

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>1</u>
	K/A #	<u>295004 AA2.03</u>	
	Importance Rating	_____	<u>2.9</u>

K/A Statement: Ability to determine and/or interpret the following as they apply to partial or complete loss of DC power: Battery Voltage

Proposed Question: **Question 76**

Unit 1 is in Mode 1

- 125 VDC Div 2 Battery Charger 1BB is OOS

Subsequently,

- 125 VDC Div 2 Battery Charger 1BA has FAILED
- 125 VDC Div 2 Battery 1DC14E voltage indicates 129.0 volts

The Unit Supervisor should enter Technical Specification(s) _____ .

- TS 3.8.4, DC Sources – Operating, Condition A AND TS 3.8.6 – Battery Parameters, Condition A
- TS 3.8.6 – Battery Parameters, Condition A ONLY
- TS 3.8.4, DC Sources – Operating, Condition A ONLY
- TS 3.8.7, Distribution Systems – Operating, Condition A ONLY

Proposed Answer: C

Explanation:

- A) Incorrect. Plausible as TS 3.8.4, DC Sources – Operating, Condition A is applicable and the bus voltage listed is outside of the band listed in the AOP but no indications exist that the battery ICVs are affected.
- B) Incorrect. Plausible as battery float voltage is slightly lower than the normal band. There is no data showing ICV float voltage is below the TS limits of TS 3.8.6.
- C) Correct. TS 3.8.4, Condition A is required to be entered with one required battery charger failed on a 125 VDC ESF bus.
- D) Incorrect. Plausible as LOA-DC-101 directs the applicant to lineup the standby battery charger within 2 hours to recover normal conditions on the 125 VDC bus.

Technical Reference(s): LOA-DC-101, Rev 25, Unit 1 DC Power System Failure;
LOR-1PM01J – B507, Rev 3, 125 VDC Bus 1B Undervoltage; TS 3.8.4, Amend 179/165, DC Sources–Operating and associated Basis document; TS 3.8.7, Amen 200/187, Distribution System–Operating and associated Basis document; Training Drawing DC-1, Rev 3, DC Distribution

Proposed references to be provided to applicants during examination: **TS 3.8.4, 3.8.6, 3.8.7 with above the line and less than 1 hour actions and completion times blank**

Learning Objective: 006.00.022: Given a copy of Technical Specifications, key DC Distribution System parameters, and various plant conditions, determine if Technical Specification LCOs are met, the basis for the LCO and identify the required actions in accordance with Technical Specifications, while operating the system or on an exam.

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge
 Comprehension or Analysis 2

10 CFR Part 55 Content: 41.10 / 43.5 / 45.13

SRO Justification: 10 CFR 55.43.(b)(2)

Facility operating limitations in the technical specifications and their bases. Below the line.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>1</u>
	K/A #	<u>295005 G2.1.7</u>	
	Importance Rating	_____	<u>4.7</u>

K/A Statement: Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation: Main Turbine Generator Trip.

Proposed Question: **Question #77**

Unit 1 was at 20% RTP when the following occurred:

- Main turbine bearings 11 and 12 indicate 11.5 mils at BOTH 1PM02J and the TSI panel

The Unit Supervisor will FIRST direct the crew to (1) , and the basis for this action is to (2) .

- A. (1) trip the turbine
(2) protect the turbine from balancing problems before damage can occur
- B. (1) scram the reactor
(2) protect the turbine from balancing problems before damage can occur
- C. (1) trip the turbine
(2) ensure the fuel cladding integrity safety limit is NOT violated
- D. (1) scram the reactor
(2) ensure the fuel cladding integrity safety limit is NOT violated

Proposed Answer: A

Explanation:

- A) Correct. LOA-TG-101 states to trip the turbine if attachment A setpoints are exceeded. This is true for both 11 and 12 bearings being above 10 mils. High turbine vibrations are an indication of an unbalanced condition and are a precursor to turbine damage.
- B) Incorrect. Plausible because this would be correct above 25% RTP. LOA-TG-101 states to trip the turbine if attachment A setpoints are exceeded. This is true for both 11 and 12 bearings being above 10 mils. However, anytime you are required to trip the main turbine above 25%, a manual scram is required first to prevent an automatic reactor scram.
- C) Incorrect. Plausible because the first part is correct for high vibrations on bearings 11 and 12. The second part would be correct for a turbine trip above 25% RTP.
- D) Incorrect. Plausible because this would be correct above 25% RTP. LOA-TG-101 states to trip the turbine if attachment A setpoints are exceeded. This is true for both 11 and 12 bearings being above 10 mils. However, anytime you are required to trip the main turbine above 25%, a manual scram is required first to prevent an automatic reactor scram.

Technical Reference(s): 071 Main Turbine, (pp. 24-25, 31) Rev 12; LOA-TG-101 Rev. 020, (p.13); B 3.3.2.2 High Water Level Trip Instrumentation Rev. 000 (pp 2-3)

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 071.00.10: Recall the signals which cause a Main Turbine and Auxiliary Systems component trip, including setpoints, logic, how and when bypassed and how reset, and predict system response while operating the system on an exam in accordance with the student text and station procedures.

Question Source: Bank # _____

 Modified Bank # _____ (Note changes or attach parent)

 New X

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge _____

 Comprehension or Analysis 2

10 CFR Part 55 Content: 55.43 5

SRO Justification: 10 CFR 55.43(b)(5)

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. This question examines the SRO applicant's ability to assess the plant conditions and determine that a turbine is required. The applicant must have the ability to determine which actions to direct the crew to perform IAW AOPs and understand the basis behind these actions.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>1</u>
	K/A #	<u>295016 AA2.05</u>	
	Importance Rating	_____	<u>3.9</u>

K/A Statement: Ability to determine and/or interpret the following as they apply to control room abandonment: Drywell Pressure

Proposed Question: **Question 78**

Unit 1 was at 100% RTP:

- The control room was abandoned per LOA-FX-101, "Unit 1 Safe Shutdown with a Fire in the Control Room or AEER"
- The SCRAM was successful and all MSIVs CLOSED
- Control was NOT established at the Remote Shutdown Panel (RSDP) for 34 minutes

The Unit Supervisor will enter EAL (1) .

While at the RSDP, a LOCA occurs:

- Drywell pressure is 47 psig and lowering rapidly with NO operator action
- Reactor water level is below the Wide Range and NOT recovering

The Unit Supervisor will enter EAL (2) .

- A. (1) HA2, Alert
(2) FG1, General Emergency
- B. (1) HA2, Alert
(2) CG6, General Emergency
- C. (1) HS2, Site Area Emergency
(2) FG1, General Emergency
- D. (1) HS2, Site Area Emergency
(2) CG6, General Emergency

Proposed Answer: C

Explanation:

- A) Incorrect. Plausible as EP-AA-1005 directs an Alert to be declared for control room abandonment. However, there has been a loss of control of the Table H1 functions for greater than 30 minutes for an SAE. The second part is correct. EP-AA-1005 directs a General Emergency, FG1 to be declared due to a loss of Reactor Coolant System and Containment boundary and a potential loss of the Fuel Clad boundary.
- B) Incorrect. Plausible as Plausible as EP-AA-1005 directs an Alert to be declared for control room abandonment. However, there has been a loss of control of the Table H1 functions for greater than 30 minutes for a SAE. EP-AA-1005 directs a General Emergency, CG6 to be declared based on RPV water Level and Containment Challenge. However, it is only applicable in modes 4 or 5.
- C) Correct. EP-AA-1005, Addendum 3 requires for a control room evacuation AND if control of any Table H1 key safety function is not reestablished in less than 30 minutes is an HS2, Site Area Emergency. H1 Safety Functions are Reactivity control, RPV Water Level and RCS Heat Removal Capability. Control not being established at the RSDP represent the loss of the safety functions. EP-AA-1005 directs a General Emergency, FG1 to be declared due to a loss of Reactor Coolant System and Containment boundary and a potential loss of the Fuel Clad boundary.
- D) Incorrect. Plausible as EP-AA-1005, Addendum 3 requires for a control room evacuation AND if control of any Table H1 key safety function is not reestablished in less than 30 minutes is an HS2, Site Area Emergency. H1 Safety Functions are Reactivity control, RPV Water Level and RCS Heat Removal Capability. However, the second part is incorrect. EP-AA-1005 directs a General Emergency, CG6 to be declared based on RPV water Level and Containment Challenge. However, it is only applicable in modes 4 or 5.

Technical Reference(s): EP-AA-1005, Addendum 3, Rev 4, Emergency Action Levels for LaSalle Station; LOA-FX-101, Rev 30, Unit 1 Safe Shutdown with a Fire in the Control Room or AEER; LGA-001, Rev 18, RPV Control; LGA-004, RPV Blowdown; Lesson Plan LGA-001, Rev 25, RPV Control

Proposed references to be provided to applicants during examination: **Hot Matrix/Cold Matrix - EP-AA-1005, Addendum 3, Emergency Action Levels for LaSalle Station**

Learning Objective: 400.00.009 - Using LGA flowcharts recall situations that require a blowdown, while operating the plant or on an exam, IAW the LGA procedures.

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

Question History: **LaSalle 2016 NRC ILE (Q77)**

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>1</u>
	K/A #	<u>295019 G2.4.31</u>	
	Importance Rating	_____	<u>4.1</u>

K/A Statement: Knowledge of annunciators alarms, indications, or response procedures: Partial or Complete Loss of Instrument Air.

Proposed Question: **Question #79**

Unit 2 was in Mode 2 following a refueling outage when a major seismic event occurred.

- Drywell pressure is 20 psig and RISING
- Containment flood level is 710 ft
- 2PM10J-B204, INSTR AIR PRESSURE LO/HI, is LIT
- 2PI-AA022, Instrument Air Header Pressure, indicates 90 psig and LOWERING

IAW LGA-003, "Primary Containment Control," the Unit Supervisor will direct the crew to LGA-VQ-202, "Unit 2 Emergency Containment Vent" to vent from the (1) in order to (2).

