires the application of required actions for T.S. 3.4.14.

Justifications:
a. Correct. Since primary to secondary leakage is 432 gallons per day, LCO 3.4.14 condition D is entered requiring the unit to be in Mode 5 in 36 hours.
b. Incorrect. Plausible if examinee incorrectly believes ALL leakage combined meets TS 3.4.14 for >10 gpm IDENTIFIED leakage; however, in this case IDENTIFIED leakage is 9.4 gpm total.
c. Incorrect. Plausible if examinee incorrectly believes UNIDENTIFIED leakage is "unidentified" plus "pri to sec" at 1.1 gpm AND incorrectly applies Cond B only; however, in this case "unidentified" leakage is limited to 0.8 gpm and Cond A & B would be entered if >1 gpm.
d. Incorrect. Plausible if examinee incorrectly believes UNIDENTIFIED leakage is "unidentified" plus "pri to sec" at 1.1 gpm; however, in this case "unidentified" leakage is limited to 0.8 gpm.

K/A Statement:
037 Steam Generator Tube Leak
AA2.10:
Ability to determine and interpret the following as they apply to the Steam Generator Tube Leak:
Tech-Spec limits for RCS leakage

Technical Reference(s): TS 3.4.14

Proposed references to be provided to applicants during examination: TS 3.4.14

Learning Objective: P8171L-007 Obj. 6

Question Source: Bank # ____
Modified Bank # _____
New ___X____

Question History: Last NRC Exam ____N/A___

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

10 CFR Part 55 Content:
55.41 ___ __
55.43 __2__

Comments:

84. P8182L-002 001/2.2.38/3.6/4.5/10C/YES/P8100/H4//2014 ILT NRC S84

Given the following conditions:

- Steam Generator blowdown is aligned to the river.
- Secondary coolant specific activity is <0.01uCi/gram DOSE EQUIVALENT I-131.

- R-21, CIRC WATER DISCH MONITOR, fails low and is declared inoperable.

- Table 2.2 of H4, Offsite Dose Calculation Manual, is provided.

The Shift Supervisor will ensure...

A. flow rate is estimated every 4 hours.

B. ✔ grab samples are collected and analyzed every 12 hours.

C. grab samples are collected and analyzed every 24 hours.

D. grab samples are collected and saved for weekly composition and analysis every 12 hours.

2-RI

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(2) Tech Specs. The question can NOT be answered by solely knowing < 1 hour TS actions OR by solely knowing the LCO "above the line" information OR by solely knowing TS Safety Limits. The question requires the application of required actions for the Offsite Dose Calculation Manual.

Justifications:
a. Incorrect. Plausible if examinee incorrectly believes R-21 is a flow monitor for Steam Generator Blowdown; however, R-21 is a radiation monitor.
b. Correct. Per Table 2.2 of H4, if the discharge canal monitor is inoperable than action 6 is required.
c. Incorrect. Plausible if examinee incorrectly believes R-21 is used to measure Steam Generator Blowdown effluent; however, R-19 is used to measure blowdown effluent.
d. Incorrect. Plausible if examinee incorrectly believes R-21 is the rad monitor used to measure Turbine Building Sump effluent; however, there are seperate rad monitors for this.

K/A Number:
APE 059 Accidental Liquid Radwaste Release
2.2.38:
Knowledge of conditions and limitations in the facility license.

Technical Reference(s): H4 pages 93 - 94.

Proposed references to be provided to applicants during examination: Table 2.2 of H4

Learning Objective: P8182L-002 Obj. 10C

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

Question History: Last NRC Exam N/A

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

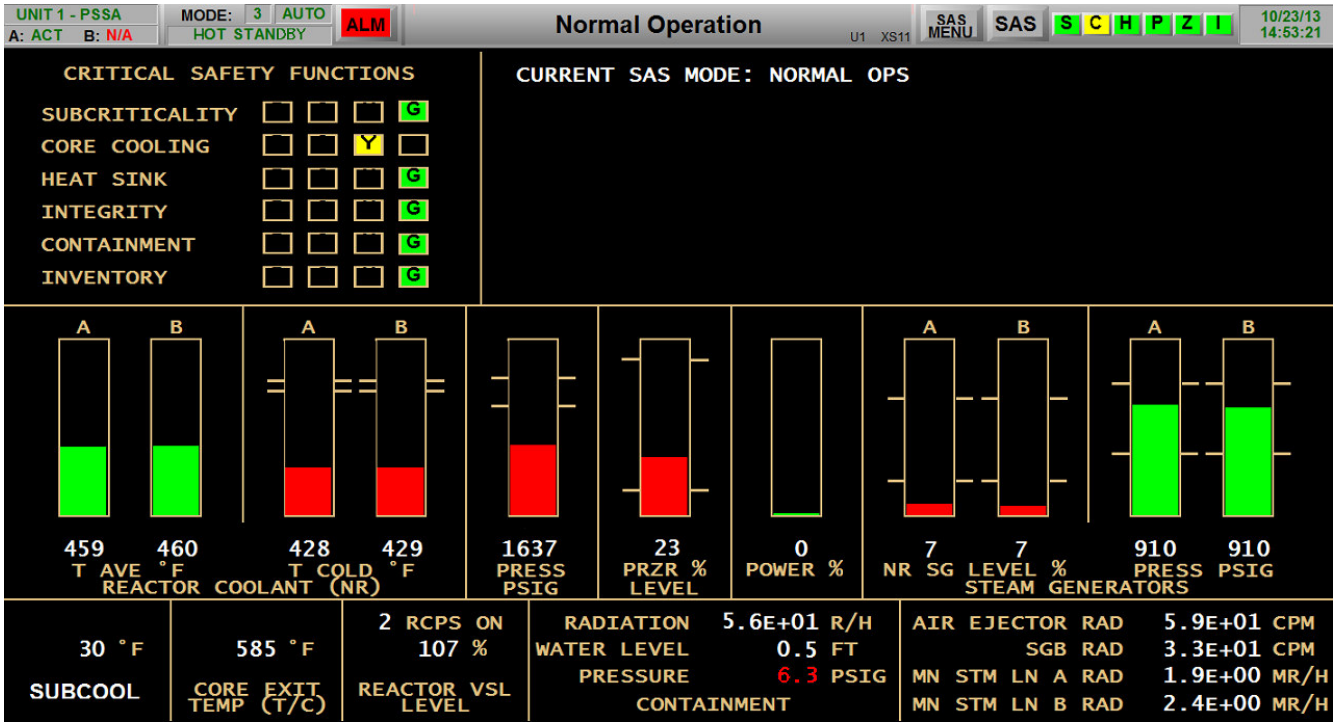
10 CFR Part 55 Content:
55.41 _____
55.43 2

Comments:

85. P8197L-012 225/E03 EA2.1/3.4/4.2/17/YES/P8100/1ES-1.1//2014 ILT NRC S85
Given the following conditions:

- A small break LOCA has occurred on Unit 1.
- The crew is in 1E-1, Loss of Reactor or Secondary Coolant.

