Draft Submittal
(Pink Paper)

Senior Reactor Operator Written Exam

OCONEE JUNE 2006-301 EXAM

05000269, 05000270, AND
05000287/2006301

JUNE 19 - 28, 2006 AND
JUNE 30, 2006 (WRITTEN)

2/9/06

QUESTIONS REPORT
for Oconee 2006-301 Rev 0

1. 008AA2.03 001

The following Unit 1 conditions exist:
- Reactor = 90% power
- KVIB has just de-energized
- PORV RC-66 Red light indication on the handswitch is LIT
- RC-66 cannot be closed and its block valve cannot be closed
- Operators estimate leakrate at 10 gpm

Which one of the following correctly describes the acoustic monitor's ability to detect the leak and the impact on the plant's Safety Analysis?

A. PORV leakage can be corroborated by red lights lit on the acoustic monitors.
The Safety Analysis assumes up to 10 gpm of RCS identified leakage.

B. The leakage cannot be corroborated by acoustic monitors.
The Safety Analysis assumes up to 10 gpm of RCS identified leakage.

C. PORV leakage can be corroborated by red lights lit on the acoustic monitors.
The Safety Analysis does not address RCS identified leakage.

D. The leakage cannot be corroborated by acoustic monitors.
The Safety Analysis does not address RCS identified leakage.

QUESTIONS REPORT
for Oconee 2006-301 Rev 0

K/A
Pressurizer Vapor Space Accident / 3
Ability to determine and interpret the following as they apply to the Pressurizer Vapor Space Accident: PORV position indicators and acoustic monitors.

K/A MATCH ANALYSIS
Acoustic monitor's ability to detect the vapor space loca is being tested. First the applicant must determine that the red indicating light is indicative of an open PORV, then the applicant must determined if the acoustic mntrs can corroborate the PORV indication.

SRO-ONLY ANALYSIS
The leakage impact on the safety analysis is SRO-only knowledge, which is located in the Tech Spec basis.

ANSWER CHOICE ANALYSIS
A. Incorrect. Safety Analysis does not address RCS operational leakage, with the exception of Pri - Sec. Plausible because first half is true and many times Tech Spec LCOs are used as an initial condition for the safety analysis.
B. Incorrect. Leakage can be detected by acoustic monitors. Plausible because many times Tech Spec LCOs are used as an initial condition for the safety analysis. Also plausible because applicant may think that KVIB powers acoustic monitors.
C. Correct. Acoustic Mntrs are powered by KVIA, therefore they still have power. TS Basis states that RCS leakage is not addressed by the Safety Analysis.
D. Incorrect. Leakge can be detected by acoustic monitors. Plausible because applicant may think that KVIB powers acoustic monitors.

REFERENCES
1. Lesson Plan PNS-PZR, Pressurizer, Rev. 15.
2. Tech Spec 3.4.13, RCS Operational Leakage, Basis

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C C C D C B D D A D Scramble Range: A - D

Tier:	1	Group:	1
Key Word:	ACOUSTIC MONITOR	Cog Level:	C/A 3.9
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

2. 010G2.2.22 001

The following Unit 1 conditions exist:
- RCS pressure = 300 psig
- RCS temperature = 200 °F
- No RCS vent paths are open

Which one of the following correctly states Administrative Controls that are required per Tech Spec 3.4.12, LTOP System, Bases?

A. Maximum allowable RCS pressure limit is < 375 psig.
Maximum allowable pressurizer level is ≤ 220 inches.

B. Maximum allowable RCS pressure limit is < 525 psig.
Maximum allowable pressurizer level is ≤ 220 inches.

C. Maximum allowable RCS pressure limit is < 375 psig.
Maximum allowable pressurizer level is ≤ 310 inches.

D. Maximum allowable RCS pressure limit is < 525 psig.
Maximum allowable pressurizer level is ≤ 310 inches.

K/A
Pressurizer Pressure Control
Knowledge of limiting conditions for operations and safety limits.

K/A MATCH ANALYSIS
LTOP is RCS pressure protection. KA is matched because the Pzr is part of the RCS and it is used to control pressure in the pzr, which in turn, controls pressure in the RCS.

SRO-ONLY ANALYSIS
Basis knowledge for requirements on meeting admin controls to assure > 10 minutes for operators to mitigate an LTOP event.

ANSWER CHOICE ANALYSIS
A. Correct. See TS Basis Page B 3.4.12-6 and TS Page 3.4.12-1.
B. Incorrect.
C. Incorrect.
D. Incorrect.

Plausibilty is based on all the numbers applying to admin controls in various conditions.

REFERENCES
1. Tech Spec 3.4.12, LTOP System, and Basis.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A D B C A A A B D B Scramble Range: A - D

QUESTIONS REPORT
for Oconee 2006-301 Rev 0

Tier:	2	Group:	1
Key Word:	LTOP	Cog Level:	MEM 4.1
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

3. 011EA2.01 001

Unit 1 initial conditions at 11:00 hrs:
- Reactor has tripped from full power

Conditions at 12:00 hrs:
- 5 highest CET average = 800 °F

Current plant conditions at 12:30 hrs:
- 5 Highest CET average = 850 °F
- RIA-57 = 40 R/hr
- RIA-58 = 20 R/hr
- All RCPs are secured
- Letdown is isolated
- HPI throttled to avoid runout conditions

Which one of the following correctly describes the SRO's declaration of Fission Product Barrier status in accordance with RP/0/B/1000/001, Emergency Classification, Enclosure 1, Fission Product Barrier Matrix?

(REFERENCE PROVIDED)

A. Declare a potential Loss of Fuel Clad Barrier AND a potential Loss of Containment Barrier.

B. Declare an actual Loss of Fuel Clad Barrier AND a potential Loss of Containment Barrier.

C. Declare a potential Loss of Fuel Clad Barrier AND an actual of Loss of RCS Barrier.

D. Declare an actual Loss of Fuel Clad Barrier AND an actual Loss of RCS Barrier.

PROVIDE ONLY RP/0/B/1000/001, Enc. 4.1, Page 1 of 1.

K/A
Large Break LOCA / 3
Ability to determine or interpret the following as they apply to a Large Break LOCA: Actions to be taken, based on RCS temperature and pressure – saturated and superheated.

K/A MATCH ANALYSIS
The SRO must evaluate, using the point system, the status of the fission product barrier. Therefore, the question is testing knowledge of actions asociated with RCS temp and press during a LBLOCA. Adding up the points correctly is part of the actions that are necessary to correctly classify the event.

SRO-ONLY ANALYSIS
E-Plan and classification-related material is SRO-only function.