- A. (1) suppression chamber using HCVS
(2) stay below the Primary Containment Pressure Limit
- B. (1) suppression chamber using VQ
(2) stay below the Primary Containment Pressure Limit
- C. (1) drywell using HVCS
(2) stay within the Pressure Suppression Pressure curve
- D. (1) drywell using VQ
(2) stay within the Pressure Suppression Pressure curve

Proposed Answer: A

Explanation: This question examines the applicants' knowledge of indications for a loss of instrument air, and how to vent the containment with a loss of instrument air. A major seismic event has caused a LOCA and an Instrument Air rupture. With drywell pressure at 20 psig and rising, the crew will be on Step 16 in LGA-003, which directs the crew to emergency vent the containment IAW LGA-VQ-202 prior to exceeding the PCPL. With a loss of instrument air, HCVS can be used to vent from the suppression chamber, or VQ can be used to vent from the drywell.

- A) Correct. LGA-003 step 16 directs the crew to vent containment IAW LGA-VQ-202. With a loss of instrument air, the US will direct the crew to go to Section E.2.d and vent from the suppression chamber using HCVS to stay below PCPL.
- B) Incorrect. Plausible as the crew has the option to vent using VQ, but with the loss of IA, the crew must vent from the drywell. The second part of the distractor is correct.
- C) Incorrect. HCVS is used to vent from the suppression chamber and is not aligned to the drywell. The Pressure Suppression Pressure curve is used as criteria to initiate blowdown and not used for containment vent criteria.
- D) Incorrect. Plausible as VQ can be used to vent from the drywell with a loss of instrument air. The second part of the distractor is incorrect, as the Pressure Suppression Pressure curve is used as criteria to initiate blowdown and not used for containment vent criteria.

Technical Reference(s): LGA-003 Rev. 018; LGA-VQ-201 Rev. 0, pp. 4-5; LGA-VQ-202 Rev. 5, pp. 4, 25; 120 Plant Air System, pp. 14, 22-23

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 120.00.15, 120.00.18b

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis 3

10 CFR Part 55 Content: 55.41 _____
55.43 5

SRO Justification: 10 CFR 55.43(b)(5) - Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency conditions. The applicant is required to assess the given emergency conditions due to a LOCA and implement the correct procedure due to a loss of instrument air.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 1 </u>
	Group #	_____	<u> 1 </u>
	K/A #	<u> 295025 EA2.03 </u>	
	Importance Rating	_____	<u> 4.1 </u>

K/A Statement: Ability to determine and/or interpret the following as they apply to high reactor pressure: Suppression Pool Temperature

Proposed Question: **Question 80**

The reactor was at 100% RTP when a SCRAM occurred due to a spurious MSIV closure:

- Multiple control rods did NOT insert to at least the 02 position
- One SRV is full OPEN and another is cycling OPEN/CLOSED

Subsequently,

- A Loss of Off-site Power occurred
- RPV water level is -70" (inches) and STABLE
- Suppression Chamber pressure is 1.8 psig and RISING SLOWLY
- Suppression Pool temperature is 160°F and RISING SLOWLY
- Suppression Pool Level is +1 ft
- Drywell Temperature is 130°F and RISING SLOWLY
- The crew is injecting with SBLC

What action will the Unit Supervisor direct NEXT?

- Using LGA-001, "RPV Control" reset isolations and reopen MSIVs, stabilize RPV pressure below 1059 psig using main turbine bypass valves.
- Using LGA-010, "Failure to SCRAM" rapidly lower RPV level until power drops below 3% or level drops to -120 inches on WR or all SRVs stay CLOSED and Drywell pressure stays below 1.93 psig.
- Using LGA-003, "Primary Containment Control" and start Drywell Sprays to lower drywell temperature.
- Using LGA-004, "RPV Blowdown" prevent LPCS and LPCI not needed for core cooling.

Proposed Answer: B

Explanation:

- A) Incorrect. Plausible as the crew would initially enter LGA-001 with APRMs above downscale with a scram signal present. The crew should transition to LGA-010 due to multiple control rods out. If they didn't recognize this and remained in LGA-001, they would direct this action under the pressure control leg if a loss of offsite power didn't occur and the condenser was available.
- B) Correct. The US would be in LGA-010, Failure to SCRAM and with power above 3%, RPV Level above -120 inches on WR, and SRV OPEN, and Suppression Pool Temperature > 110F, the override step has the US direct lowering RPV level until power drops < 3% OR RPV Level -120 inches OR SRVs stay closed AND DW pressure stays below 1.93 psig.
- C) Incorrect. Plausible as LGA-003 directs starting drywell sprays if Drywell Temperature is greater than 135 F. Although this condition is not presently met the candidate could see that it is trending towards that values.
- D) Incorrect. Plausible if the candidate loses sight of not meeting the entry conditions of LGA-004 since there has not been a spurious or valid automatic actuation of ADS.

Technical Reference(s): LGA-001, Rev 18, RPV Control; LGA-003, Rev 18, Primary Containment Control; LGA-004, Rev 9, RPV Blowdown; LGA-010, Rev 18, Failure to SCRAM; Lesson Plan for LGA-003, Rev 25, Primary Containment Control

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 400.00.14: Given plant conditions and LGA entry, recall major action categories and step basis, while operating the plant or on an exam, IAW the LGA procedures.

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

Question History: Last NRC Exam NA

Question Cognitive Level: Memory or Fundamental Knowledge
 Comprehension or Analysis 3

10 CFR Part 55 Content: 41.10 / 43.5 / 45.13

SRO Justification: 10 CFR 55.43.(b)(5) Assessing plant conditions and then selecting a procedure or section to mitigate, recover or with to proceed.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>1</u>
	K/A #	<u>295031 G2.4.8</u>	
	Importance Rating	_____	<u>4.5</u>

K/A Statement: Knowledge of how abnormal operating procedures are used in conjunction with EOPs: Reactor Low Water Level.

Proposed Question: **Question #81**

Unit 2 is in Mode 5:

- Fuel Pool gates are installed
- Fuel Pool level is 843' elevation and stable
- Reactor cavity level is 450" and lowering
- NO High Radiation alarms are present
- The crew has implemented LOA-NB-202 "Unit 2 Reactor Level Abnormal for Shutdown Conditions" and performed the following:
 - Verified Fuel Pool Gates installed
 - Verified Draining activities NOT in progress

The US will direct the crew to (1) LOA-NB-202 and implement (2).

- A. (1) continue in
(2) LGA-FW-201 "Alternate Vessel Injection Using MDRFP By Defeating MDRFP High Level Trip" to restore reactor cavity level
- B. (1) continue in
(2) LGA-002 "Secondary Containment Control" to establish secondary containment
- C. (1) exit
(2) LGA-002 "Secondary Containment Control" to establish secondary containment
- D. (1) exit
(2) LGA-FW-201 "Alternate Vessel Injection Using MDRFP By Defeating MDRFP High Level Trip" to restore reactor cavity level

Proposed Answer: A

Explanation:

A leak has occurred in Mode 5 with the fuel gates just being installed. IAW LGP-3-5, the reactor cavity level should be maintained between 480" and 485". The crew will implement LOA-NB-202. With the cavity level lowering, the crew will restore level using one of many emergency makeup sources, the first one listed is from the main feed system using LGA-FW-201, while concurrently performing the steps in LOA-NB-202. The crew will establish secondary containment, but the crew will not exit LOA-NB-202 or implement LGA-002. Secondary containment is established in LOA-NB-202.

- A) Correct. LOA-NB-202 directs the crew to enter LGA-FW-201 to restore cavity level while concurrently performing the actions in LOA-NB-202.
- B) Incorrect. Plausible because the first part of the distractor is correct, and because with a reactor cavity leak, the crew will establish secondary containment but the entry conditions for LGA-002 are not met.
- C) Incorrect. Plausible because with a reactor cavity leak, the crew will establish secondary containment, but LOA-NB-202 does not direct the crew to exit the procedure, and the entry conditions for LGA-002 are not met.
- D) Incorrect. Plausible because the second part of the distractor is correct, the crew will NOT exit LOA-NB-202.

Technical Reference(s): LGA-FW-201 Rev. 000, p. 5; LGP-3-5 Rev. 013, p. 18;
LOA-NB-202 Rev. 003, pp. 4-5

Proposed references to be provided to applicants during examination: N/A Learning Objective:

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis 3

10 CFR Part 55 Content: 55.43 5

SRO Justification: 10 CFR 55.43(b)(5) - Assessment of facility conditions and selection of appropriate procedures during abnormal and emergency conditions. The applicant is required to assess the abnormal lowering cavity level, and know the correct emergency procedure in conjunction with the correct abnormal procedure to refill the cavity level.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>1</u>
	K/A #	<u>295037 EA2.07</u>	
	Importance Rating	_____	<u>4.2</u>

K/A Statement: Ability to determine and/or interpret the following as they apply to SCRAM condition present and reactor power above APRM downscale or unknown: Containment conditions/isolations

Proposed Question: **Question 82**

Unit 1 was 100% RTP:

- A Group 1 isolation occurred
- NO rods moved following the ATWS choreography

Subsequently,

- A leak developed in the Drywell
- The crew is carrying out the actions of LGA-010, "Failure to SCRAM" and LGA-003, "Primary Containment Control"
- Suppression Pool Water Temperature is 160°F and RISING
- Containment Flood Level is 725 ft due to CY leaking into RHR
- RPV Pressure is at 950 psig
- Drywell Pressure is 56 psig and slowly RISING
- Suppression Chamber Pressure is 56 psig and slowly RISING
- Boron, CRD and RCIC are the ONLY systems injecting

Which BEST describes the actions the Unit Supervisor should direct?