Based on the following information:



The Shift Supervisor will transition to _____.

A. 1ES-0.2, SI Termination

B. 1ES-0.1, Reactor Trip Recovery

C. 1ECA-1.2, LOCA Outside Containment

D.✔ 1ES-1.1, Post LOCA Cooldown and Depressurization

3-SPK

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires the knowledge of diagnostic steps and decision points in the EOPs that involve transitions to event specific sub-procedures or emergency contingency procedures.

Justifications:
a. Incorrect. Plausible if examinee incorrectly believes subcooling is sufficient and CTMT is NOT adverse; however, in this case CTMT is adverse, also RCS pressure and PRZR level are not sufficient to terminate SI.
b. Incorrect. Plausible if examinee incorrectly believes a SI did NOT occur and a transition to 1ES-0.1 is warranted.
c. Incorrect. Plausible if examinee incorrectly believes the LOCA is outside containment; however, the LOCA is inside containment as indicated from Containment Pressure and water level.
d. Correct. For the given conditions, per step 20 of 1E-1, a transition to 1ES-1.1 is appropriate.

K/A Number:
E03 LOCA Cooldown and Depressurization
EA2.1:
Ability to determine and interpret the following as they apply to the (LOCA Cooldown and Depressurization):
Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

Technical Reference(s): 1E-1 Info Page & page 11, 1ES-1.1 info page & pages 2 & 3.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8197L-012 Obj. 17

Question Source: Bank # P8197L-012 225
Modified Bank # _____
New _____

Question History: Last NRC Exam N/A

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

10 CFR Part 55 Content:
55.41 _____
55.43 5

Comments:

86. P8197L-014 116/003 2.1.7/4.4/4.7/50/YES/P8100/1FR-I.3//2014 ILT NRC S86

Given the following conditions:

- Both RCPs are secured.
- Prior to both RCPs being secured, 12 RCP seal cooling was lost.
- A status evaluation of 12 RCP has NOT been completed.

- The crew is on step 8 of 1FR-I.3, Response to Voids in Reactor Vessel.

- RCS pressure is 1185 psig.
- RCS cold leg temperatures are 500°F.
- RCS subcooling is 65°F.
- Containment Pressure is 3.8 psig.
- RVLIS Full Range is 70% and lowering.
- Pressurizer level is 92%.
- The water in the pressurizer is saturated.

- 1FR-I.3 is provided.

What is the NEXT action the Shift Supervisor will direct?

A. ✔ Start 11 RCP.

B. Start 12 RCP.

C. Block Safety Injection.

D. Dump steam as necessary.

3-SPK

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires assessing plant conditions (normal, abnormal, or emergency) and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed.

Justifications:
a. Correct.
b. Incorrect. Plausible if examinee disregards Caution on top of page 6 and also because 12 RCP is the preferred RCP.
c. Incorrect. Plausible if examinee incorrectly believes containment is adverse and goes to step 12 per RNO on step 9a. However, containment is not adverse because it is below 5 psig.
d. Incorrect. Plausible as step 14 will require dumping steam if subcooling is not greater than 70F; however, this would NOT be the next step performed.

K/A Number:
003 Reactor Coolant Pump System (RCPS)
2.1.7:
Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation

Technical Reference(s): 1FR-I.3 pages 5 - 7.

Proposed references to be provided to applicants during examination: 1FR-I.3 (no bases)

Learning Objective: P8197L-014 Obj. 50

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

Question History: Last NRC Exam N/A

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

10 CFR Part 55 Content:
55.41 _____
55.43 5

Comments:

87. P8180L-004 024/006 A2.13/3.9/4.2/4B/YES/P8100/1C18 AOP2//2014 ILT NRC S87

Given the following conditions:

- Unit 1 is in Mode 3, Hot Standby.
- RCS Tavg is 380°F and stable.
- RCS pressure is 400 psig and stable.
- RCS subcooling is 70°F and stable.
- PT-945, 1 CNTMT PRESS 1 NARROW RANGE, has failed HIGH.

- When going to trip the bistable for PT-945, I&C inadvertently tripped the SI high pressure bistable for PT-947, 1 CNTMT PRESS 3 NARROW RANGE.

- Containment pressure is 0 psig on all Control Room indications.

The Shift Supervisor will enter _____ and direct a Control Room Operator to _____.

A. 1ES-0.2, SI Termination
stop SI pumps ONLY

B. 1ES-0.2, SI Termination
stop SI and RHR pumps

C. 1E-0, Reactor Trip or Safety Injection
perform Attachment L

D.✔ 1C18 AOP2, Inadvertent Safety Injection When Shutdown
place running SI pumps in PULLOUT

3-PEO

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires assessing plant conditions (normal, abnormal, or emergency) and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed.

Justifications:
a. Incorrect. Plausible as this procedure would be used for inadvertent SI actuation after transition from 1E-0; however, in this case 1E-0 entry conditions are NOT met and 1ES-0.2 would not be entered.
b. Incorrect. Plausible if examinee incorrectly believes the RHR pumps should be secured and incorrectly believes 1ES-0.2 should be used.
c. Incorrect. Plausible as this procedure would be used for inadvertent SI actuation at power; however, in this case 1E-0 entry conditions are NOT met.
d. Correct.