ANSWER CHOICE ANALYSIS
A. Incorrect. Plausible if applicant applies only HPI criteria to RCS barrier.
B. Incorrect. Plausible if applicant does not pick up on valid RVLIS indication.
C. Correct. See Enclosure 4.1.
D. Incorrect. Plausible if applicant confuses RIA indication.

REFERENCES
1. RP/0/B/1000/001, Emergency Classification, Rev. 18.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C A D A B D B D A A Scramble Range: A - D

Tier:	1	Group:	1
Key Word:	E PLANCLASSIFICATIO	Cog Level:	C/A 4.7
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

4. 013A2.03 001

The following Unit 1 conditions exist:

Initial Conditions:
- Reactor Power = 100%
- 'B' HPI Pump is tagged out for maintenance
- RCP Seal Supply Flow is aligned to the 'A' HPI Header

Current conditions:
- Reactor has just tripped
- RCS Pressure = 25 psig
- The 'A' and 'C' HPI pumps are running
- 'A' HPI Header Flow = 475 gpm
- 'B' HPI Header Flow = 500 gpm

Which one of the following correctly describes Rule 6 throttling criteria and the basis of the criteria?

A. Throttle both trains of HPI to less than or equal to 475 gpm (including seal supply flow). There is no total HPI flow limit.
HPI must be throttled within 5 minutes, which is based on the BWST's ability to provide sufficient net positive suction head.

B. Throttle both trains of HPI to less than or equal to 475 gpm (including seal supply flow). There is no total HPI flow limit.
HPI must be throttled within 10 minutes, which is based on the proper operation of HP-26 and HP-27 (HPI Pump discharge valves).

C. Throttle both HPI trains to less than or equal to 475 gpm (including seal supply flow) and total HPI flow to less than or equal to 750 gpm (including seal supply flow).
HPI must be throttled within 5 minutes, which is based on the BWST's ability to provide sufficient net positive suction head.

D. Throttle both HPI trains to less than or equal to 475 gpm (including seal supply flow) and total HPI flow to less than or equal to 750 gpm (including seal supply flow).
HPI must be throttled within 10 minutes, which is based on the proper operation of HP-26 and HP-27 (HPI Pump discharge valves).

K/A
Engineered Safety Features Actuation
Ability to (a) predict the impacts of the following malfunctions or operations on the ESFAS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Rapid depressurization.

K/A MATCH ANALYSIS
The rapid depressurization causes an ESFAS, which cause HPI pumps to start, which causes them to be in a runout condition, which requires HPI to be throttled. Therefore, the consequences of rapid depress are being tested, as well as how to mitigate those consequences.

SRO-ONLY ANALYSIS
SRO-only level because the basis behind the throttling criteria is being tested.

ANSWER CHOICE ANALYSIS
A. Incorrect. Plausible because BWSTs ability to provide NPSH is part of the basis. Incorrect due to the 5 minutes.
B. Correct. See referenced lesson plan Page 32 and Rule 6.
C. Incorrect. There is no 750 limit under current plant conditions. Plausible because 750 is an actual throttling limit, but under different plant conditions. Also plausible because BWSTs ability to provide NPSH is part of the basis. Incorrect due to the 5 minutes.
D. Incorrect. There is no 750 limit under current plant conditions. Plausible because 750 is an actual throttling limit, but under different plant conditions. Also plausible because second part is correct.

REFERENCES
1. Lesson Plan EAP-TCA, Time Critical Action, Rev. 01.
2. EP/1/A/1800/001, EOP - Rule 6, Rev. 34.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: B B C B B A A D A C Scramble Range: A - D

Tier:	2	Group:	1
Key Word:	HPI THROTTLING ESFAS	Cog Level:	C/A 4.7
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

5. 014A2.04 001

Unit 1 initial conditions:
- Reactor Power = 70%
- Diamond is in auto
- Three RCPs are operating

Current conditions:
- Group 5 rod drops fully into the core
- A 9 inch Assymetric Fault exists
- An auto runback occurred

Which one of the following correctly describes how absolute and relative rod position indications are aligned and the operability status of the dropped control rod?

A. "PI Reset raise/lower" switch manipulation is required to match absolute and relative rod indications.
The control rod is inoperable until it is realigned with its group and can respond to positioning signals.

B. Withdrawing the dropped rod to the average height of the other group 5 rods will align its absolute and relative rod indications.
The control rod is inoperable until it is realigned with its group and can respond to positioning signals.

C. "PI Reset raise/lower" switch manipulation is required to match absolute and relative rod indications.
The control rod is operable because it is trippable.

D. Withdrawing the dropped rod to the average height of the other group 5 rods will align its absolute and relative rod indications.
The control rod is operable because it is trippable.

K/A
Rod Position Indication
Ability to (a) predict the impacts of the following malfunctions or operations on the RPIS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Misaligned rod.

K/A MATCH ANALYSIS
The dropped rod will cause a deviation between absolute and relative rod position indication. This deviation will not be aleviated by simply withdrawing the dropped rod. The PI reset must be used to match the absolute and relative rod indications. This action is detailed in the OP for rod recovery. Therefore, the misaligned rod affects the position indication and the procedure actions to rectify the devaition are all being tested.

SRO-ONLY ANALYSIS
Operability is an SRO function.

ANSWER CHOICE ANALYSIS
A. Correct. See OP Enclosure 4.9, Step 2.8. Tech Spec 3.1.4 Bases states that a rod must be able to respond to positioning signals to be operable, therefore the dropped rod would be inoperable.
B. Incorrect. API will be accurate, but RPI will still read what it did prior to the rod drop. Plausible because second part is correct. Also plausible if applicant does not understand that the RPI will no longer indicate current position.
C. Incorrect. Control rod is not operable. Plausible because the rod is trippable as evidenced by falling into the core.
D. Incorrect. See analysis for above answer choices.

REFERENCES
1. Lesson Plan IC-CRI, Control Rod Indication, Rev. 09a.
2. OP/1/A/1105/019, Control Rod Drive System, Rev. 006.
3. Tech Spec LCO 3.1.4, Control Rod Group Alignment Limits, Basis.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A D A D C B B D D B Scramble Range: A - D

Tier:	2	Group:	2
Key Word:	MISALIGNED ROD	Cog Level:	C/A 3.9
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

6. 017G2.4.4 001

The following Unit 1 conditions exist:
- OAC alarm indicates saturated conditions in the core
- ASW is operating
- 'A' SG Pressure = 800 psig
- 'B' SG Pressure = 800 psig
- 'A' Train LPI flow = 1500 gpm
- 'B' Train LPI is tagged out for maintenance
- 'A' Train HPI = 450 gpm
- 'B' Train HPI = 0 gpm
- RCS Pressure = 100 psig
- Average of five highest CETs = 538 °F

The Control Room Supervisor is at the SA step where SCM > 0 °F is evaluated. The CRS has just directed the BOP to begin performing Rule 2.