- Open the MSIVs per LGA-MS-101, "Using Main Condenser as Heat Sink in ATWS" to depressurize the RPV and insert control rods per LGA-NB-01, "Alternate Rod Insertion" via METHOD 3 ONLY
- Emergency RPV Depressurize per LGA-006, "ATWS Blowdown" and Emergency Vent the Drywell per LGA-VQ-102, "Emergency Containment Vent"
- Spray the Suppression Chamber and Drywell per LGA-003 and Emergency vent from the Suppression Chamber per LGA-VQ-102, "Emergency Containment Vent"
- Spray the Suppression Chamber and Drywell per LGA-003 and Emergency Vent the Drywell per LGA-VQ-102, "Emergency Containment Vent"

Proposed Answer: B

Explanation:

- A) Incorrect. Plausible as the US should direct these actions per LGA-010 if the crew were not performing LGA-006 as required by primary containment conditions and LGA-003. The override step in the power leg of LGA-010 precludes performing reopening the MSIVs if LGA-006 is in use.
- B) Correct. With suppression pool water level above 723 feet, drywell and suppression pool sprays are not permitted with the vacuum breakers submerged and venting from the suppression pool is not permitted. Therefore, with containment pressure approaching the PCPL curve and above RPV Blowdown requirements, the US should direct LGA-006 for an RPV Blowdown during an ATWS and emergency vent the drywell per LGA-VQ-102.
- C) Incorrect. Plausible as LGA-003 would have directed suppression pool and drywell sprays to address high pressure conditions if suppression pool level was < 722 feet. In addition, the suppression pool is the normal first choice for venting to maximize scrubbing of radioactive particulates.
- D) Incorrect. Plausible as LGA-003 would have directed suppression pool and drywell sprays to address high pressure conditions if suppression pool level was < 722 feet. The second half is correct.

Technical Reference(s): LGA-003, "Primary Containment Control," Rev 18; LGA-010, "Failure to SCRAM," Rev 18; Lesson Plan, "LGA-003, Primary Containment Control," Rev 25; LGA-VQ-102, "Emergency Containment Vent," Rev 3

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 400.00.09: Using LGA flowcharts recall situations that require a blowdown, while operating the plant or on an exam, IAW the LGA procedures.

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

Question History: Last NRC Exam Pilgrim 2007 NRC ILE Q81

Question Cognitive Level: Memory or Fundamental Knowledge —
 Comprehension or Analysis 3

10 CFR Part 55 Content: 41.10 / 43.5 / 45.3 / 45.12

SRO Justification: 10 CFR 55.43.(b)(5) Assessing plant conditions and then selecting a procedure or section to mitigate, recover or with to proceed.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 1 </u>
	Group #	_____	<u> 2 </u>
	K/A #	<u>295002 AA2.02</u>	
	Importance Rating	_____	<u> 3.3 </u>

K/A Statement: Ability to determine and/or interpret the following as they apply to loss of main condenser vacuum: Reactor power.

Proposed Question: **Question #83**

Unit 1 was at 24% RTP:

- 1PM03J-B511, CNDSR VAC LO, is LIT

Subsequently,

- Reactor power reduced to 20% RTP

As a result:

- Condenser vacuum degraded to 10 inches backpressure and is now STABLE

(1) What is the expected automatic plant response with NO operator action?

(2) What procedure MUST be implemented to address the automatic plant response?

- A. (1) Reactor power will be greater than 20% RTP
(2) LGP-3-2, "Reactor SCRAM"
- B. (1) Reactor scram
(2) LGP-3-2, "Reactor SCRAM"
- C. (1) Reactor power will be greater than 20% RTP
(2) LOA-TG-101, "Unit 1 Turbine Generator"
- D. (1) Reactor scram
(2) LOA-TG-101, "Unit 1 Turbine Generator"

Proposed Answer: C

Explanation:

With condenser vacuum at 10" backpressure and stable, the turbine will automatically trip. At 20% RTP, the reactor will not scram when the turbine trips. The TDRFPs trip at 17" Hg, so they will not trip. With the turbine tripped, there will be a loss of feedwater heating, and therefore cold feedwater is being injected into the RPV, causing power to rise. Therefore, the crew will enter LOA-TG-101. The alarm response manual LOR-1PM03J-B511 directs a reactor scram IAW LGP-3-2 based on the low vacuum and LOA-TG-101 also directs a reactor trip if the turbine trips and power is not stable.

- A) Incorrect. Plausible because the first part of the distractor is correct. The second part of the distractor is plausible if the applicant believes the condenser vacuum has lowered to the point where the turbine tripped and resulted in a reactor scram and bypass valves opened and maintained power above 20%.
- B) Incorrect. Plausible if the applicant believes reactor power is at the level where a turbine trip causes a reactor scram, and that condenser vacuum is low enough to cause the TDRFPs to trip.
- C) Correct. When the turbine trips and the reactor does not scram, there is a loss of feedwater heating due to the loss of extraction steam to the feedwater heaters. With the loss of feedwater heating, cold feedwater is added to the RPV, causing a positive reactivity addition. The crew will implement LOA-TG-101 for the turbine trip.
- D) Incorrect. Plausible if the applicant believes reactor power is at the level where a turbine trip causes a reactor scram. The second part of the distractor is correct.

Technical Reference(s): LOA-TG-101 Rev. 020, pp. 4-5; LOR-1PM03J-B511 Rev. 006;
LGP-3-2 Rev. 074, p. 31; LGA-001 Rev. 018

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 075.00.14

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

Question History: Last NRC Exam Susquehanna 2003 ILT Exam (Q84)

Question Cognitive Level: Memory or Fundamental Knowledge ___
Comprehension or Analysis 3

10 CFR Part 55 Content: 55.43 5

SRO Justification: 10 CFR 55.43(b)(5)

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The applicant must assess the loss of condenser vacuum has caused the turbine to trip, but the reactor did not scram. Then using this assessment, must select the appropriate AOP to address the plant conditions.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>2</u>
	K/A #	<u>295010 G2.2.44</u>	
	Importance Rating	_____	<u>4.4</u>

K/A Statement: 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.

Proposed Question: **Question 84**

Unit 1 is at 100% RTP, with the 1B VP Chill Water Pump OOS, when the following occurred:

- The running Primary Containment Ventilation Fan TRIPPED on overcurrent
- 1H13-P603-B501, PRI CNMT PRESSURE HI/LO is LIT
- LGA-003, "Primary Containment Control" was entered on High Drywell TEMPERATURE
- The crew commenced venting per LGA-VQ-101, "Containment Vent"

20 minutes later Primary Containment Pressure High alarm CLEARED.

Subsequently,

- 1PM13J-B501, PRIMARY CNMT CAM PNL 1PL75J TROUBLE – R1164/1170 CAM Pnl 1PL75J Part/Gas Rad Hi
- 1PM13J-A501, ATMOS CNMT MON PANEL 1PL15J TROUBLE – R0516/0521 Atmos Cnmt Mon 1PL15J Part/Gas Rad Hi
- 1N62-P600-B304, STA VENT STACK WIDE RANGE RAD HI
- 1H13-P603 B501, PRI CNMT PRESSURE HI/LO is LIT again
- Drywell pressure is 0.6 psig and SLOWLY RISING

What action(s) will the Unit Supervisor direct NEXT?

- Secure the LGA-VQ-101 containment venting line up and perform LGP-3-2, "Reactor SCRAM"
- Continue venting per LGA-VQ-101 Containment Vent, cycling of the containment high pressure alarm is an expected response
- Continue venting per LGA-VQ-101 Containment Vent and have chemistry sample the Primary Containment
- Secure the LGA-VQ-101 containment venting line up and have Chemistry sample the Primary Containment

Proposed Answer: A

Explanation:

- A) Correct. The ability to interpret control room indications to verify the status and operation of a system occurs when the primary containment high pressure alarm comes in a second time. This trend is not consistent with the heat up of the containment without a primary containment chiller. The candidate has to understand this change of alarm status to choose the correct answer. When the Hi rad alarms and containment pressure alarm comes in, a change in drywell parameters has occurred. The correct action is to secure the venting, because LGA-VQ-101 does not allow this operation if a Station Vent Stack WRGM Rad Hi alarm is received. Without a running loop of primary containment ventilation and evidence of a leak the next correct action is to scram the unit is the appropriate action. The unit will scram due to the pressure rise in the containment with no remedial actions.
- B) Incorrect. Plausible distractor if candidate believes LGA-VQ-01 has similar allowances for venting as LGA-VQ-02 EMERGENCY CONTAINMENT VENT. This LGA-VQ-02 is performed further down the pressure leg of LGA-003 Primary Containment Control after 1.93 psig is exceeded in the drywell.
- C) Incorrect. Plausible distractor by securing the LGA-VQ-01 lineup but is incorrect because Chemistry sampling is NOT the first action the crew is to perform.
- D) Incorrect. Plausible distractor if candidate believes LGA-VQ-01 has similar allowances for venting as LGA-VQ-02. This LGA is performed further down the pressure leg of LGA-003 Primary Containment Control and does not limit operation based on 1PL75J/1PL15J hi rad alarms. Chemistry sampling the drywell is directed by the LOR actions but this NOT the first actions the crew is to perform.

Technical Reference(s): LGA-003, "PRIMARY CONTAINMENT CONTROL" Rev 18; LGA-VQ-101, "CONTAINMENT VENT," Rev 1; LOR-1H13-P603-B501 PRIMARY CONTAINMENT PRESSURE HI AND LO, Rev 4; 1N62-P600-B304 STATION VENT STACK RADIATION HIGH, Rev ; 1PM13J-A501/B501 ATMOSPHERE MONITORING PANEL 1PL15J TROUBLE/1PL75J TROUBLE, Rev 5

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 400.00.14: Given plant conditions and LGA entry, recall major action categories and step basis, while operating the plant or on an exam, IAW the LGA procedures.

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

Question History: Last NRC Exam LaSalle 2014 NRC ILE (Q83)

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis

3

10 CFR Part 55 Content: 41.5 / 43.5 / 45.12

SRO Justification: 10 CFR 55.43.(b)(5) Assessing plant conditions and then selecting a procedure or section to mitigate, recover or with to proceed.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>1</u>
	Group #	_____	<u>2</u>
	K/A #	<u>295033 EA2.03</u>	
	Importance Rating	_____	<u>4.2</u>

K/A Statement: Ability to determine and/or interpret the following as they apply to high secondary containment area radiation levels: Cause of high area radiation

Proposed Question: **Question #85**

Unit 1 was at 100% RTP when a LOCA occurs:

- HCVS is NOT available
- LGA-VQ-102, "Unit 1 Emergency Containment Vent" is in progress using Standby Gas Treatment (VG)
- Drywell pressure is 45 psig and slowly LOWERING
- 1H13-P601-F401, DIV 1 MSL PIPE TUNNEL AMB TEMP HI, is LIT
- 1H13-P601-B111, TB/AUX RAD HI, is LIT
- 'Rx Bldg Standby Gas' ARM is in alarm
- 'Turb Bldg Off Gas Equip and Sample Station' ARM is in alarm

The radiation alarms are due to (1) and ODCM samples are (2) PRIOR to venting.