K/A Statement:
006 Emergency Core Cooling System (ECCS)
A2.13:
Ability to Ability to (a) predict the impacts of the following malfunctions or operations on the ECCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:
Inadvertent SIS actuation

Technical Reference(s): 1C18 AOP2 pages 2 & 3, 1E-0 page 2, 1ES-0.2 page 2.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8180L-004 Obj. 4B

Question Source: Bank # _____
Modified Bank # P8180L-004 024
New _____

Question History: Last NRC Exam N/A

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

10 CFR Part 55 Content:
55.41 _____
55.43 5

Comments:

88. P8180L-009H 048/022 2.2.22/4.0/4.7/9B/YES/P8100/T.S. 3.6.5 BASES//2014 ILT NRC S88

Given the following conditions:

- Unit 2 is at 100% power.
- 21 & 23 CFCUs are running in SLOW and aligned to the DOME.
- 22 & 24 CFCUs are running in FAST and aligned to the GAP/SUP CLG.
- Containment Fan Coil Units (CFCUs) are being shifted per 2C19.2, Containment System Ventilation Unit 2.

- 22 CFCU fails to start in SLOW speed.
- 22 CFCU is re-started and running in FAST speed.

- 23 CFCU fails to start in FAST speed.
- 23 CFCU is re-started and running in SLOW speed.

The 22 CFCU is _____ AND the 23 CFCU is _____.

A. OPERABLE
OPERABLE

B. OPERABLE
INOPERABLE

C.✔ INOPERABLE
OPERABLE

D. INOPERABLE
INOPERABLE

1-B

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(2) Tech Specs. The question can NOT be answered by solely knowing < 1 hour TS actions OR by solely knowing the LCO "above the line" information OR by solely knowing TS Safety Limits. The question requires the knowledge of TS bases that is required to analyze TS required actions and terminology.

Justifications:
a. Incorrect. Plausible as 23 FCU is operable based on slow speed capability; however, in this case 22 FCU is NOT operable.
b. Incorrect. Plausible if examinee incorrectly believes that fast speed operation is required by safety analysis instead of slow speed.
c. Correct.
d. Incorrect. Plausible as 22 FCU is inoperable; however, in this case 23 FCU is still operable because it can fulfill its required slow speed function.

K/A Number:
022 Containment Cooling
2.2.22:
Knowledge of limiting conditions for operations and safety limits.

Technical Reference(s): T.S. 3.6.5 Bases

Proposed references to be provided to applicants during examination: None

Learning Objective: P8180L-009H Obj. 9B

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

Question History: Last NRC Exam: N/A

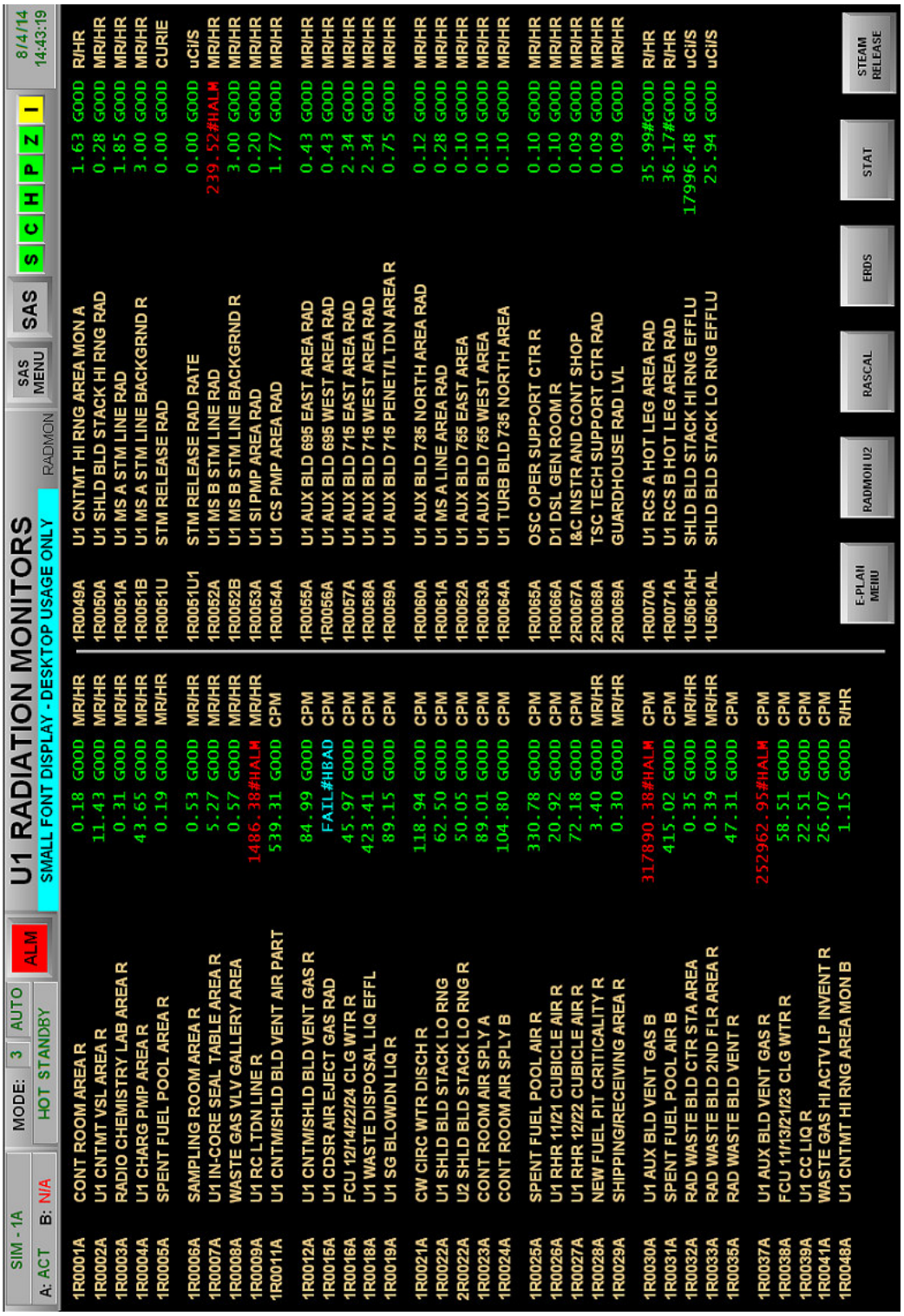
Question Cognitive Level:
Memory or Fundamental Knowledge: X
Comprehension or Analysis: _____

10 CFR Part 55 Content:
55.41: ___
55.43: 2

Comments:

89. P8182L-002 136/039 A2.03/3.4/3.7/3J/YES/P8100/PINGP 1576//2014 ILT NRC S89

Given the following conditions:



Question continued on next page.