Which one of the following correctly describes the next major procedure transition required for mitigating the above plant conditions?

A. Go to ICC.

B. Go to LOCA C/D.

C. Go to HPI C/D.

D. Go to LOSCM.

K/A
In-core Temperature Monitor
Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

K/A MATCH ANALYSIS
The CET indication, along with RCS P, provides indication of a saturated core. CETs reading this high is abnormal for that pressure. This is an entry condition to perform LOSCM, which is part of the EOP network.

SRO-ONLY ANALYSIS
Procedure transition takes place in the middle of an EOP, which requires knowledge beyond simple EOP/AOP entry conditions.

ANSWER CHOICE ANALYSIS
A. Incorrect. Parallel action step to go to ICC is for superheated core conditions. The RCS pressure and CET Temp are indicating a saturated core. Plausible because core cooling is indeed challenged.
B. Incorrect. There is not enough LPI flow to go to LOCA cooldown. Plausible because a LOCA is in progress and the typical success path for a LOCA is to cool the plant.
C. Incorrect. Before any cooldown can be accomplished, LOSCM must first be performed. Plausible because HPI flow is in the acceptable region and LPI is not adequate to go to LOCA C/D.
D. Correct. The question places the applicant at step 4.26 to verify SCM > 0 F. Since SCM = 0, the procedure directs the performance of LOSCM.

REFERENCES
1. EP/1/A/1800/001, Emergency Operating Procedure, Rev. 034.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D A C B D A A A C D Scramble Range: A - D

Tier:	2	Group:	2
Key Word:	CET ENTRY CONDITIONS	Cog Level:	C/A 4.3
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

7. 026A2.04 001

Unit 1 initial conditions:
- A Design Basis LOCA has occurred inside the RB
- BS actuated as designed

Unit 1 current conditions:
- BS "A" HEADER FLOW HIGH/LOW has annunciated
- Operators note that amps on the 'A' RBS Pump are oscillating
- All indications on the 'B' Train of RBS appear normal for the plant conditions

Which one of the following correctly describes the actions required by the ARG and the effect of those actions on the plant's design basis?

A. Allow the 'A' RBS Pump to run, throttle the discharge valve (BS-1), and vent the pump.
RBS is necessary to maintain RB pressure and temperature within their design values.

B. Allow the 'A' RBS Pump to run, throttle the discharge valve (BS-1), and vent the pump.
RBS is necessary to maintain RB pressure within its design values. No design value exists for RB temperature.

C. Secure the 'A' RBS Pump.
RBS is necessary to maintain RB pressure and temperature within their design values.

D. Secure the 'A' RBS Pump.
RBS is necessary to maintain RB pressure within its design values. No design value exists for RB temperature.

K/A
Containment Spray
Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Failure of spray pump.

K/A MATCH ANALYSIS
The impacts of losing the spray pump are that the plant is still within the P-T design basis limits. The procedure usage to correct, control, or mitigate is covered by the Alarm Response Guide, which states in a CAUTION that the BS Pump must be secured if showing signs of loss of suction.

SRO-ONLY ANALYSIS
Plant design basis is SRO-only knowledge.

ANSWER CHOICE ANALYSIS
A. Incorrect. Throttling is contrary to the guidance in the ARG. Plausible because throttling the discharge valve would be a method to raise suction pressure, which can be a cause of cavitation.
B. Incorrect. According to TS Basis, a design value for RB Temperature exists. Throttling is contrary to the guidance in the ARG. Plausible because throttling the discharge valve would be a method to raise suction pressure, which can be a cause of cavitation. Also plausible because ES actuation is triggered by containment pressure, not temperature.
C. Correct. CAUTION in the ARG states that RBS is to be secured if loss of suction is causing the low flow. Loss of suction is indicated by the oscilating amps in conjunction with the alarm. Tech Spec Bases states RB spray is required to keep post-accident pressure and temperature within design values.
D. Incorrect. According to TS Basis, a design value for RB Temperature exists. Plausible because ES actuation is triggered by containment pressure, not temperature.

REFERENCES
1. OP/1/A/6101/008, Alarm Response Guide 1SA-08, Rev. 016.
2. Tech Spec 3.6.5, Reactor Building Spray and Cooling System, Basis

MCS	Time:	1	Points:	1.00	Version:	0 1 2 3 4 5 6 7 8 9	
					Answer:	C C D D D A A C A A	Scramble Range: A - D
Tier:		2				Group:	1
Key Word:		BS PUMP				Cog Level:	C/A 4.2
Source:		N				Exam:	OC2006-301
Test:		S				Author/Reviewer:	MAB/RFA

8. 037AA2.10 001

The following Unit 2 conditions exist:

- The reactor is at 4 % power
- 'A' SG Primary to Secondary Leakage = 0.2 gpm
- 'B' SG Primary to Secondary Leakage = 0.1 gpm

Which one of the following correctly states the status of Technical Specification LCO 3.4.13, RCS Operational LEAKAGE, and the basis?

A. Primary to Secondary Leakage limit is exceeded for leakage through any one SG, but not for total leakage through all SGs.
Primary to Secondary Leakage limits are based on Steam Line Break and Loss of Load Analysis.

B. Primary to Secondary Leakage limit is exceeded for total leakage through all SGs.
Primary to Secondary Leakage limits are based on Steam Line Break and Loss of Load Analysis.

C. Primary to Secondary Leakage limit is exceeded for leakage through any one SG, but not for total leakage through all SGs.
Primary to Secondary Leakage limits are based on ensuring 10 CFR Part 20 - Standards for Protection Against Radiation, requirements are not violated.

D. Primary to Secondary Leakage limit is exceeded for total leakage through all SGs.
Primary to Secondary Leakage limits are based on ensuring 10 CFR Part 20 - Standards for Protection Against Radiation, requirements are not violated.

K/A
Steam Generator Tube Leak
Ability to determine and interpret the following as they apply to the Steam Generator Tube Leak: Tech Spec Limits for RCS leakage.

K/A MATCH ANALYSIS
Question tests knowledge of the TS Limits by providing leakage amounts and asking applicant if LCO requirements have been violated. Applicant must have knowledge of the LCO requirements in order to correctly answer the question.

SRO-ONLY ANALYSIS
Tech Spec basis info makes it SRO-only.