- A. (1) leakage on a MSL outside of containment
(2) required
- B. (1) leakage on a MSL outside of containment
(2) NOT required
- C. (1) venting the containment at elevated pressure
(2) required
- D. (1) venting the containment at elevated pressure
(2) NOT required

Question 85 was DELETED from the exam due to an operationally invalid condition in the stem (VG is not able to emergency ventilate primary containment under high pressure conditions).

Proposed Answer: D

Explanation: A LOCA has caused high containment pressure and LGA-003 directs the crew to emergency vent the containment IAW LGA-VQ-102. In LGA-VQ-102, the ALARA Precaution on page 18 states that venting containment at elevated pressure using VQ or VG may cause a steam release into the secondary containment, and a steam release into the turbine building through the blowout panels in the MSL tunnel. The MSL tunnel high temperature alarm indicates that a steam release has occurred due to venting, and the corresponding turbine building area radiation alarm indicates the steam leak is into the turbine building through the MSL blowout panels. Discussion #7 in LGA-VQ-102 states that ODCM samples are never required when venting to stay below 60 psig (PCPL) because there is no limit on radiation release.

- A) Incorrect. Plausible because leakage on a MSL during an accident will cause the MSL tunnel high temperature alarm and possibly the turbine building area radiation alarms, but it will not cause the area radiation alarms in the reactor building. The second part of the distractor is also plausible because prior to venting, ODCM samples are usually required. In this case, venting is done to preserve the containment, and ODCM samples are not required.
- B) Incorrect. Plausible because leakage on a MSL during an accident will cause the MSL tunnel high temperature alarm and possibly the turbine building area radiation alarms, but it will not cause the area radiation alarms in the reactor building. The second part of the distractor is correct.
- C) Incorrect. Plausible because the first part of the distractor is correct. Venting containment using VG at elevated pressure will cause reactor building area radiation alarm, and the steam condition introduced due to elevated pressure will cause a steam release through the MSL blowout panels, giving the turbine building area radiation alarm. The second part of the distractor is also plausible because prior to venting, ODCM samples are usually required. In this case, venting is done to preserve the containment, and ODCM samples are not required.
- D) Correct. Venting containment using VG at elevated pressure will cause reactor building area radiation alarm, and the steam condition introduced due to elevated pressure will cause a steam release through the MSL blowout panels, giving the turbine building area radiation alarm. When venting to keep pressure below 60 psig, ODCM samples are not required.

Technical Reference(s): 051 Area Radiation Monitoring pp. 21-25; LGA-002 Rev. 010; LGA-003 Rev. 018; LGA-VQ-102 Rev. 003, pp. 18, 47

Proposed references to be provided to applicants during examination: N/A

Learning Objective:

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis

4

10 CFR Part 55 Content: 55.43 4

SRO Justification: 10 CFR 55.43(b)(4)

Radiation hazards that may arise during normal and abnormal situations. The SRO is responsible for knowledge of the radiation hazards that may be present in the plant due to venting the containment at elevated pressure. While venting containment at elevated pressure due to a severe accident, radiation hazards may exist in the reactor building and turbine building. Despite there being radiation hazards in the plant and the possibility of an offsite release, the SRO is also required to know the ODCM sampling requirements during this situation. The SRO must know that maintaining the containment fission product barrier takes precedence over sampling during a release due to venting the containment at elevated pressure. and prioritize maintaining the integrity of the containment.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 2 </u>
	Group #	_____	<u> 1 </u>
	K/A #	<u> 218000 G2.2.25 </u>	
	Importance Rating	_____	<u> 4.2 </u>

K/A Statement: Automatic Depressurization: Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.

Proposed Question: **Question 86**

Unit 1 is in Mode 3, Hot Shutdown.

RPV pressure is 140 psig and STABLE.

Subsequently,

- Annunciator 1H13-P601-F102, ADS Valve Accumulator Press Lo is LIT along with
 - Computer Point R0352, ADS VLV C ACCUM PRESS LO and
 - Computer Point R0357, ADS VLV U ACCUM PRESS LO
- ADS Backup Bottle Pressure is 580 psig
- ADS Accumulator Reserve Bottle Pressure is 1095 psig

What if any Technical Specification and Condition will need to be entered? (1)

What is the Technical Specification Basis for meeting/not meeting an LCO? (2)

- A. (1) LCO 3.5.1 Condition E
(2) One required ADS is inoperable
- B. (1) None
(2) ADS Backup Bottle Pressure is greater than 500 psig
- C. (1) LCO 3.5.1 Condition G
(2) ADS Accumulator Reserve Bottle Pressure is less than 1,100 psig
- D. (1) None
(2) In Modes 2 and 3 the ADS function is not required with RPV below 150 psig

Proposed Answer: D

Explanation:

- A) Incorrect. Plausible as this is the correct TS Action statement for one required ADS valves inoperable but since the RPV pressure is less than 150 psig it is not applicable. Only 6 of A7 ADS valves are required to be operable. Therefore, this would be correct if RPV pressure was \geq 150 psig.
- B) Incorrect. As ADS is not required with the RPV below 150 psig the first answer is correct. While there is a surveillance requirement (3.5.1.4) to have the ADS Backup Bottle pressure greater than 500 psig this LCO is not applicable with RPV pressure $<$ 150 psig.
- C) Incorrect. Plausible as there is a TS Surveillance Requirement (3.5.1.4) to have the ADS Accumulator Reserve bottle pressure greater than 1100 psig. But it is not applicable with the RPV pressure below 150 psig.
- D) Correct. The Technical Specification Bases for TS 3.5.1, Applicability states, in part, "In Modes 2 and 3, the ADS function is not required when pressure is less than 150 psig because the low pressure ECCS subsystems (LPCS and LPCI) are capable of providing flow into the RPC below this pressure."

Technical Reference(s): TS 3.5.1; TS 3.5.1 Bases; LOR-1H13-P601-F102, Rev 3, ADS Valve Accumulator Press Lo

Proposed references to be provided to applicants during examination: **Technical Specification 3.5.1 with all above the line data and less than 1 hour requirements blank.**

Learning Objective:

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

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
 Comprehension or Analysis 2

10 CFR Part 55 Content: 41.5 / 41.7 / 43.2

SRO Justification: 10 CFR 55.43.(b)(2)

Facility operating limitations in the technical specifications and their bases.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 2 </u>
	Group #	_____	<u> 1 </u>
	K/A #	<u> 239002 A2.01 </u>	
	Importance Rating	_____	<u> 3.3 </u>

K/A Statement: Ability to (a) predict the impacts of the following on the safety relief valves and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Stuck open vacuum breakers.

Proposed Question: **Question #87**

Unit 1 was operating at 100% RTP when the reactor was scrammed due to a loss of condenser vacuum.

- RPV pressure is 950 psig and being MANUALLY controlled by SRVs
- RPV level is being maintained between Level 2 and Level 8 with RCIC in AUTO
- SRV 'F' is OPEN
- Suppression pool temperature is 100°F and STABLE
- Suppression pool level is +2 inches and STABLE
- Suppression chamber pressure is 0.5 psig and STABLE
- Drywell pressure is 2.0 psig and RISING rapidly
- Drywell temperature is 140 °F and RISING

In response to the drywell indications, the crew MUST (1) . The Unit Supervisor MUST then direct the crew to (2) .

- A. (1) close SRV 'F' due to an SRV vacuum relief valve failure
(2) start drywell cooling ONLY IAW LGA-VP-01, "Primary Containment Temperature Reduction"
- B. (1) secure RCIC due to RCIC discharge piping break
(2) start drywell cooling ONLY IAW LGA-VP-01, "Primary Containment Temperature Reduction"
- C. (1) close SRV 'F' due to an SRV vacuum relief valve failure
(2) start drywell sprays IAW LGA-RH-103, "Unit 1A and 1B RHR Operations in the LGAs and SAMGs" AND drywell cooling IAW LGA-VP-01, "Primary Containment Temperature Reduction"
- D. (1) secure RCIC due to RCIC discharge piping break
(2) start drywell sprays IAW LGA-RH-103, "Unit 1A and 1B RHR Operations in the LGAs and SAMGs" AND drywell cooling IAW LGA-VP-01, "Primary Containment Temperature Reduction"

Proposed Answer: A

Explanation: Unit 1 was scrammed due to a loss of condenser vacuum, so the condenser is unavailable for heat removal. Pressure is being controlled by SRVs and level is being controlled by RCIC. With SRV 'F' open, the suppression pool parameters are expected to be rising. Instead, the drywell parameters are rising due to a stuck open vacuum breaker, which releases steam directly into the drywell through the SRV. The US will direct the crew to close the SRV and enter LGA-003 for drywell pressure and temperature. In this EOP, criteria is met to start drywell cooling IAW LGA-RH-103, but not for drywell spray.

- A) Correct. Drywell temperature and pressure are rising due to the stuck open vacuum breaker on the open SRV. IAW LGA-003, the US will direct the crew to start drywell cooling IAW LGA-RH-103 based on drywell temperature being above 135 deg F.
- B) Incorrect. Plausible because a break on the RCIC discharge piping would cause the drywell indications, but the given conditions indicate RCIC is running normally and maintaining RPV level. The procedures in the second part of the distractor are correct, but since RCIC is running normal, there is no need to secure RCIC.
- C) Incorrect. The first part of the distractor is correct. The second part is plausible because the crew will enter LGA-003 due to high drywell pressure and temperature. When the US directs the crew to shut SRV 'F', drywell pressure will not continue to rapidly increase and will not reach 12 psig. Therefore, drywell spray is not required. The drywell is greater than 135 deg F so drywell cooling will be initiated IAW LGA-RH-103.
- D) Incorrect. Plausible because a break on the RCIC discharge piping would cause the drywell indications, but the given conditions indicate RCIC is running normally and maintaining RPV level. For the second part of the distractor, starting drywell cooling is correct, but the criteria is not met to start drywell spray and since RCIC is running normal, there is no need to secure RCIC.