89. P8182L-002 136/039 A2.03/3.4/3.7/3J/YES/P8100/PINGP 1576//2014 ILT NRC S89

Question continued on next page.

Question continued from previous page.

- Radiation levels are expected to remain as shown for at least 1 hour.
- PINGP 1576, Emergency Classification Tables, is provided.

Based ONLY on the ERCS information given, which of the following EAL classifications will the Shift Manager declare?

A. RU 1.2

B. RU 2.2

C. ✔ RA 1.2

D. RS 1.1

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(6) Procedures and limitations involved in alterations in core configuration. This question requires evaluating emergency classifications based on core conditions.

Justifications:
a. Incorrect. Plausible as conditions are met for this NUE; however, in this case the indications given exceed the ALERT threshold.
b. Incorrect. Plausible as conditions are met for this NUE; however, in this case the indications given exceed the ALERT threshold.
c. Correct.
d. Incorrect. Plausible if examinee incorrectly believes indications given meet the SAE threshold.

K/A Number:
039 Main and Reheat Steam System (MRSS)
A2.03:
Ability to (a) predict the impacts of the following malfunctions or operations on the MRSS; and (b) based on predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:
Indications and alarms for main steam and area radiation monitors (during SGTR)

Technical Reference(s): PINGP 1576

Proposed references to be provided to applicants during examination: PINGP 1576

Learning Objective: P8182L-002 Obj. 3J

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

Question History: Last NRC Exam N/A

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

10 CFR Part 55 Content:
55.41 _____
55.43 6

Comments:

90. P8182L-002 137/073 A2.02/2.7/3.2/5C/YES/P8100/D5.1 AOP1//2014 ILT NRC S90

Given the following conditions:

- Both Units are at 100% power.
- Fuel handling is in progress in the Spent Fuel Pool (SFP) area.

- A fuel assembly is dropped.

- R-25, Spent Fuel Pool Air Monitor A, fails low.
- R-31, Spent Fuel Pool Air Monitor B, is in alarm.

The Shift Supervisor will enter _____ and direct _____.

A. ✔ D5.1 AOP1, SFP Area Evacuation - Non-Refueling
raising the R-25 test current signal at the radiation monitor racks

B. D5.1 AOP1, SFP Area Evacuation - Non-Refueling
placing 122 Spent Fuel Special & 21 In-Service Purge Exhaust Fan in START

C. D5.2 AOP4, SFP Area Evacuation - Refueling
raising the R-25 test current signal at the radiation monitor racks

D. C47047 R-25, Spent Fuel Pool Air Monitor A
placing 122 Spent Fuel Special & 21 In-Service Purge Exhaust Fan in START

3-SPK

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(7) Fuel handling facilities and procedures. This question requires knowledge of the Refuel Floor SRO responsibilities

Justifications:
a. Correct.
b. Incorrect. Plausible as the SS will enter D5.1 AOP; however, the SS will not direct starting 122 SFP Special Fan.
c. Incorrect. Plausible as the SS will direct raising R-25 test current signal; however, the SS will not enter D5.2 AOP4.
d. Incorrect. Plausible as entering C47047 R-25 would occur; however, that procedure will not direct starting 122 SFP Special.

K/A Number:
073 Process Radiation Monitoring (PRM) System
A2.02:
Ability to (a) predict the impacts of the following malfunctions or operations on the PRM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:
Detector failure

Technical Reference(s): D5.1 AOP1 pages 3 - 5, D5.2 AOP1 pages 1 -5, D5.2 AOP4 page 3, C47047 (R25) pages 1 & 2.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8182L-002 Obj. 5C

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

Question History: Last NRC Exam: N/A

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

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

Comments:

91. P8170L-006 058/011 A2.03/3.8/3.9/10C/YES/P8100/T.S. 3.3.1/C51/2014 ILT NRC S91

Given the following conditions:

- Unit 1 is at 100% power.

- 1LT-428, Blue Channel Pressurizer LEVEL, fails LOW.
- Actions per 1C51.3, Instrument Failure Guide, are in progress.

- Bistables cannot be tripped within 6 hours.

- T.S. LCO 3.3.1 is provided.

Technical Specification LCO 3.3.1 requires Unit 1 thermal power to be reduced to...

A. MODE 3 in 7 hours.

B. MODE 3 in 12 hours.

C. ✔ less than 10% in 12 hours.

D. less than 10% in 16 hours.

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(2) Tech Specs. The question can NOT be answered by solely knowing < 1 hour TS actions OR by solely knowing the LCO "above the line" information OR by solely knowing TS Safety Limits. The question requires the application of required actions for TS 3.3.1.

Justifications:
a. Incorrect. Plausible if examinee incorrectly believes T.S. LCO 3.3.1 does not apply and therefore, T.S. LCO 3.0.3 must be entered, which requires to be in Mode 3 in 7 hours.
b. Incorrect. Plausible if examinee incorrectly misapplies T.S. and believes Condition E should be entered.
c. Correct.
d. Incorrect. Plausible if examinee incorreclty applies the NOTE for Condition K of LCO 3.3.1 and believes that 4 hours may be added to the 12 hour requirement.

K/A Number:
011 Pressurizer Level Control System (PZR LCS)
A2.03:
Ability to (a) predict the impacts of the following malfunctions or operations on the PZR LCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of
those malfunctions or operations:
Loss of PZR level

Technical Reference(s): T.S. LCO 3.0.3, T.S. LCO 3.3.1

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

Learning Objective: P8170L-006 Obj. 10C

Question Source: Bank # _____
Modified Bank # ____
New ___X___

Question History: Last NRC Exam ___N/A_____

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

10 CFR Part 55 Content:
55.41 _____
55.43 __2__

Comments:

92. P8184L-002 081/2.2.12/3.7/4.1/10D/YES/P8100/T.S. 3.3.1/SP-1198/2014 ILT NRC S92

Given the following conditions:

- SP-1198, NIS Power Range Startup Test, is being performed.

- N42, PR Nuclear Instrument, trip function setpoint was found set at 37%.
- The as left setpoint was recorded as 25.2%.