ANSWER CHOICE ANALYSIS
A. Incorrect. Leakage limits are exceeded for both "any one SG" and "total SG" Primary to Secondary Leakage. Plausible because applicant may not have correctly memorized the LCO leakage limits.
B. Correct. 0.3 gpm = 432 gpd, which is greater than 300 gpd limit in Tech Specs. Also basis is correct per TS Basis Pg. B3.4.13-1 (bottom of page).
C. Incorrect. Leakage limits are exceeded for both "any one SG" and "total SG" Primary to Secondary Leakage. Safety Analysis is concerned with Part 100 limits to the public, not Part 20 limits. Plausible because applicant may not know the difference between Part 20 and Part 100. Also plausible because applicant may not have correctly memorized the LCO leakage limits.
D. Incorrect. Safety Analysis is concerned with Part 100 limits to the public, not Part 20 limits.

REFERENCES
1. Tech Spec 3.4.13, RCS Operational LEAKAGE, and Basis.
2. Vogtle 2005-301, 035G2.1.20.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: B A A C B D D A D C Scramble Range: A - D

Tier:	1	Group:	2
Key Word:	SGTL TECH SPEC	Cog Level:	C/A 4.1
Source:	M	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

9. 038AG2.4.48 001

Unit 1 operators are performing steps in EP/1/A/1800/001, Steam Generator Tube Rupture, to steam the ruptured SG to prevent overfill.

- RCS Temperatures were as follows:

Time	Temp
10:00 hrs	575 F (pre-trip)
10:10 hrs	550 F
10:25 hrs	525 F

Current Indications at 10:25 hrs:
- SG "A" Pressure = 835 psig; SG "A" Level = 290 " XSUR
- SG "B" Pressure = 815 psig; SG "B" Level = 200" XSUR
- RCS is still subcooled
- Containment Conditions are normal

Which one of the following correctly states the direction that the procedure director should provided to the OATC?

A. Steam only the "A" SG.

B. Steam only the "B" SG.

C. Steam both SGs.

D. Do not steam either SG.

K/A
Steam Gen. Tube Rupture / 3
Ability to interpret control room indications to verify the status and operation of the system, and understand how operator actions and directives affect plant and system conditions.

K/A MATCH ANALYSIS
Diagnosis of control room indications(SG P & Level, RCS T) is used to determine which SG should be steamed. The SGTR EOP gives guidance to steam a ruptured SG to prevent overfill.
Therefore, the SRO must give direction that affects the status of the SGs.

SRO-ONLY ANALYSIS
SRO-only level because the TS cooldown rates will be violated if direction is given to steam the ruptured SG. The requirement is in a note, but the note is on step 57 of the procedure, thus placing it into the realm of responsibility of the procedure director (SRO).

ANSWER CHOICE ANALYSIS
A. Correct. Overfill criteria is met for the "A" SG and procedures direct steaming of the SG to prevent overfill. Furthermore, TS cooldown rates may be violated if the SG is steamed, but the procedure states that the SG should be steamed any way. The "B" SG should not be steamed because it is already lower in pressure and overfill is not a concern.
B. Incorrect. "B" SG pressure is lower than "A" and it is not an overfill concern with level at 200 inches. Plausible because it may make sense to steam the intact steam generator.
C. Incorrect. Plausible because it may make sense to steam both steam generators if an applicant gets confused on how much to steam prior to isolation.
D. Incorrect. Plausible because TS cooldown rates may be violated.

REFERENCES
1. EP/1/A/1800/001, SGTR, Rev 34.
2. Tech Spec Table 3.4.3-2.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A B D C C C C A A C Scramble Range: A - D

Tier:	1	Group:	1
Key Word:	SGTR SG OVERFILL	Cog Level:	C/A 3.6
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

10. 064G2.4.30 001

The following Unit 1 conditions exist with the plant at 180 °F:

Time	Plant Status / Condition
9:55	Unit 1 Normal Transformer, Unit 2 S/U Transformer, and CT-4 become unavailable
10:10	MFB 1 and 2 de-energize (they were energized prior to this time)
10:25	MFB 1 and 2 are still de-energized

Which one of the following correctly states the time requirements for notifying state and local agencies and the NRC based on RP/0/B/1000/001 (Emergency Classification) for the loss of power event? - assume that the event is declared as soon as conditions are met to make the declaration - (REFERENCE PROVIDED)

A. County and State must be notified by 10:25. NRC must be notified by 11:10.

B. County and State must be notified by 10:25. NRC must be notified by 11:25.

C. County and State must be notified by 10:40. NRC must be notified by 11:25.

D. County and State must be notified by 10:40. NRC must be notified by 11:40.

PROVIDE ONLY RP/0/B/1000/001, ENCLOSURE 4.5, PAGE 1 of 1.

K/A
Emergency Diesel Generator
Knowledge of which events related to system operations/status should be reported to outside agencies.

K/A MATCH ANALYSIS
The knowledge of "which" events require notifications is captured by providing a condition at 09:55 hrs that does not require notification. If the applicant thinks that this will require notification iaw E-Plan, then one of the distractors would be correct. The Keowee units are not supplying the MFBs, thus requiring an emergency classification, which requires notifications to outside agencies.

SRO-ONLY ANALYSIS
E-Plan Classifications is an SRO-only (ED) function.

ANSWER CHOICE ANALYSIS
A. Incorrect. Plausible because 10:25 is 15 minutes after losing power and 11:10 is 1 hour after losing power.
B. Incorrect. Plausible because 10:25 is 15 minutes after losing power and 11:25 is 1 hours after 10:25.
C. Correct. At 10:25 the condition to enter an alert exists. State and Local authorities must be notified within 15 minutes of declaring an event, which would be 10:40. The NRC must be notified by 11:25, which is 1 hour after meeting the conditions to declare an alert.
D. Incorrect. Plausible because 10:40 is correct and 11:40 is 1 hour after 10:40.

REFERENCES
1. RP/0/B/1000/001, Emergency Classification, Rev. 18.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C A A C C A A D D D Scramble Range: A - D

Tier:	2	Group:	1
Key Word:	EMERGENCY PLAN	Cog Level:	C/A 3.6
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

11. 065AG2.1.20 001

Unit 1 initial plant conditions:
- All plant parameters are normal for full power operation
- All system configuartions are normal

Current conditions at 14:00 hours:
- Auxiliary Instrument Air Pressure = 90 psig and steadily lowering at 2 psig per minute.

Which one of the following correctly describes requirements for manually opening CC-8 (CC RETURN PENT OUTSIDE BLOCK) and containment closure administrative requirements?

A. CC-8 must be manually opened by approximately 14:09 hours to maintain CRDM temperatures below its reactor trip criteria.
An operator must be stationed at the valve and be in constant communication with the control room for containment closure.