Technical Reference(s): 070 Main Steam, pp. 6-7, 20; LGA-001, Rev. 018; LGA-003 Lesson Plan pp 6, 22; LGA-003 Rev. 018; MS-2

Proposed references to be provided to applicants during examination: **LGA-003, "PRIMARY CONTAINMENT CONTROL" Drywell Temperature and Primary Containment Pressure Legs. Remove all procedures, notes, cautions, finger notes and numbers.**

Learning Objective: 420.00.01

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge _____
 Comprehension or Analysis 3

10 CFR Part 55 Content: 55.43 5

SRO Justification: 10 CFR 55.43(b)(5)

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The SRO candidate is required to assess the given conditions of a stuck open SRV vacuum breaker and understand to implement LGA-003, "Primary Containment Control" based on high drywell temperature and pressure. The SRO candidate must use this assessment to understand to direct the correct actions in the EOP to mitigate high drywell temperature while understanding the criteria is not yet met to spray the drywell.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 2 </u>
	Group #	_____	<u> 1 </u>
	K/A #	<u> 262001 G2.4.50 </u>	
	Importance Rating	_____	<u> 4.0 </u>

K/A Statement: AC Electrical Distribution: Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.

Proposed Question: **Question 88**

Unit 1 is at 100% RTP:

- 1PM01J-A317, SAT 142 TROUBLE is LIT
- The Outside EO reports that SAT 142 Winding Temperature is 125°C and RISING
- SAT 142 oil temperature is 115°C with an upper limit of 110 °C
- All fans and pumps are verified operating
- The UAT is operating NORMALLY

The SRO MUST direct the crew to enter LOA-TRAN-101 and:

- Perform thermography or other methods to validate the oil temperature and SCRAM the reactor if greater than 110 °C
- SCRAM if greater than 140°C Hot Spot for 30 minutes
- SCRAM the reactor per LGP-3-2, trip the Turbine Generator, and immediately remove SAT 142 from service
- Transfer loads and remove SAT 142 from service

Proposed Answer: D

Explanation:

- A) Incorrect. Plausible as LOA-TRAN-101 does direct to attempt to verify the accuracy of the top oil temperature gauge using thermography or other methods but the verification must be performed PRIOR to reaching 110 C not prior to 30 minutes after reaching 110 C. Scram the reactor only for high temperatures on the UAT not the SAT.
- B) Incorrect. Plausible as LOA-TRAN-101 directs a manual SCRAM if a Main Power Transformer is greater than 140 C for 30 minutes. There is no mention of a rapid reactor shutdown in LOA-TRAN-101 for these conditions.
- C) Incorrect. Plausible as LOA-TRAN-101, Step B.4.4, RNO directs the reactor be SCRAMMED and Trip the TG if the oil temperature is above 110 C for UAT 141. For SAT 142 it only directs that the transformer be immediately removed from service.
- D) Correct. Annunciator for SAT Trouble directs the dispatch of an operator to check transformer parameters locally and refers the operators to LOA-TRAN-101. Step B.4.2 directs to check all fans and pumps running. Step B.4.4 RNO, for oil temperature less than 110 C, directs that SAT 142 Transformer be immediately removed from service.

Technical Reference(s): LOA-TRAN-101, Rev 30, Unit 1 Transformer Trouble; Training Drawing AP-1, Rev 3, AC Distribution; LOR-1PM01J-A317, Rev 2, SAT 142 Trouble; Lesson Plan 005, Rev 17, AC Distribution

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 005.00.010: Recall the signals which cause an AC Distribution System component trip, including setpoints, logic, how and when bypassed and how reset, and predict system response while operating the system on an exam in accordance with the student text and station procedures.

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge
 Comprehension or Analysis 2

10 CFR Part 55 Content: 41.10 / 43.5 / 45.3

SRO Justification: 10 CFR 55.43.(b)(5) Assessing plant conditions and then selecting a procedure or procedure section during normal, abnormal, and emergency conditions to mitigate, recover from, or proceed with the event.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 2 </u>
	Group #	_____	<u> 1 </u>
	K/A #	<u>209001 A2.05</u>	
	Importance Rating	_____	<u> 3.6 </u>

K/A Statement: Ability to (a) predict the impacts of the following on the LPCS system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequence of those abnormal conditions or operations: Core spray line break.

Proposed Question: **Question #89**

Unit 2 was at 100% RTP:

- 2H13-P601-C404, RHR 2A / LPCS LN INTEGRITY MONITOR, is LIT
- Local reading is 1 psid to the left of zero
- IMD was dispatched and the calibration was confirmed in tolerance for the DP switch

A LPCS Core Spray piping leak/break may have occurred (1) and the Unit Supervisor will (2) .

- (1) inside the Core Shroud
(2) perform an operability determination IAW OP-AA-108-115, "Operability Determinations"
- (1) inside the Core Shroud
(2) declare the system inoperable and IMMEDIATELY enter LCO 3.0.3
- (1) between the Reactor Pressure Vessel and Core Shroud
(2) perform an operability determination IAW OP-AA-108-115, "Operability Determinations"
- (1) between the Reactor Pressure Vessel and Core Shroud
(2) declare the system inoperable and IMMEDIATELY enter LCO 3.0.3

Proposed Answer: C

Explanation: The given information indicates there is a LPCS line break/leak. The US dispatched the operator to verify the indication was consistent with the alarm, and dispatched IMD to verify the indication was calibrated correctly. The location of the leak is between the shroud and RPV. Taking the required TRM actions and performing an operability determination will place the Unit in the correct mode of operation to control and mitigate the consequences of the line break.

- A) Incorrect. Plausible because the second part of the question is correct, the operability of the affected ECCS system should be evaluated for Operability to determine if the system is still capable of performing its specified function assumed in the safety analysis. The first part of the distractor is incorrect since cooling water would flow out of the break between the RPV wall and shroud and bypass the core region.
- B) Incorrect. The second part of the distractor is plausible because a leak may indicated that LPCS cannot perform its design function, but this cannot be determined on the given indication. Per TRM 3.3.f Bases, an Operability determination is to be made to determine system operability. The first part of the distractor is incorrect since cooling water would flow out of the break between the RPV wall and shroud and bypass the core region.
- C) Correct. Per TRM 3.3.f Bases, the function of the ECCS header Differential Pressure Instrumentation is to provide an alarm to alert the Operator of a potential compromise of ECCS piping integrity internal to the RPV. The presence of this alarm may indicate that the system is not operable since cooling water would flow out of the break and bypass the core region, potentially invalidating the flow delivery assumptions in the safety analysis. If the alarm is determined to be valid, the operability of the affected ECCS system should be evaluated for Operability to determine if the system is still capable of performing its specified function assumed in the safety analysis.
- D) Incorrect. Plausible because the first part of the distractor is correct, since cooling water would flow out of the break and bypass the core region, but the second part is incorrect per basis an Operability determination is made to determine system operability.

Technical Reference(s): TRM 3.3.f Rev. 002; TRM B3.3.f Rev. 002, pp. 1-2; LOR-2H13-P601-C404 Rev. 008; OP-AA-108-115 Rev. 022

Proposed references to be provided to applicants during examination: N/A

Learning Objective:

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

Question History: Last NRC Exam LaSalle 2018 ILT Exam (Q86)

Question Cognitive Level: Memory or Fundamental Knowledge
 Comprehension or Analysis 3

10 CFR Part 55 Content: 55.43 2

SRO Justification: 10 CFR 55.43(b)(2)

Facility operating limitations in the technical specifications and their bases. The SRO applicant must be able to understand the indications given are a LPCS line break/leak, and must have the ability to understand the facility operating limitations in the TRM and understand that the TRM bases requires an operability determination of the LPCS system.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 2 </u>
	Group #	_____	<u> 1 </u>
	K/A #	<u>264000 G2.2.40</u>	
	Importance Rating	_____	<u> 4.7 </u>

K/A Statement: Diesel Generator: Ability to apply Technical Specifications for a system.

Proposed Question: **Question 90**

BOTH Units are at 100% RTP:

- The Unit 1 Equipment Operator reported a 0.1 gph water leak on the '1B' Diesel Generator 14 hours earlier
- The turbocharger after coolers were determined to be the source of the leak
- '1B' DG was declared inoperable due to the leak
- Engineering reports it will be at least 24 hours to perform UT Testing to determine the cause of the leak

What action is REQUIRED by Technical Specifications for Unit 1:

- A. Perform SR 3.8.1.2 for the Unit '1A' and the Unit '0' EDGs ONLY
- B. Perform SR 3.8.1.2 for the Unit '1A', the Unit '0', and the Unit '2A' EDGs
- C. Perform SR 3.8.1.3 for the Unit '1A' and the Unit '0' DGs ONLY
- D. Perform SR 3.8.1.3 for the Unit '1A', the Unit '0', and the Unit '2A' EDGs

Proposed Answer: B

Explanation:

- A) Incorrect. Plausible, starting the Unit 1A and Unit 0 DGs in accordance with ~~SR 3.8.1.2~~ TS 3.8.1, Action C.3.2 is correct but those are not the only required operable DG which must have SR 3.8.1.2 performed.
- B) Correct. TS 3.8.1, Action C.3.1 requires that the operable DGs be determined that they are not inoperable due to a common cause failure within 24 hours. For the given conditions it will not be possible to meet this requirement. Action C.3.2 can be performed in lieu of C.3.1 and requires that SR 3.8.1.2 be performed for the operable DGs within 24 hours. The TS 3.8.1 Bases statement states that this requirement applies to both to the Unit 1 Division II DG and the opposite unit Division II DG. Division II DGs at LaSalle are the 1A and 2A DGs.
- C) Incorrect. Plausible because this is a repeat of answer A except that instead of just checking voltage and frequency the DGs will be fully loaded for at least an hour. The candidate could mistake the monthly surveillance for the shortened surveillance required by the TS. It is also the wrong EDGs.
- D) Incorrect. Plausible because these are the correct DGs to test, except that the SR is wrong.