- T.S. LCO 3.3.1 and SP 1198 are provided.

What is the status of N42 and SP-1198?

	N42 AS FOUND OPERABILITY	SP-1198 ACCEPTANCE CRITERIA
A.	OPERABLE	MET
B.✔	OPERABLE	NOT MET
C.	INOPERABLE	MET
D.	INOPERABLE	NOT MET

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(2) Tech Specs. The question can NOT be answered by solely knowing < 1 hour TS actions OR by solely knowing the LCO "above the line" information OR by solely knowing TS Safety Limits. The question requires the application of surveillance requirements.

Justifications:
a. Incorrect. Plausible as the as found status of N42 is operable; however, the acceptance criteria for N42 as left is not met.
b. Correct.
c. Incorrect. Plausible if examinee incorrectly believes as found status must be below 25% and therefore is inoperable. Also, if examinee incorrectly believes that as left must be below 40% and the acceptance criteria is therefore met.
d. Incorrect. Plausible if the examinee incorrectly believes the as found and as left status must be below 25%.

K/A Number:
015 Nuclear Instrumentation
2.2.12
Knowledge of surveillance procedures.

Technical Reference(s): T.S. 3.3.1, T.S. 3.3.1 Bases pgs 1-3, SP-1198.

Proposed references to be provided to applicants during examination: T.S. 3.3.1, SP-1198.

Learning Objective: P8184L-002 Obj. 10D.

Question Source: Bank #: _____
Modified Bank #: P8184L-002 081
New: _____

Question History: Last NRC Exam: N/A

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

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

Comments:

93. P8182L-002 089/072 A2.01/2.7/2.9/10C/YES/P8100/TS LCO 3.3.3//2014 ILT NRC S93

Given the following conditions:

- Both units are at 100% power.
- 1R-48, U1 CNTMT HI RNG AREA MON B, is OOS for the past 10 days.
- T.S. LCO 3.3.3 Condition A was entered 10 days ago.

- 1R-49, U1 CNTMT HI RNG AREA MON A, fails LOW due to a loss of power.

- T.S. LCO 3.3.3 is provided.

The Shift Supervisor will enter Technical Specification LCO 3.3.3 Condition ____ .

A. C

B. ✔ D

C. H

D. I

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(2) Tech Specs. The question can NOT be answered by solely knowing < 1 hour TS actions OR by solely knowing the LCO "above the line" information OR by solely knowing TS Safety Limits. The question requires the application of required actions for TS 3.3.3.

Justifications:
a. Incorrect. Plausible if examinee incorrectly believes that a second channel inoperable causes Condition A required action not to be met.
b. Correct. Per Table 3.3.3-1, two Containment High Range Area Monitors are required to be operable. With two required channels inoperable, Condition D is entered with required action of restoring one channel to operable status within 7 days.
c. Incorrect. Plausible if examinee implements T.S. 3.3.3 similiar to TS 3.3.1 and 3.3.1 by going to the table first and entering the condition listed in the table (in this case "I") AND uses containment pressure instead of containment area radiation.
d. Incorrect. Plausible if examinee implements T.S. 3.3.3 similiar to TS 3.3.1 and 3.3.1 by going to the table first and entering the condition listed in the table (in this case "I").

K/A Number:
072 Area Radiation Monitoring (ARM) System
A2.01:
Ability to (a) predict the impacts of the following malfunctions or operations on the ARM system- and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:
Erratic or failed power supply

Technical Reference(s): T.S. LCO 3.3.3

Proposed references to be provided to applicants during examination: T.S. LCO 3.3.3

Learning Objective: P8182L-002 Obj. 10C

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

Question History: Last NRC Exam ___N/A_____

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

10 CFR Part 55 Content:
55.41 ____
55.43 __2__

Comments:

94. P8184L-002 103/2.1.7/4.4/4.7/10C/YES/P8100/T.S. 3.2.4//2014 ILT NRC S94

Given the following conditions:

- Unit 1 is at 96% power.
- Quadrant Power Tilt Ratio (QPTR) is 1.05.

- T.S. LCO 3.2.4 is provided.

Technical Specification LCO 3.2.4 requires thermal power to be reduced to less than _____ within 2 hours of QPTR determination.

A. 91%

B. 87%

C. ✔ 85%

D. 81%

3 - SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(2) Tech Specs. The question can NOT be answered by solely knowing < 1 hour TS actions OR by solely knowing the LCO "above the line" information OR by solely knowing TS Safety Limits. The question requires the application of required actions for TS 3.2.4.

Justifications:
a. Incorrect. Plausible if examinee incorrectly subtracts 1.02 from 1.05 instead of 1.00 from 1.05.
100 - [3(3)]% = 91%
b. Incorrect. Plausible if examinee incorrectly reduces power by the correct amount but from the current power level instead of RTP and incorrectly subtracts 1.02 from 1.05 instead of 1.00 from 1.05.
96% - [3(3)]% = 87%
c. Correct.
100% - [5(3)]% = 85%
d. Incorrect. Plausible if examinee incorrectly reduces power by the correct amount but from the current power level instead of RTP.
96% - [5(3)]% = 81%

K/A Number:
Conduct of Operations
2.1.7
Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

Technical Reference(s): T.S. 3.2.4

Proposed references to be provided to applicants during examination: T.S. 3.2.4

Learning Objective: P8184L-002 Obj. 10C

Question Source: Bank #: _____
Modified Bank #: P8184L-002 099
New: _____

Question History: Last NRC Exam: N/A

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

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

Comments:

95. P9150L-024 038/2.2.5/2.2/3.2/2/YES/P8100/FP-E-SE-03/FP-E-MOD-03/2014 ILT NRC S95

Given the following conditions:

- Unit 2 is at 100% power.
- 2HD-4-3, SCAV STM FROM 1B MSR TO 25B FW HEATER, has a body to bonnet leak.
- The leak cannot be stopped by torquing the body to bonnet studs.
- Furmanite will perform an INJECTION LEAK SEAL to stop the body to bonnet leak.

- 2HD-4-3 will be replaced during the Unit 2 scheduled outage.
- The Unit 2 scheduled outage is in 135 days.

Which of the following is REQUIRED to perform the Furmanite repair to 2HD-4-3?