B. CC-8 must be manually opened by approximately 14:19 hours to maintain CRDM temperatures below its reactor trip criteria.
An operator must be stationed at the valve and be in constant communication with the control room for containment closure.

C. CC-8 must be manually opened by approximately 14:09 hours to maintain CRDM temperatures below its reactor trip criteria.
An operator must be stationed at the valve, but does not need to be in constant communication with the control room for containment closure.

D. CC-8 must be manually opened by approximately 14:19 hours to maintain CRDM temperatures below its reactor trip criteria.
An operator must be stationed at the valve, but does not need to be in constant communication with the control room for containment closure.

K/A
Loss of Instrument Air / 8
Ability to execute procedure steps.

K/A MATCH ANALYSIS
CC-8 must be manually opened as directed by procedure to avoid getting to rx trip criteria. The time requirement will be met in approximately 4 minutes. It is knowledge of the time requirement that is being tested, which is requisite knowledge to having the ability to execute the step. This is a time sensitive task.

SRO-ONLY ANALYSIS
SRO-only because the time requirement is being tested, which is not provided in the procedure. Also the administrative requirement for containment closure is being tested.

ANSWER CHOICE ANALYSIS
A. Correct. CC-8 will fail closed at about 80 psig and lowering. 4 minutes is the approximate rule of thumb for reaching the reactor trip criteria. And an operator must be positioned in constant communication.
B. Incorrect. Plausible because 14 minutes is still a short period of time, which portrays a time sensitivity to the task.
C. Incorrect. An operator does need to be in constant communication with CR. Plausible because it is reasonable to think that being available locally to perform the action should suffice, as long as communication is possible.
D. Incorrect. Plausible because 14 minutes is still a short period of time, which portrays a time sensitivity to the task.

REFERENCES
1. AP/1/A/1700/022, Loss of Instrument Air, Rev. 021.
2. Lesson Plan SSS-IA, Instrument Air System, Rev. 16.

MCS	Time: 1	Points: 1.00	Version:	0 1 2 3 4 5 6 7 8 9	
			Answer:	A A A A A C A C A C	Scramble Range: A - D
Tier:	1		Group:	1	
Key Word:	CC-8 LOSS OF IA AIR		Cog Level:	C/A 4.2	
Source:	N		Exam:	OC2006-301	
Test:	S		Author/Reviewer:	MAB/RFA	

12. 067AG2.4.27 001

The following events have taken place on Unit 1:
- A confirmed active fire has been identified in the Turbine Building
- AP/0/A/1700/025, Standby Shutdown Facility Emergency Operating Procedure, is being implemented
- Operators are at the point in the procedure where they have just opened 1XSF-F5A (1XSF NORM FDR BKR FROM 1X8) and closed 1XSF-F3A (1XSF EMERG FDR BKR FROM OXSF)

Which one of the following correctly describes the starting requirements for the Diesel Generator and SSF isolation manipulations; and reasons supporting the requirements?

A. The Diesel Generator is required to be started AND SSF is required to be isolated.
These actions are required to be performed because a DC control circuit on OTS1 that is exposed to the turbine building may prevent the operator from closing required SSF breakers on OTS1 if a short occurs.

B. The Diesel Generator is required to be started AND SSF is required to be isolated.
These actions are required to be performed because physical access to the area may not be possible at a later time.

C. The Diesel Generator is not required to be started AND SSF is not required to be isolated.
These actions are not required to be performed unless an active fire in the Control Room, or Cable Spreading Room is in progress or a security event is in progress.

D. The Diesel Generator is not required to be started AND SSF is not required to be isolated.
These actions are not required to be performed unless an active fire in the Control Room, Cable Spreading Room, or Equipment Room is in progress.

K/A
Plant Fire On-site / 8
Knowledge of fire in plant procedure.

K/A MATCH ANALYSIS
Knowledge of the requirements of AP-25 for a fire in turbine building are required to answer question.

SRO-ONLY ANALYSIS
SRO-only because basis for the steps is also being tested. Basis comes from Appendix in AP.

ANSWER CHOICE ANALYSIS
A. Correct.See page 7 and 8 of referenced procedure. Also see Appendix of referenced procedure, Items 2 and 15.
B. Incorrect. The reason is wrong, but plausible. The basis for doing these steps when they are done is due to potential control circuit short, not physical access. Physical access to the area would appear to be plausible on important actions.
C. Incorrect. Actions are required to be performed. Plausible because CR and CSR typically have more important equipment. And actions would be required during a secutity event.
D. Incorrect. Actions are required to be performed. Plausible because CR, CSR, and ER typically have more important equipment.

NOTE
I am assuming that the below steps are those necessary to isolate SSF:
OTS1-1 (SSF NORMAL POWER SUPPLY BREAKER B2T) must be opened.
OTS1-4 (DIESEL GEN BREAKER) and OTS1-3 (SSF 600V OXSF FDR BKR CONTROL) must both be closed.
OXSF-4B (SSF LC OXSF 600V INC BKR) must be closed.

REFERENCES
1. AP/0/A/1700/025, Standby Shutdown Facility Emergency Operating Procedure, Rev. 033.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A D D D B D A D C D Scramble Range: A - D

Tier:	1	Group:	2
Key Word:	FIRE IN PLANT	Cog Level:	MEM 3.5
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

13. 076G2.1.12 001

The following conditions exist:
- All three units are in mode 1
- Only the Unit 3 'B' SSW header is in service
- Unit 3 LPSW Standby Pump auto-start circuitry is inoperable

Which one of the following correctly describes which Technical Specification LCOs are not met and require action statements to be entered?

A. LCO 3.3.28 (LPSW Standby Pump Auto-Start Circuitry) and 3.7.7 (LPSW System) are not met for Units 1, 2 and 3.

B. LCO 3.3.28 (LPSW Standby Pump Auto-Start Circuitry) and 3.7.7 (LPSW System) are not met for Unit 3 only. No action statement entry required for Units 1 and 2.

C. LCO 3.3.28 (LPSW Standby Pump Auto-Start Circuitry) is not met for Units 1, 2, and 3. LCO 3.7.7 (LPSW System) is met for Units 1, 2, and 3.

D. LCO 3.3.28 (LPSW Standby Pump Auto-Start Circuitry) is not met for Unit 3 only. LCO 3.7.7 (LPSW System) is met for Units 1, 2, and 3.

I TRIED TO INCORP UTILITY COMMENT ON INITIAL CONDITIONS. HAVE UTILITY VERIFY THAT I CORRECTLY INCORPORATED THEIR COMMENT (4/6/06)

K/A
Service Water
Ability to apply technical specifications for a system.

K/A MATCH ANALYSIS
SWS Tech Spec knowledge is required.