Technical Reference(s): TS 3.8.1, Amendment 200/187, AC Sources – Operating; TS 3.8.1, bases, Rev 51, AC Sources - Operating

Proposed references to be provided to applicants during examination: **Technical Specification 3.8.1 with all above the line data and less than 1 hour requirements blank.**

Learning Objective:

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

Question History: Last NRC Exam

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> </u>
	Comprehension or Analysis	<u> 3 </u>

10 CFR Part 55 Content: 41.10 / 43.2 / 43.5 / 45.3

SRO Justification: 10 CFR 55.43.(b)(2)

Facility operating limitations in the technical specifications and their bases.

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 2 </u>
	Group #	_____	<u> 2 </u>
	K/A #	<u>202002 A2.07</u>	
	Importance Rating	_____	<u> 3.3 </u>

K/A Statement: Ability to (a) predict the impacts of the following on RECIRCULATION FLOW CONTROL SYSTEM and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of feedwater signal inputs.

Proposed Question: **Question #91**

Unit 2 is at 68% RTP:

- The MDRFP OOS for repairs
- The '2A' Recirculation FCV was LOCKED due to drifting OPEN.
- As a result
 - '2A' FCV position was 42%
 - '2B' FCV position was 38%

Unit 2 stabilized at 70% when the following conditions then occurred:

- 2PM03J-A104, 2A/2B TDRFP BRG OIL PRESS LO, is LIT
- Bearing oil pressure for the '2A' TDRFP indicates 3.5 psig and LOWERING
- Bearing oil pressure for the '2B' TDRFP indicates 20 psig and STABLE
- RPV level is 31 inches and SLOWLY LOWERING
- The crew has entered LOA-RR-201, "Unit 2, Reactor Recirculation System Abnormal"

- (1) How will the plant respond?
- (2) What LCO is required to be entered?

- A. (1) Reactor level will lower to level 3 requiring a manual scram IAW LGP-3-2
(2) LCO 3.4.2 Condition A for the '2A' Recirculation FCV inoperable
- B. (1) '2B' FCV will runback maintaining the plant operating and requiring the crew to trip '2B' RR pump within ONE hour
(2) LCO 3.4.2 Condition A for the '2A' Recirculation FCV inoperable
- C. (1) Reactor level will lower to level 3 requiring a manual scram IAW LGP-3-2
(2) LCO 3.4.1 Condition B for recirculation flow mismatch not within TS limits
- D. (1) '2B' FCV will runback maintaining the plant operating and requiring the crew to trip '2B' RR pump within ONE hour
(2) LCO 3.4.1 Condition B for recirculation flow mismatch not within TS limits

Proposed Answer: D

Explanation: This question matches the K/A because with the trip of the '2A' TDRFP, there is a loss of feed input signals from the '2A' TDRFP (Lesson Plan 023 p. 33). With the MDRFP OOS, and a trip of the '2A' TDRFP due to low bearing oil pressure, steam flow will be higher than feed flow due to the lost feed signal inputs from the feed pump trip. Under these conditions, RPV level will lower, and a recirculation runback will occur once RPV level reaches Level 4 (31.5") and lowering. With one recirc FCV locked and a runback in progress, the crew will have entered LOA-RR-201. With one FCV locked in the open position, and the other FCV closing due to the runback, there will be a flow mismatch, and the steps in the AOP have the US direct the crew to rapidly reduce power and downshift both RR pumps to slow speed IAW LGP-3-1 and for the US to enter LCO 3.4.1.B for one recirculation loop inoperable due to the flow mismatch.

- A) Incorrect. The first part of the distractor is plausible because the loss of lube oil to the 'A' TDRFP will cause it to trip and will cause level to lower until steam flow and feed flow match. The crew will be in the AOP due to the locked FCV and flow mismatch during the runback. The second part of the distractor is plausible because this is the correct LCO to enter if the FCV was determined to be inoperable. However, per the TS Basis, a locked FCV is in the accident analysis position and is not considered to be inoperable.
- B) Incorrect. Plausible because the first part of the distractor is correct. The second part of the distractor is plausible because this is the correct LCO to enter if the FCV was determined to be inoperable. However, per the TS Basis, a locked FCV is in the accident analysis position and is not considered to be inoperable.
- C) Incorrect. The first part of the distractor is plausible because the loss of lube oil to the 'A' TDRFP will cause it to trip and will cause level to lower until steam flow and feed flow match. The crew will be in the AOP due to the locked FCV and flow mismatch during the runback. The second part of the distractor is correct.
- D) Correct. With a reactor low level alarm in and insufficient feedwater pumps operating, a RR runback will occur. IAW LOA-RR-201, the crew will trip the low-flow RR pump per GE SIL 621 within 1 hour due to the flow mismatch caused by the runback with a locked FCV. Due to the flow mismatch, the US will enter LCO 3.4.1.B and declare one recirculation loop inoperable.

Technical Reference(s): 023 RR Flow Control, pp. 32-33; 031 Rx Water Level Control, pp. 51-52; LGP-3-1 Rev. 069, pp.18-19; LOA-RR-201 Rev. 046, pp. 27-28; TS 3.4.1; TS B3.4.2 p. 3.4.2-2

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 031.00.15, 031.00.18

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis 4

10 CFR Part 55 Content: 55.41 _____
55.43 2,5

SRO Justification:

10 CFR 55.43(b)(2) – Facility operating limitations in the technical specifications and their bases. The SRO applicant is required to know that a recirculation flow mismatch due to a recirculation system runback with one locked recirculation FCV will require entry into the LCO and require one recirculation loop to be inoperable. This is done in order to protect the jet pumps due to the flow mismatch.

10 CFR 55.43(b)(5) – Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The SRO applicant is required to assess that a locked FCV and a tripped TDRFP will result in the conditions being satisfied for a reactor recirculation runback. This requires the SRO to correctly select LOA-RR-201, which the applicant will use to direct the crew to perform a rapid power reduction and downshift both RR pumps IAW LGP-3-1. The selection of these appropriate procedures will mitigate the impacts of the loss of FW signal inputs which resulted in the runback and flow mismatch.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>2</u>
	Group #	_____	<u>2</u>
	K/A #	<u>223001 G2.4.46</u>	
	Importance Rating	_____	<u>4.2</u>

K/A Statement: Primary Containment System and Auxiliaries: Ability to verify that the alarms are consistent with the plant conditions.

Proposed Question: **Question 92**

Unit 1 is at 100% RTP:

- A seismic event has occurred, resulting in a leak from the Suppression Pool
- 1PM13J-B203, SUP POOL WTR LVL LO, is LIT
- Suppression Pool water level reads -2 feet and slowly LOWERING on 1LI-CM032, Suppression Pool Water Level Wide Range Indication

Subsequently,

- 1PM13J-B202, SUP POOL WTR BULK TEMP HI, is LIT
- Suppression Pool temperature reads 106°F and fluctuating on 1TR-CM038A, Div 2 Average Suppression Pool Temperature Recorder
- RTD's in well 'J' are currently displaying an 'X' on NUMAC Processor 1UY-CM038, Division 2 Suppression Pool Bulk Temperature

The Division 2 Average Suppression Pool TEMPERATURE indication is (1), and Technical Specification (2) should be entered.

- A. (1) valid
(2) 3.6.2.1 Suppression Pool Average Temperature
- B. (1) valid
(2) 3.3.3.1 Post Accident Monitoring Instrumentation
- C. (1) NOT valid
(2) 3.6.2.1 Suppression Pool Average Temperature
- D. (1) NOT valid
(2) 3.3.3.1 Post Accident Monitoring Instrumentation

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis 3

10 CFR Part 55 Content: 41.10 / 43.5 / 45.3 / 45.12

SRO Justification: 10 CFR 55.43.(b)(2)

Facility operating limitations in the technical specifications and their bases.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>2</u>
	Group #	_____	<u>2</u>
	K/A #	<u>290003 A2.02</u>	
	Importance Rating	_____	<u>3.4</u>

K/A Statement: Ability to (a) predict the impacts of the following on the CONTROL ROOM HVAC and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Extreme environmental conditions.

Proposed Question: **Question #93**

Unit 1 was operating at 100% RTP:

- 1PM06J-B204, CR HVAC AMMONIA DET ALARM, is LIT
- Radiation Protection has informed the Unit Supervisor that the alarm is VALID, and the ammonia concentration in the Control Room is 20 ppm
- Control Room HVAC system is in its normal flow path alignment

The Control Room HVAC system ____ (1) ____ to recirculation mode, and the Unit Supervisor will direct ____ (2) ____.

- (1) must be manually aligned
(2) personnel to don SCBAs and evacuate all unnecessary personnel from the Control Room IAW LOR-1PM06J-B204, "Control Room HVAC Ammonia Detector Alarm"
- (1) will automatically align
(2) immediate evacuation of all personnel from the Control Room IAW LOA-RX-101, "Unit 1 Control Room Evacuation Abnormal"
- (1) must be manually aligned
(2) immediate evacuation of all personnel from the Control Room IAW LOA-RX-101, "Unit 1 Control Room Evacuation Abnormal"
- (1) will automatically align
(2) personnel to don SCBAs and evacuate all unnecessary personnel from the Control Room IAW LOR-1PM06J-B204, "Control Room HVAC Ammonia Detector Alarm"

Proposed Answer: A

Explanation: This question meets the K/A because high concentrations of ammonia can be immediately dangerous to life and health (IDLH), and ammonia concentrations are detected in the outside environment at the outside air intakes. On this extreme environmental condition, an alarm will be received, and the crew must manually align the CR HVAC to recirculation mode for Control Room habitability. The SRO must know when to direct a Control Room evacuation and when the crew must don SCBAs based on the measured ammonia concentration. At the given concentration, the SRO will direct the crew to don SCBAs and the evacuation of all unnecessary personnel from the Control Room.