	50.59 Screening	Temporary Modification
A.	NO	NO
B.	NO	YES
C.	YES	NO
D.✔	YES	YES

1-F

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(3) Facility licensee procedures required to obtain authority for design and operating changes to the facility. This question requires knowledge of 10CFR50.59 screening process and the administrative process for temporary modifications.

Justifications:
a. Incorrect. Plausible if examinee is not familiar with the requirements for 50.59 screening and t-mods and incorrectly believes neither is required.
b. Incorrect. Plausible as a T-Mod is required; however, a 50.59 screening is also required.
c. Incorrect. Plausible as a 50.59 screening is required; however, a T-Mod is also required.
d. Correct.

K/A Number:
Equipment Control
2.2.5
Knowledge of the process for making design or operating changes to the facility.

Technical Reference(s): FP-E-SE-03 page 19-23, FP-E-MOD-03 page 3.

Proposed references to be provided to applicants during examination: None

Learning Objective: P9150L-024 Obj. 2

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

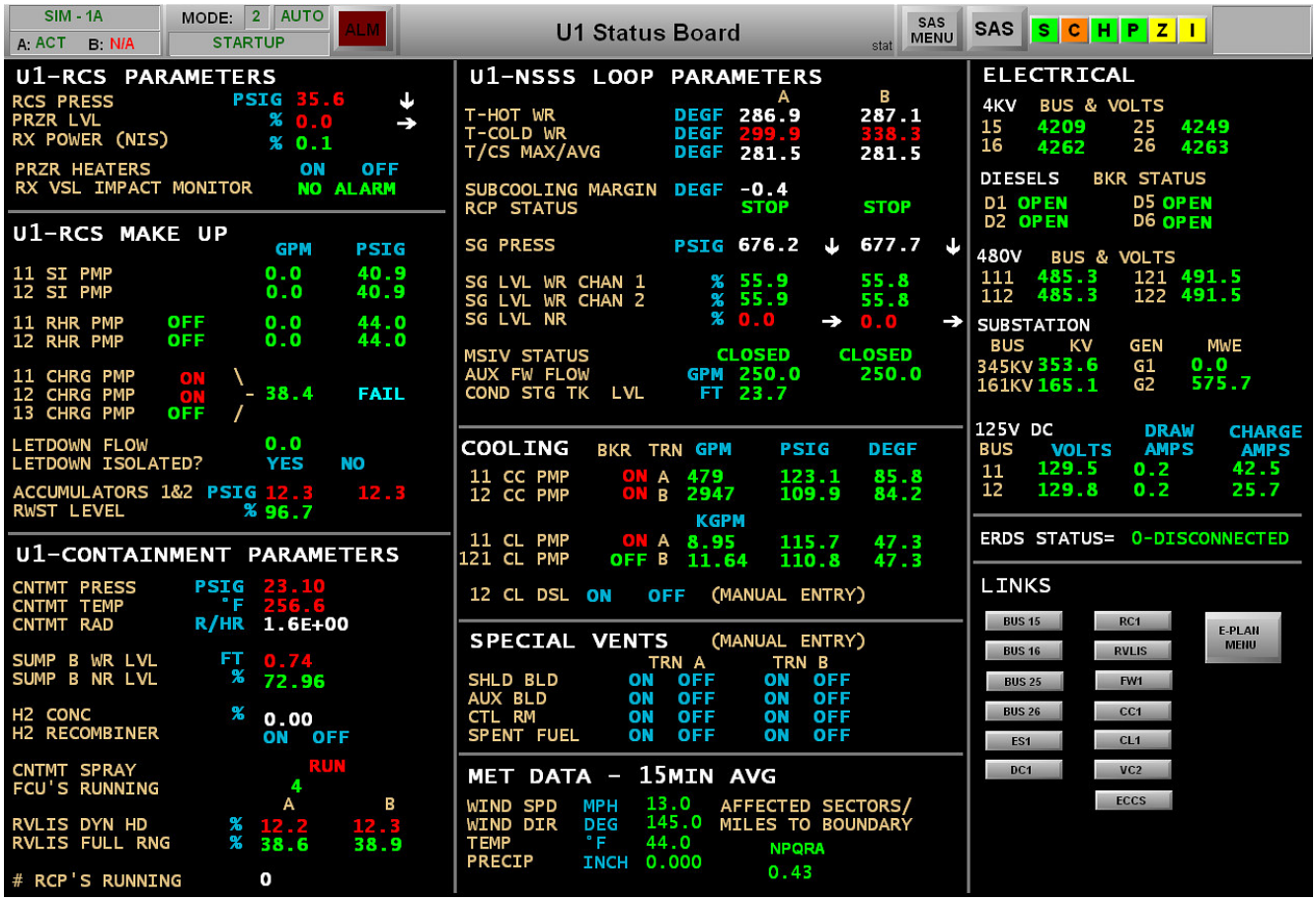
Question History: Last NRC Exam N/A

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

10 CFR Part 55 Content:
55.41 _____
55.43 3

Comments:

96. P7410L-002 048/2.2.44/4.2/4.4/3/YES/P8100/PINGP 1576/F3-2/2014 ILT NRC S96
Given the following conditions:



- PINGP 1576, Emergency Classification Tables, is provided.

Based ONLY on the ERCS STAT screen above, what is the status of the following fission product barriers?

	Fuel Cladding	RCS	Containment
A. ✔	POTENTIAL LOSS	LOSS	INTACT
B.	POTENTIAL LOSS	INTACT	INTACT
C.	INTACT	LOSS	INTACT
D.	INTACT	INTACT	POTENTIAL LOSS

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(6) Procedures and limitations involved in alterations in core configuration. This question requires evaluating emergency classifications based on core conditions.

Justifications:
a. Correct. A potential loss of fuel cladding barrier is indicated by the Core Cooling CSF being orange and by RVLIS full range less than 40% with both RCPs stopped. A loss of RCS is indicated by subcooling being less than 35F (containment is adverse because pressure is greater than 5 psig). Containment is intact because pressure is less than 46 psig. Also both trains of depressurization equipment (CFCU & CS) are operating.
b. Incorrect. Plausible as there is a potential loss of fuel cladding; however, the RCS is NOT intact.
c. Incorrect. Plausible as there is a loss of RCS; however, fuel cladding is NOT intact.
d. Incorrect. Plausible if examinee incorrectly believes RVLIS level is ok because it is green instead of red on the STAT screen and misses that Core Cooling is orange. Also, if examinee does not notice the RCS is at saturation indicating a LB LOCA condition. Also, if examinee incorrectly believes containment is potentially loss because containment pressure is above 23 psig; however, this will only cause containment to be potentially loss if there is less than one full train of depressurization equipment running. According to the STAT screen in this case, both trains are operating.