SRO-ONLY ANALYSIS
SRO-only level because of Unit 3's auto start circuitry's affect on Unit 1 and 2 Tech Specs. This is a more in-depth TS question that requires bases knowledge to answer.

ANSWER CHOICE ANALYSIS
A. Incorrect. Auto-start circuitry does not affect TS 3.7.7.
B. Incorrect. Auto-start circuitry does not affect TS 3.7.7.
C. Correct. See TS Basis Page B3.3.28-2. This question uses the example in the basis.
D. Incorrect. TS 3.3.28 is not met for all three units.

Plausibility is based on the fact that one might assume it logical, in a closed book format, to apply standby pump auto-start circuitry to the SWS TS also. Plausiblility is also based on needing to know basis information to correctly apply TS 3.3.28 to all applicable units, which in this case is all three units.

REFERENCES
1. Tech Spec 3.7.7, LPSW and Basis.
2. Tech Spec 3.3.28, LPSW Standby Pump Auto-Start Circuitry and Basis.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C A D C A C A A C A Scramble Range: A - D

Tier:	2	Group:	1
Key Word:	TECH SPEC TS LPSWS	Cog Level:	C/A 4.0
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

14. 076G2.2.25 001

Which one of the following correctly describes the basis for Tech Spec LCO 3.4.11, RCS Specific Activity?

A. The LCO limits on specific activity of the reactor coolant ensure that the resulting 1 hour doses at the site boundary will not exceed the 10 CFR 100 dose guideline limits following an SGTR or a steam line break accident.

B. The LCO limits on specific activity of the reactor coolant ensure that the resulting 2 hour doses at the site boundary will not exceed the 10 CFR 100 dose guideline limits following an SGTR or a steam line break accident.

C. The LCO limits on specific activity of the reactor coolant ensure that the resulting 1 hour doses at the site boundary will not exceed the 10 CFR 100 dose guideline limits following a LOCA or SGTR accident.

D. The LCO limits on specific activity of the reactor coolant ensure that the resulting 2 hour doses at the site boundary will not exceed the 10 CFR 100 dose guideline limits following a LOCA or SGTR accident.

K/A
High Reactor Coolant Activity
Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.

K/A MATCH ANALYSIS
Applicant must have knowledge of TS bases to correctly answer the question.

SRO-ONLY ANALYSIS
TS Basis knowledge is being tested.

ANSWER CHOICE ANALYSIS
A. Incorrect. The correct basis is a 2 hour dose.
B. Correct. See TS Bases Page B 3.4.11-1.
C. Incorrect. The correct basis is a 2 hour dose. Also, LOCA is incorrect.
D. Incorrect.

Plausibility is based on the idea that to the uninformed, one hour appears to be just as reasonable as two hours. Plausibility also based on the idea that LOCA and SGTR are both breaches in the RCS.

REFERENCES
1. Tech Spec 3.4.11 and Bases.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: B A A C A C C C B A Scramble Range: A - D

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Tier:	1	Group:	2
Key Word:	RCS ACTIVITY	Cog Level:	MEM 3.7
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

15. 086G2.1.14 001

Unit 1 conditions:
- 1SA-03 B-6, FIRE ALARM, annunciates
- The BOP addresses the alarm and notes that there is a fire in the back of the control room and it appears to be spreading rapidly

As the SRO, you have determined that the control room requires immediate evacuation and enter AP/1/A/1700/008, Loss of Control Room. Which one of the following correctly describes the procedural directives required by AP/1/A/1700/008 prior to exiting the control room?

A. Notify an operator to locally close 1FDW-315 and 1FDW-316. Notify an operator to emergency start both Keowee units. Notify Unit 3 to activate the Fire Brigade. Notify the OSM to reference RP/0/B/1000/001, Emergency Classification.

B. Notify an operator to initiate AP/25, SSF EOP. Notify an operator to emergency start both Keowee units. Notify Unit 3 to activate the Fire Brigade. Make a PA announcement of required evacuation of the CR.

C. Notify an operator to initiate AP/25, SSF EOP. Make a PA announcement of required evacuation of the CR. Notify Unit 3 to activate the Fire Brigade. Notify the OSM to reference RP/0/B/1000/001, Emergency Classification.

D. Notify an operator to locally open 1FDW-315 and 1FDW-316. Notify Unit 3 to make a PA announcement of required evacuation of the CR. Notify Unit 3 to activate the Fire Brigade. Notify the OSM to make OMP 1-14, Notifications.

K/A
Fire Protection
Knowledge of system status criteria which require the notification of plant personnel.

K/A MATCH ANALYSIS
The equipment status of the FPS is initially indicated by the FIRE ALARM. Notifications are required based on the situation.

SRO-ONLY ANALYSIS
Question tests SRO notification responsibilities.

ANSWER CHOICE ANALYSIS
A. Incorrect. In an immediate evacuation scenario, Keowee units are not required to be started from the Unit 1 control room. Plausible because if CR evacuation is not due to a fire, then this would be a correct answer.
B. Incorrect. In an immediate evacuation scenario, Keowee units are not required to be started from the Unit 1 control room. Plausible because if CR evacuation is not due to a fire, then this would be a correct answer.
C. Correct. See AP/1/A/1700/008.
D. Incorrect. 1FDW-315 and 316 are required to be closed not opened. Plausible because the PAS announcement, Fire Brigade announcement, and OSM notification are all correct.

REFERENCES
1. AP/1/A/1700/008, Loss of Control Room, Rev. 11.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C A C C B B B A B C Scramble Range: A - D

Tier:	2	Group:	2
Key Word:	FIRE NOTIFICATION	Cog Level:	MEM 3.3
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

16. BW/A08G2.2.29 001

The following Unit 1 conditions exist:
- Refueling is in progress
- Containment penetration testing is in progress
- Reactor has been subcritical for 96 hours
- A fuel handling accident has just occurred in the reactor building

Which one of the following correctly describes containment closure requirements and outside air booster fan starting requirements?

Add Rac.

A. Containment closure must be established within 30 minutes of fuel damage. Control Room Outside Air Booster Fans must be started within 30 minutes to remain within the assumptions of the Control Room Habitability Submittal.

B. Containment closure must be established within 30 minutes of fuel damage. Control Room Outside Air Booster Fans must be started within 1 hour to remain within the assumptions of the Control Room Habitability Submittal.

C. Containment closure must be established within 1 hour of fuel damage. Control Room Outside Air Booster Fans must be started within 30 minutes to remain within the assumptions of the Control Room Habitability Submittal.

D. Containment closure must be established within 1 hour of fuel damage. Control Room Outside Air Booster Fans must be started within 1 hour to remain within the assumptions of the Control Room Habitability Submittal.