- A) Correct. Only an alarm will be received for high ammonia, and the crew must then manually align the CR HVAC to recirculation mode. To protect the crew and plant personnel, the US will direct the Control Room crew to don SCBAs and will evacuate all unnecessary personnel from the Control Room.
- B) Incorrect. The first part of the distractor is plausible because the CR HVAC will automatically align to a different mode (pressurization mode) on high outside radiation levels, but there is no automatic action for ammonia levels. The second part of the distractor is plausible because ammonia is dangerous to health at levels above 25 ppm and will direct the evacuation of the Control Room at higher levels, especially when levels reach levels IDLH.
- C) Incorrect. The first part of the distractor is correct. The second part of the distractor is plausible because ammonia is dangerous to health at levels above 25 ppm and will direct the evacuation of the Control Room at higher levels, especially when levels reach levels IDLH.
- D) Incorrect. The first part of the distractor is plausible because the CR HVAC will automatically align to a different mode (pressurization mode) on high outside radiation levels, but there is no automatic action for ammonia levels. The second part of the distractor is correct.

Technical Reference(s): 117 Control Room Ventilation, pp. 7, 18-19, 71, 74; LOR-1PM06J-B204 Rev. 007; LOA-RX-101 Rev. 011 p. 2

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 117.00.03e, 117.00.05k, 117.00.07a

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge _____
 Comprehension or Analysis 2

10 CFR Part 55 Content: 55.41 _____
55.43 5

SRO Justification: 10 CFR 55.43(b)(5)

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal and emergency situations. The SRO is responsible for assessing the environment in the Control Room at all times and understanding conditions that may arise that necessitate the evacuation of personnel, and the proper PPE that must be worn during such times. In this case, the SRO applicant must understand the ammonia levels in the Control Room have not reached a hazardous level, however the crew is in the alarm response procedure, and the US will direct the crew to don SCBAs and evacuate unnecessary personnel IAW the alarm response procedure.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>3</u>
	Group #	_____	_____
	K/A #	<u>2.1.5</u>	_____
	Importance Rating	_____	<u>3.9</u>

K/A Statement: Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc

Proposed Question: **Question 94**

You have been performing the duties of the Field Supervisor for the first 4-hours of the shift when a casualty occurs, and it is necessary for you to relieve the Unit Supervisor on the AFFECTED Unit.

Which of the following are REQUIRED to be performed PRIOR to assuming command and control of the AFFECTED Unit during the casualty situation?

1. Review appropriate abnormal conditions and initiating events.
2. Review the current status of the EOP flowcharts.
3. Receive permission from the Shift Manager.
4. Turnover to another qualified Field Supervisor.

- A. 1, 2 and 4 ONLY
- B. 1, 2, and 3 ONLY
- C. 1 and 4 ONLY
- D. 2 and 3 ONLY

Proposed Answer: B

Explanation:

- A) Incorrect. Plausible as two of the three are correct and it is unusual to have the Shift Manager give their specific permission for the turnover.
- B) Correct: Turnover procedure OP-AA-112-101, Step 4.13, would be selected by the candidate and unique to the SRO position would have to review the EOP flowchart during the turnover. Reactor Operators are not required to review the EOP flowcharts.
- C) Incorrect. Plausible as the first part is correct and typically you would wait to receive a relief for the field supervisor position prior to assuming a different responsibility.
- D) Incorrect. Plausible as these two are correct as given but the procedure requires that reviewing how the plant got in its current configuration was also needed.

Technical Reference(s):

- OP-AA-112-101, "Shift Turnover and Relief," (p.13) Rev 14

Proposed references to be provided to applicants during examination: N/A

Learning Objective:

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

Question History: Last NRC Exam LaSalle 2012 NRC ILE (Q99)

Question Cognitive Level: Memory or Fundamental Knowledge 2
 Comprehension or Analysis —

10 CFR Part 55 Content: 41.10 / 43.5 / 45.12

SRO Justification: 10 CFR 55.43.(b)(5) Assessing plant conditions and then selecting a procedure or section to mitigate, recover or with to proceed.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u> 3 </u>
	Group #	_____	_____
	K/A #	<u> 2.1.23 </u>	_____
	Importance Rating	_____	<u> 4.4 </u>

K/A Statement: Ability to perform specific system and integrated plant procedures during all modes of plant operation.

Proposed Question: **Question #95**

At 0400, the Unit Supervisor discovered during the review of LOA-AA-S101, "Unit 1 Shiftly Surveillance" that the 'B' APRM Channel Check, which is performed every 12 hours, had not been performed in 24 hours. To prevent entry into the applicable LCO, the 'B' APRM Channel Check MUST be performed _____.

- A. immediately
- B. by 1600 on the same day
- C. by 1900 on the same day
- D. by 0400 on the next day

Proposed Answer: D

Explanation: This question examines the SRO applicant's ability to perform and meet the requirements of integrated surveillance procedures, as well as their ability to adhere to the TS surveillance requirements. The question is Tier 3 because it does not require specific knowledge of a system or knowledge of a specific LCO, but instead how to follow the requirements of a station surveillance procedure and the requirements in SR 3.0.2 and SR 3.0.3 in the TS.

SR 3.0.3 states that when it is discovered that a surveillance has not been performed within its specified frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified frequency, whichever is greater. Therefore, since the specified frequency for a channel check of the APRMs is 12 hours, the crew has 24 hours from the time of discovery to complete the channel check. SR 3.3.1.1.1 states the surveillance frequency for a channel check is in accordance with the Surveillance Frequency Control Program. Section 5.0 of the TS states the provisions of SR 3.0.2 and 3.0.3 still apply.

- A) Incorrect. Plausible because it was discovered that the surveillance has not been met for 24 hours, which exceeds the surveillance requirement of 12 hours. It is logical to conclude the surveillance interval was missed and therefore must be performed immediately.
- B) Incorrect. Plausible because SR 3.0.3 states entry into the LCO may be delayed up to the limit of the specified frequency, which is 12 hours and would give you time 1600 on the same day, or up to 24 hours, whichever is greater. Therefore, the crew has up to 24 hours.
- C) Incorrect. Plausible because SR 3.0.2 gives a grace period of 1.25x the surveillance interval. For shiftly surveillances, that would be 15 hours. The time of 1900 on the same day is 15 hours. However, the conditions state that the surveillance has not been performed in 24 hours, so SR 3.0.2 does not apply, and the SR 3.0.3 would instead be used to give the crew 24 hours from the time of discovery to complete the surveillance before the LCO must be entered.
- D) Correct. Using SR 3.0.3, for a missed surveillance, the crew has 24 hours to complete the surveillance from the time of discovery before the LCO must be entered.

Technical Reference(s): TS 1.4 Frequency, p 1.4-2; TS 3.0 LCO & SR Applicability, p. 3.0-4 to 3.0-5; TS B 3.0 LCO & SR Applicability, p. 3.0-19; TS 5.0 Administration, p. 5.5-16

Proposed references to be provided to applicants during examination: N/A

Learning Objective:

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge 2
Comprehension or Analysis

10 CFR Part 55 Content: 55.43 2, 5

SRO Justification: 10 CFR 55.43(b)(2) and (b)(5)

10 CFR 55.43(b)(2). Facility operating limitations in the technical specifications and their bases. The SRO applicant must understand the operating limitations in the TS when a surveillance interval is missed and understand what actions must be taken in order to satisfy the surveillance requirements.

10 CFR 55.43(b)(5). Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The SRO applicant is required to assess that during normal operations, a surveillance has exceeded its frequency, and must select the correct SR in the TS (SR 3.0.3) to determine when the surveillance must be completed.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>3</u>
	Group #	_____	_____
	K/A #	<u>2.2.17</u>	_____
	Importance Rating	_____	<u>3.8</u>

K/A Statement: Knowledge of the process for managing maintenance activities during power operations, such as risk assessments, work prioritization and coordination with the transmission system operator.

Proposed Question: **Question 96**

- A Fire Risk Important Component has been taken Out of Service (OOS)
- Risk Management Actions (RMAs) are required per OP-AA-201-012-1001, "Operations On-Line Fire Risk Management"

Which Shift Operations are REQUIRED by OP-AA-201-012-1001?

1. Posting the accessible entrances of the Available Fire Risk Important Components (AFRIC) as listed in the Risk Management Action Tables (RMAT)
2. Briefing the Crew at the Shift Turnover Meeting on the RMAs
3. Inspect the AFRIC fire area HOURLY

- A. 2 and 3 ONLY
- B. 1 and 2 ONLY
- C. 1 and 3 ONLY
- D. 1, 2, and 3

Proposed Answer: B

Explanation:

- A) Incorrect. Plausible as SHIFTLY inspection of the AFRICs are required. Answers 1 and 2 are required for this condition.
- B) Correct. Items 1 and 2 are some of what is required by OP-AA-201-012-1001, Operations On-Line Fire Risk Management. The other item is done shiftly.
- C) Incorrect. Plausible because while item 1 is required and SHIFTLY inspection of the AFRIC is required.
- D) Incorrect. Plausible as items 1 and 2 are required, but SHIFTLY inspection of the AFRIC is required.

Technical Reference(s):

- OP-AA-201-012-1001, "Operations On-Line Fire Risk Management," (p. 3-4) Rev 3

Proposed references to be provided to applicants during examination: N/A

Learning Objective:

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

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge 2
 Comprehension or Analysis

10 CFR Part 55 Content: 41.10 / 43.5 / 45.13

SRO Justification: 10 CFR 55.43.(b)(5) Assessing plant conditions and then selecting a procedure or section to mitigate, recover or with to proceed.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>3</u>
	Group #	_____	_____
	K/A #	<u>2.2.21</u>	_____
	Importance Rating	_____	<u>4.1</u>

K/A Statement: Knowledge of pre and post-maintenance operability requirements.

Proposed Question: **Question #97**

Unit 1 is at 8% RTP with the Mode Switch in START-UP.

An outboard containment isolation valve that is required to be OPERABLE in Modes 1, 2, and 3, FAILED its stroke time testing. To comply with LCO TS 3.6.1.3 Primary Containment Isolation Valves, the inoperable valve has been closed and deactivated.