K/A Number:
Equipment Control
2.2.44:
Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.

Technical Reference(s): PINGP 1576, F3-2

Proposed references to be provided to applicants during examination: PINGP 1576

Learning Objective: P7410L-002 Obj 3

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

Question History: Last NRC Exam ___N/A_____

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

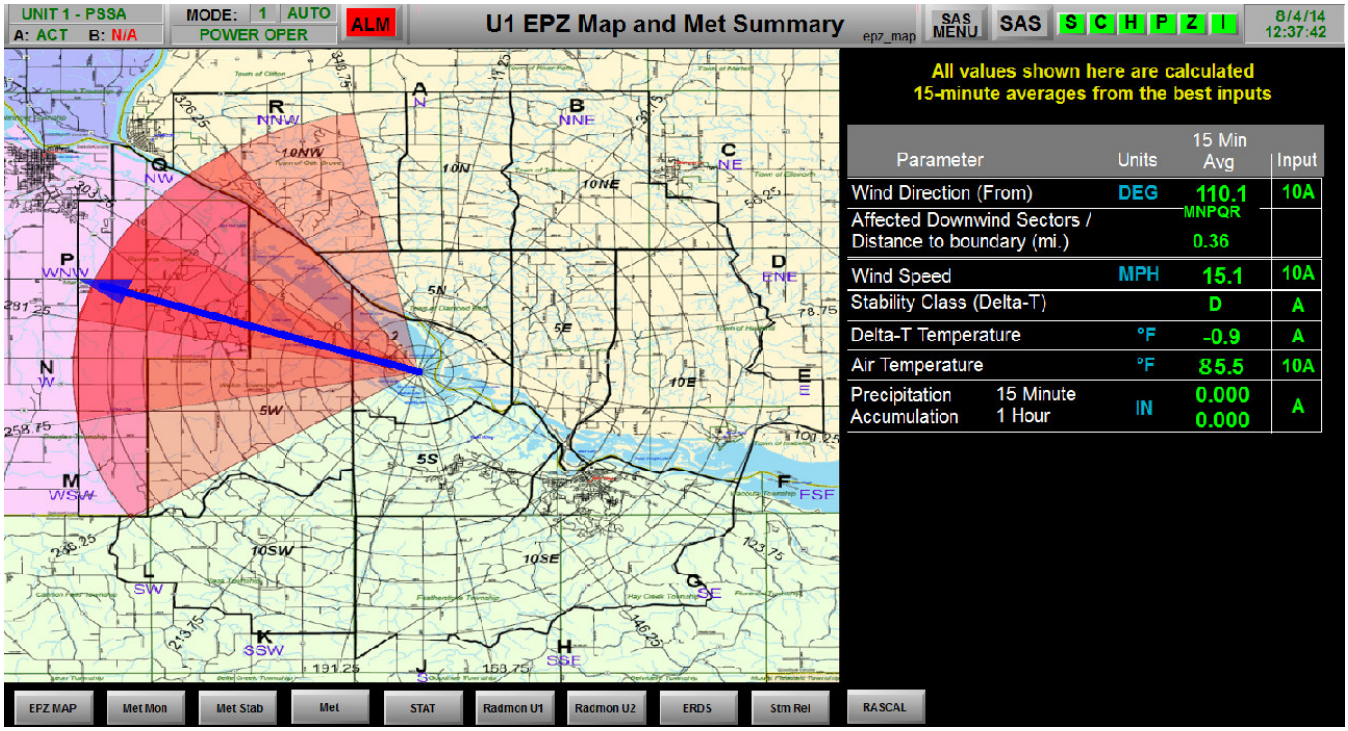
10 CFR Part 55 Content:
55.41 _____
55.43 __6__

Comments:

97. P8182L-001C 137/2.3.6/2.0/3.1/6/YES/P8100/H4 ODCM/C21.3-10.1/2014 ILT NRC S97

Given the following conditions:

- Preparations for a gaseous radioactive waste release from 121 Low Level Gas Day Tank are in progress.



- C21.3-10.1, Releasing Radioactive Gas from 121 Low Level Gas Decay Tank, is provided.

The Shift Supervisor will _____ the release because _____.

A. NOT approve
precipitation is occurring

B. NOT approve
wind speed is greater than 10 mph

C.✔ approve
wind direction is from 110°

D. approve
cooling towers are not in operation

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(4) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions. This question requires knowledge of the process for gaseous release approvals.

Justifications:
a. Incorrect. Plausible if examinee incorectly believes that precipitation is occurring.
b. Incorrect. Plausible as wind speed is greater than 10 mph; however, the permit would be approved.
c. Correct. Four limits apply in C21.3-10.1: Permit SHALL NOT be approved if ALL 3 of the following are met: 1) ANY CT in operation 2) Wind direction between 330-360 or 0-60 AND 3) wind speed < 10 mph; also 4) permits should NOT be approved if precipitation is occurring.
With the given information the examinee must identify that CTs are in operation based on U1 in Mode 1 during the April - Oct summer months, wind direction is from 110, wind speed is 15 mph, AND it is NOT raining.
d. Incorrect. Plausible as the permit will be approved based on wind speed and direction; however, cooling towers are in operation but would not be a factor.

K/A Statement:
Radiation Control
2.3.6
Ability to approve release permits.

Technical Reference(s): H4 ODCM pages 32 & 33, C21.3-10.1 page 3.

Proposed references to be provided to applicants during examination: C21.3-10.1

Learning Objective: P8182L-001C Obj. 6

Question Source: Bank # __P8182L-001C 005__
Modified Bank # _____
New _____

Question History: Last NRC Exam ___N/A_____

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

10 CFR Part 55 Content:
55.41 _____
55.43 _4__

Comments:

98. P8197L-013 114/2.3.14/3.3/4.0/7/YES/P8100/1E-3 STEP 7 BASES//2014 ILT NRC S98

Given the following conditions:

- The crew is on step 7, Initiate RCS Cooldown, of 1E-3, Steam Generator Tube Rupture.