K/A
Fuel Handling Accident
Knowledge of SRO fuel handling responsibilities

K/A MATCH ANALYSIS
Containment closure and CR ventilation are both SRO responsibilities during the fuel handling accident.

SRO-ONLY ANALYSIS
Time requirement for contaiment closure is an SRO-only responsibility and time requirement for starting Outside Air Booster Fans is SRO-only because the time requirement is part of the Habitability Analysis.

ANSWER CHOICE ANALYSIS
A. Correct. See referenced procedure.
B. Incorrect.
C. Incorrect.
D. Incorrect.

Plausibility of distractors is based on memory level of question and the fact that all times provided are 1 hour or less.

REFERENCES
1. AP/1/A/1700/009, Spent Fuel Damage, Rev. 05.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A A D D C B D D C D Scramble Range: A - D

Tier:	1	Group:	2
Key Word:	FUEL HANDLING ACCIDE	Cog Level:	MEM 3.8
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

17. BW/E02EA2.2 001

Unit 1 conditions:
- Reactor has tripped
- Primary to Secondary leak rate is 150 gpm
- Operators have just entered EP/1/A/1800/001, SGTR

Which one of the following correctly describes EP/1/A/1800/001 pressurizer level control requirements and the reasons for those requirements?

A. Maintain pressurizer level between 140 and 180 inches. This pressurizer level band is necessary to prepare for subsequent RCS cooldown.

B. Maintain pressurizer level between 140 and 180 inches. This pressurizer level band is necessary to allow the RCPs to be secured to reduce forced flow through the ruptured steam generator.

C. Maintain pressurizer level greater than 220 inches. This pressurizer level band is necessary to prepare for subsequent RCS cooldown.

D. Maintain pressurizer level greater than 220 inches. This pressurizer level band is necessary to allow the RCPs to be secured to reduce forced flow through the ruptured steam generator.

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K/A
Reactor Trip - Stabilization - Recovery / 1
Ability to determine and interpret the following as they apply to the (Vital System Status Verification): Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

K/A MATCH ANALYSIS
Proper maintenance of pressurizer level is necessary to maintain the plant within procedures after the reactor has tripped. Pressurizer level affects core cooling and will aid with subcooling if pzr heaters can be maintained energized. Adherence to EOPs is incorporated in the license via the Admin Section of Tech Specs.

SRO-ONLY ANALYSIS
Basis information is being tested for the reason why the level band must be maintained.

ANSWER CHOICE ANALYSIS
A. Correct. With the reactor tripped the level band is 140 to 180 inches per EP/1/A/1800/001, Page 1 of 69. The lesson plan (Page 14) states that the higher than normal pzr level band is needed for subsequent cooldown and inventory loss.
B. Incorrect. It is actually good to maintain RCPs running to provide for a more controlled cooldown. Plausible because it is logical to believe that forcing water through the SG and increasing the leak rate would be an adverse action, therefore securing RCPs would help.
C. Incorrect. 220 inches is wrong. Plausible because 220 inches is correct when the reactor has not tripped. Also plausible because the reason is correct.
D. Incorrect. 220 inches is wrong. Plausible because 220 inches is correct when the reactor has not tripped. Also plausible as stated in "B".

REFERENCES
1. Lesson Plan EAP-SGTR, SG Tube Rupture, Rev. 15a.
2. EP/1/A/1800/001 G, EOP - SGTR, Rev. 34.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: A D B B D B D C D B Scramble Range: A - D

Tier:	1	Group:	1
Key Word:	SGTR SGTL	Cog Level:	MEM 3.8
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

18. BW/E04AG2.4.48 001

The following Unit 1 conditions exist:
- Operators just entered the LOHT tab
- SRO has given direction for Rule 3 to be commenced
- SCM = 25 °F and decreasing slowly
- Pressurizer level = 300 inches
- RCS pressure = 2100 psig
- Main Feedwater is not available
- Emergency Feedwater is not available
- All RCP control indications show the RED light ON

Which one of the following correctly describes which RCPs should be secured, allowing for the best possible pressurizer spray, as stated in the the LOHT tab and the reason for the action?

A. Secure RCP 1A1 and 1B1.
One RCP in each loop should be running since it is unknown which steam generator will be fed once feedwater is recovered.

B. Secure RCP 1A2 and 1B2.
One RCP in each loop is required to be secured due potential loss of RCP support conditions.

C. Secure 1A2, 1B1 and 1B2.
Three RCPs should be secured to reduce heat input to the RCS.

D. Secure RCP 1A2 and 1B2.
One RCP in each loop should be secured since it is unknown which steam generator will be fed once feedwater is recovered.

K/A
Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4
Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.

K/A MATCH ANALYSIS
Applicants must evaluate plant conditions to determine how many RCPs should be secured. Two RCPs must be secured to reduce heat load and allow for recover of FW to either SG. If the operator choses to secure 3 RCPs and FW is able to be restored to the SG with no FW, then his actions would adversely affect the RCS.

SRO-ONLY ANALYSIS
Applicant must know basis behind leaving one RCP running in each loop.

ANSWER CHOICE ANALYSIS
A. Incorrect. Securing the '1A1' RCP would be contrary to the Note in the referenced procedure. Plausible because the reason is correct and the applicant may confuse which loop provides the best pzr spray.
B. Incorrect. Lesson plan does not mention that loss of RCP support conditions would be a reason for going to one operating pump in each loop. Plausible because RCPs do have specific conditions for operation. Also plausible because the pump combination is correct.
C. Incorrect. Plausible because securing three RCPs lowers the heat load more than secureing two RCPs.
D. Correct. LOHT Step 3 RNO gives requirement to go to one RCP in each loop. The note states that RCP 1A1 should be left running. The basis is as stated (see referenced lesson plan Page 11 of 31.

REFERENCES
1. EP/1/A/1800/001 E, LOHT, Rev. 34.
2. Lesson Plan EAP-LOHT, Loss of Heat Transfer, Rev. 12.
3. OC03301, BW/E04EK3.3

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D C D B D D C A A A Scramble Range: A - D

Tier:	1	Group:	1
Key Word:	LOHT HEAT FEEDWATER	Cog Level:	C/A 3.8
Source:	M	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

19. G2.1.10 001

Unit 1 is cooling down to enter a refueling outage with the following conditions:

- RCS Average Temperature = 300 °F
- CFTs are properly isolated
- LTOP is operable
- PORV is operable with proper setpoints
- HPI Pump '1B' is tagged out for maintenance

- Train 'A' HPI Status
  - HP-26 shut with breaker closed and switch tagged
  - HP-410 shut with breaker closed and switch tagged
  - HP-120 is open

- Train 'B' HPI status
  - HPI Pump '1C' has its motor breaker opened and tagged
  - HP-27 shut with breaker closed and switch tagged
  - HP-409 shut with breaker closed and switch tagged

Given the above plant conditions, which one of the following correctly describes actions, if any, required to be taken in accordance with LCO 3.4.12, Low Temperature Overpressure Protection (LTOP) System?