After 6 hours, maintenance has been completed and Post Maintenance Testing (PMT) requires the valve to be opened and timed closed.

Which of the following actions is required to perform the PMT?

- A. Enter LCO 3.0.3, complete the PMT, then exit LCO 3.0.3
- B. Prior to entering Mode 1, enter LCO 3.0.4, complete the PMT, then exit LCO 3.0.4
- C. Enter LCO 3.0.5, only for the time required to demonstrate Operability without further maintenance, then exit LCO 3.0.5
- D. Perform the electrical stroke timing ONLY if the valve is reclosed within 4 hours to comply with TS 3.6.1.3, "Primary Containment Isolation Valves"

Proposed Answer: C

Explanation: This is a Tier 3 question because it does not require knowledge of the containment isolation valves, only usage of the LCOs applicable to PMT. For PMT, the applicable section of the TS is LCO 3.0.5. According to LCO 3.0.5, equipment removed from service or declared inoperable to comply with actions may be returned to service under administrative control solely to perform testing required to demonstrate operability or the operability of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate operability. It is important to note that LCO 3.0.5 shall not be entered to administratively return the equipment to service in order to troubleshoot and perform additional maintenance.

- A) Incorrect. Plausible if the applicant believes the testing should be performed in a lower mode (Mode 3 or 4). Entering LCO 3.0.3 will take the plant to Mode 3 and then to Mode 4. Also plausible if the applicant believes the 6 hour time to repair the valve has exceeded the LCO 3.6.1.3 limits and an entry into LCO 3.0.3 is warranted.
- B) Incorrect. Plausible because the plant is in the middle of a startup, and LCO 3.0.4 applies to transitioning between Modes. It is plausible that the applicant may believe the plant should not enter Mode 1 prior to completing the PMT, and therefore LCO 3.0.4 should be entered.
- C) Correct. LCO 3.0.5 is the applicable LCO section, as it states equipment that is inoperable may be returned to service in order to demonstrate operability.
- D) Incorrect. Plausible because the applicable LCO requires an inoperable valve to be closed within 4 hours. Performing stroke timing then re-closing the valve is considered to be troubleshooting and it is not permitted to re-enter the action statement of an applicable LCO unless using administrative controls under LCO 3.0.5.

Technical Reference(s): TS 3.0 LCO & SR Applicability, pp. 3.0-1 and 3.0-2

Proposed references to be provided to applicants during examination: N/A

Learning Objective:

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

Question History: Last NRC Exam LaSalle 2014 ILT Exam (Q96)

Question Cognitive Level: Memory or Fundamental Knowledge 3
 Comprehension or Analysis

10 CFR Part 55 Content: 55.43 2

SRO Justification: 10 CFR 55.43(b)(2)

Facility operating limitations in the TS and their bases. This question demonstrates the SRO's knowledge the of facility operating limitations for returning equipment to service and the PMT requirements as defined in the facility TS (LCO 3.0.5).

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>3</u>
	Group #	_____	_____
	K/A #	<u>2.3.13</u>	_____
	Importance Rating	_____	<u>3.8</u>

K/A Statement: Knowledge of radiological safety procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.

Proposed Question: **Question 98**

The lock is broken on a “Locked High Radiation Area” Gate.

Whose permission is required for continuous electronic surveillance of the gate in lieu of an “Access Control Guard” for control of entry IAW RP-AA-460, “Controls for High and Locked High Radiation Areas?”

- A. Unit Supervisor
- B. Shift Manager
- C. Radiation Protection Manager
- D. Site Vice President

Proposed Answer: C

Explanation:

- A) Incorrect. Plausible as Unit Supervisor permission is required for numerous activities performed by operations personnel.
- B) Incorrect. Plausible as Shift Manager permission is required for numerous activities performed by operations personnel.
- C) Correct. RP-AA-460, specifically requires both RP Manager for this HRA/LHRA deviation
- D) Incorrect. Plausible as the SVP permission is required to enter a VHRA.

Technical Reference(s): RP-AA-460, "Controls for High and Locked High Radiation Areas," (p. 30) Rev 29

Proposed references to be provided to applicants during examination: N/A

Learning Objective:

Question Source: Bank # X
 Modified Bank # (See parent below)
 New

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge 3
 Comprehension or Analysis

10 CFR Part 55 Content: 41.12 / 43.4 / 45.9 / 45.10

SRO Justification: 10 CFR 55.43.(b)(4) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>3</u>
	Group #	_____	_____
	K/A #	<u>2.4.5</u>	_____
	Importance Rating	_____	<u>4.3</u>

K/A Statement: Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions

Proposed Question: **Question #99**

At 0700, Unit 2 experienced a Station Blackout.

At 0715, the Shift Manager declared an extended loss of AC power (ELAP) on Unit 2. The crew began implementing LOA-AP-201 Attachment N, "DC Load Shedding."

At 0730, an entry condition was met for LGA-002, "Secondary Containment Control."

Which of the following will the Unit Supervisor direct the crew to perform?

- A. COMPLETE the actions of LOA-AP-201 Attachment N, "DC Load Shedding," THEN enter LGA-002, "Secondary Containment Control."
- B. Perform LOA-AP-201 Attachment N, "DC Load Shedding" IN PARALLEL with LGA-002, "Secondary Containment Control."
- C. EXIT LOA-AP-201 Attachment N, "DC Load Shedding," THEN enter LGA-002, "Secondary Containment Control."
- D. SUSPEND actions of LOA-AP-201 Attachment N, "DC Load Shedding," COMPLETE the actions of LGA-002, "Secondary Containment Control," THEN resume LOA-AP-201 Attachment N, "DC Load Shedding."

Proposed Answer: B

Explanation:

This is a Tier 3 question because it does not require knowledge of the AC power system, SBO contingencies, or Load Shedding procedure to answer. It is testing LaSalle's organization of AOPs and EOPs and the correct way to utilize these procedures to mitigate an accident. Therefore, this is not an extension of Tier 1 or Tier 2. The US is not required to diagnose the event but is required to have knowledge of the correct priority of procedure usage.

There are some instances where an AOP is exited when EOP entry conditions are met, and some instances where the AOP must be performed in parallel. The SRO must have general knowledge of the procedure organization and which procedures have time critical actions. Therefore, the crew will not exit the AOP and will perform the AOP in parallel with the EOP.

- A) Incorrect. Plausible because the crew will continue in LOA-AP-201 Att. N, but must also work in parallel to address the entry conditions in LGA-002.
- B) Correct. DC Load Shedding is a time critical operator action during an ELAP, and the crew will continue to perform these actions while performing the actions in LGA-002.
- C) Incorrect. Plausible as this is the case where there are no time critical actions to be performed in the AOP and/or the EOP will address all of the conditions for which the AOP was entered. Since DC Load Shedding is time critical, the procedures will be worked in parallel.
- D) Incorrect. Plausible as AOPs are suspended where there are not time critical actions to be performed in the AOP and/or the EOP will address all of the conditions for which the AOP was entered. However, the crew will not suspend the DC load shedding actions, then resume them when the actions of LGA-002 are complete. DC load shedding is time critical and will be performed in parallel with LGA-002.

Technical Reference(s): LGA Flow Chart Use, p. 20; HU-AA-104-101 Rev. 007, pp. 9-10

Proposed references to be provided to applicants during examination: N/A

Learning Objective: 400.00.01, 400.00.18

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge 2
 Comprehension or Analysis _____

10 CFR Part 55 Content: 55.43 5

SRO Justification: 10 CFR 55.43(b)(5)

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. While in AOPs or EOPs, the SRO applicant is required to know the organization of the procedures and how to direct procedure usage when entry conditions are met for other procedures. In this case, the SRO must know to continue directing the use of the AOP while performing the EOP in parallel due to the AOP containing time critical operator actions.

Comments:

Examination Outline Cross-Reference:	Level	RO	SRO
	Tier #	_____	<u>3</u>
	Group #	_____	_____
	K/A #	<u>2.4.29</u>	_____
	Importance Rating	_____	<u>4.4</u>

K/A Statement: Knowledge of the Emergency Plan

Proposed Question: **Question 100**

You are the SRO in the control room when the following conditions exist:

- 10:10 An event occurred.
- 10:20 An Alert is declared.

What is the LATEST time by which the reports to the State AND NRC MUST be made in accordance with EP-MW-114-100, "Midwest Region Off-Site Notifications?"

- A. State 10:25 and NRC 11:10.
- B. State 10:35 and NRC 11:10.
- C. State 10:25 and NRC 11:20.
- D. State 10:35 and NRC 11:20.

Proposed Answer: D

Explanation:

- A) Incorrect. Time of the event is not relevant for this question. 15 minutes is the required report time after declaration of the ALERT to the State and 1 hour to the NRC after declaration of the ALERT. Both report times are wrong. Plausible if the candidate uses the time of the event instead of the time of the ALERT declaration.
- B) Incorrect. Time of the event is not relevant for this question. 15 minutes is the required report time after declaration of the ALERT to the State and 1 hour to the NRC after declaration of the ALERT. The State report time are wrong. Plausible if the candidate uses the time of the event instead of the time of the ALERT declaration for the NRC report.
- C) Incorrect. Time of the event is not relevant for this question. 15 minutes is the required report time after declaration of the ALERT to the State and 1 hour to the NRC after declaration of the ALERT. The State report time are wrong. Plausible if the candidate uses the wrong time for the State report.
- D) Correct. Time of the event is not relevant for this question. 15 minutes is the required report time after declaration of the ALERT to the State and 1 hour to the NRC after declaration of the ALERT.

Technical Reference(s):

- EP-MW-114-100, Rev 18, Midwest Region Off-Site Notifications

Proposed references to be provided to applicants during examination: N/A

Learning Objective:

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

Question History: Last NRC Exam N/A

Question Cognitive Level: Memory or Fundamental Knowledge
 Comprehension or Analysis 2

10 CFR Part 55 Content: 41.10 / 43.5 / 45.11

SRO Justification: Knowledge of Emergency Plan reporting requirements.

Comments: LaSalle Question Bank #701.02.00.01