The Shift Supervisor will direct the crew to initiate RCS cooldown by releasing steam via the _____ from the _____ steam generator because this path will _____.

A. Condenser Steam Dump
ruptured
prevent pressurizing the steam generator to RCS pressure

B. ✔ Condenser Steam Dump
intact
minimize radiological release

C. PORV
ruptured
prevent radiological contamination of the Main Steam system

D. PORV
intact
ensure adequate capacity to cooldown the RCS

1-B

This question is linked to 10 CFR 55.43(b)(4) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions. This question requires knowledge interpretation of radiation and activity readings as they pertain to selection of emergency procedures.

Justifications:
a. Incorrect. Plausible as steam will be released from the ruptured steam generator as needed; however, in this case it is to prevent overpressurization of the SG. The intact SG would be used for RCS cooldown.
b. Correct.
c. Incorrect. Plausible as the ruptured steam generatorwill maintain pressure using PORVs as needed AND radiological concerns are appropriate;however, in this case PORVs are to prevent overpressurization of the SG and cooldown would be from the intact SG to condenser.
d. Incorrect. Plausible as the intact steam generator is the appropriate choice for the cooldown; however, in this case the PORVs would not be used; also if examinee incorrectly believes capacity of the steam dumps is not adequate.

K/A Statement:
Radiation Control
2.3.14:
Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.

Technical Reference(s): 1E-3 Step 7 Bases pages 5 & 6.

Proposed references to be provided to applicants during examination: None

Learning Objective: P8140L-242 Obj. 7

Question Source: Bank #: P8197L-013 114
Modified Bank #: _____
New: _____

Question History: Last NRC Exam 2010 ILT NRC

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

10 CFR Part 55 Content:
55.41 _____
55.43 4

Comments:

99. P8197L-011 116/2.4.19/3.4/4.1/7/YES/P8100/1ECA-0.0/SWI O-10/2014 ILT NRC S99

Given the following conditions:

- A loss of all AC power has occurred on Unit 1.
- The crew is performing step 18 of 1ECA-0.0, Loss of All Safeguards AC Power.
- Bus 15 is locked out.
- Bus 16 is locked out.
- Containment pressure is 0.6 psig and stable.
- Containment radiation is 1.6×10^0 R/H.

- 11 SG indications are as follows:
  - NR level is 6% and stable.
  - WR level is 58% and stable.
  - AFW flow is 50 gpm.

- 12 SG indications are as follows:
  - NR level is 55% and rising rapidly.
  - WR level is 62% and rising.
  - AFW flow is 50 gpm.

- 1ECA-0.0 is provided.

The NEXT action the Shift Supervisor will direct is...

A. establish Battery Room Cooling per step 19.

B. ✔ isolate AFW flow to 12 SG per step 17.b RNO.

C. raise total AFW flow to 200 gpm per step 17.a RNO.

D. raise ONLY 11 SG AFW flow to 150 gpm per step 17.b.

3-SPR

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(5) Assessment and selection of procedures. The question can NOT be answered by solely knowing "systems knowledge" OR by solely knowing immediate operator actions OR by solely knowing entry conditions for AOPs or plant parameters that require direct entry to MAJOR EOPs OR by solely knowing the purpose overall sequence of events or overall mitigative strategy of a procedure. The question requires assessing plant conditions (normal, abnormal, or emergency) and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed.

Justifications:
a. Incorrect. Plausible if examinee does not understand that step 17 is a continuous action step.
b. Correct. Step 17 is annotated as a continous action step with a triangle. Since 12 SG level is rising uncontrollable, Step 17.b. RNO directs the operator to isolate AFW flow to the ruptured SG.
c. Incorrect. Plausible if the examinee incorrectly believes that containment is adverse and uses Attachment E values for required SG levels in step 17.a.
d. Incorrect. Plausible if examinee incorrectly believes 11 SG level is too low and level needs to be raised in 11 SG.

K/A Number:
Emergency Procedures / Plan
2.4.19
Knowledge of EOP layout, symbols, and icons.

Technical Reference(s): 1ECA-0.0 pages 17 & 18, SWI O-10 page 10.

Proposed references to be provided to applicants during examination: All steps of 1ECA-0.0, but no background information.

Learning Objective: P8140L-247 Obj. 7

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

Question History: Last NRC Exam ___N/A_____

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

10 CFR Part 55 Content:
55.41 ____
55.43 __5__

Comments:

100. P9150L-011 003/2.4.40/2.7/4.5/5/YES/P8100/F3-2//2014 ILT NRC S100

Given the following conditions:

- The Control Room observes indications of a LOCA at 0200.
- The Shift Manager declares an Alert at 0205.
- The PINGP-577 is completed at 0210.

What are the LATEST ALLOWABLE notification times?

	States and Counties	NRC
A.	0215	0300
B.✔	0220	0305
C.	0220	0310
D.	0225	0310

1-F

EXPLANATION:
This question is linked to 10 CFR 55.43(b)(1) Conditions and limitations in the facility license. This question requires knowledge of government notification requirements per 10CFR50.72.

Justifications:
a. Incorrect. Plausible if examinee incorrectly believes the clock starts for notifications at time of accident instead of time of classification.
b. Correct. 10CFR50, App. E requires state and local government notification to be made within 15 minutes from time of emergency declaration. Also, 10CFR50.72 (a)(3) requires NRC notification to be made immediately after the notification of the state and local governments and not later than one hour after the emergency declaration.
c. Incorrect. Plausible if examinee incorrectly believes the NRC notifications clock starts when the PINGP-577 is completed.
d. Incorrect. Plausible if examinee incorrectly believes the offsite notification and NRC notification clock starts when the PINGP-577 is completed.

K/A Number:
Emergency Procedures / Plan
2.4.40
Knowledge of SRO responsibilities in emergency plan implementation.

Technical Reference(s): F3-2 pages 9 -11.

Proposed references to be provided to applicants during examination: None

Learning Objective: P9150L-011 Obj. 5

Question Source: Bank # _____
Modified Bank # P9150L-011 003
New _____

Question History: Last NRC Exam N/A

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

10 CFR Part 55 Content:
55.41 _____
55.43 1

Comments:

You have completed the test!