A. The LCO is not applicable in Mode 3. No action statements are required to be performed.

B. The LCO applicability statement is met. The conditions of the LCO are met, therefore no action statements are required to be performed.

C. The conditions of the LCO are not met. The LCO requires that HP-409 and HP-410 have their breakers opened and tagged.

D. The conditions of the LCO are not met. The LCO requires HP-26 to have its breaker opened and tagged and its handwheel closed and tagged.

K/A
Knowledge of conditions and limitations in the facility license.

K/A MATCH ANALYSIS
Tech Specs are part of the license.

SRO-ONLY ANALYSIS
Deactivation of HPI SI flowpaths are described in the TS Bases.

ANSWER CHOICE ANALYSIS
A. Incorrect. LCO is applicable in Mode 3 with Temp < 325F. Plausible because this would be correct if at higher Temp in Mode 3.
B. Incorrect. LCO conditions are not met because HPI train 'A' is not deactivated iaw TS Bases (Page B 3.4.12-7). Plausible because HPI valves are closed on 'A' Train and 'B' Train pump motor bkr is open and tagged.
C. Incorrect. The TS Basis states that 409 and 410 are required to be closed and handswitch tagged, but does not require that their breakers to be tagged opened.
D. Correct. See TS Bases Page 3.4.12-7.

REFERENCES
1. Tech Spec 3.4.12 and Bases.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: D A C B C A B D B B Scramble Range: A - D

Tier:	3	Group:	
Key Word:	TECH SPEC TS	Cog Level:	C/A 3.9
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

20. G2.1.6 001

Unit 1 and 2 are at 100% power. Currently each Unit has an SRO, a BOP, and an OATC operator in their respective stations in the control room. The Unit 1 SRO needs to step out of the control room to address an issue in the plant.

Which one of the following correctly describes OMP 2-01, Duties and Responsibilities of On-shift Operations Personnel, requirements for the Unit 1 SRO leaving the Control Room?

A. The Unit 1 SRO is not permitted to leave the control room for any amount of time unless properly relieved by another SRO.

B. The Unit 1 SRO can leave the Control Room for up to five minutes without conducting a proper turnover to another SRO. The Unit 2 SRO will assume the role of procedure reader if Unit 1 trips until a proper turnover can be completed with the Unit 1 SRO.

C✓ The Unit 1 SRO can leave the Control Room for up to five minutes without conducting a proper turnover to another SRO. The Unit 1 SRO must return to his position as procedure reader if Unit 1 trips.

D. The Unit 1 SRO can leave the Control Room for up to 10 minutes without conducting a proper turnover to another SRO. The Unit 1 SRO must return to his position as procedure reader if Unit 1 trips.

K/A
Ability to supervise and assume a management role during plant transients and upset conditions.

K/A MATCH ANALYSIS
Abnormal plant conditions exist and knowledge of who is procedurally required to take role of procedure reader is being tested.

SRO-ONLY ANALYSIS
Procedure reader responsibilities are an SRO-only function.

ANSWER CHOICE ANALYSIS
A. Incorrect. Per OMP 2-1 SRO can leave for up to 5 minutes. Plausibility based on standard requirement in OMP 2-1 that SRO shall be in CR within audible range of alarms and ROs.
B. Incorrect. The Unit 1 SRO is still responsible for Proc Reader duties. Plausibility based on it being a reasonable assumption that the SRO left in the Control Room would assume the procedure reading responsibility.
C. Correct. See OMP 2-1 Page 16 and 18.
D. Incorrect. 10 minutes is beyond the 5 minute requirement. Plausible because SRO may know that they can step out for a moment, but they may not remember the specific time requirement.

REFERENCES
1. OMP 2-01, Duties and Responsibilities of On-shift Operations Personnel, Rev. 065.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C B C B B B D A D A Scramble Range: A - D

Tier:	3	Group:	
Key Word:	SHIFT STAFFING	Cog Level:	MEM 4.3
Source:	N	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

21. G2.2.11 001

Which one of the following correctly describes the approval requirements for performing steps out of order in an OPS Test procedure, in accordance with OMP 1-28, Procedure Use and Adherence?

A. Only the OSM can approve performance of steps out of sequence.

B. Only the Ops Test Supervisor can approve performance of steps out of sequence.

C. The OSM OR Ops Test Supervisor can approve performance of steps out of sequence.

D. The OSM AND Ops Test Supervisor must approve performance of steps out of sequence.

K/A
Knowledge of the process for controlling temporary changes.

K/A MATCH ANALYSIS
Question requires knowledge of who must approve steps being performed out of order for an Ops Test Procedure. This is a means of temporarily changing a procedure when steps were written to be performed in a specific order.

SRO-ONLY ANALYSIS
Approving the out-of-order performance of the steps is an SRO (OSM) function.

ANSWER CHOICE ANALYSIS
A. Incorrect because Ops Test Supv can also approve performance of steps out of order. Plausible because the OSM can approve performance of steps out of order.
B. Incorrect because OSM can also approve performance of steps out of order. Plausible because the Ops Test Supv can approve performance of steps out of order.
C. Correct. Per OMP 1-28, Section 8.
D. Incorrect because both are not required to approve performance of steps out of order. Plausible because either one or the other is required to approve.

REFERENCES
1. OMP 1-28, Procedure Use and Adherence, Rev. 6.

MCS	Time: 1	Points: 1.00	Version:	0 1 2 3 4 5 6 7 8 9	
			Answer:	C C D C C A C A C A	Scramble Range: A - D
Tier:	3		Group:		
Key Word:	PROCEDURE CHANGE		Cog Level:	MEM 3.4	
Source:	N		Exam:	OC2006-301	
Test:	S		Author/Reviewer:	MAB/RFA	

22. G2.2.23 001

Unit 1 is in Mode 1 with the following conditions and activities taking place:

- The 'A' Train HPI Safety Grade Flow Indicator was removed from service for replacement at 0800 hours on Monday
- The new 'A' Train HPI Safety Grade Flow Indicator was installed at 1100 hours on Tuesday
- On Tuesday at 1200 hours the Control Room Supervisor was informed that the 'B' Train HPI Safety Grade Flow Indicator was inoperable
- On Tuesday at 1230 hours the 'A' Train HPI Safety Grade Flow Indicator was declared operable

Which one of the following correctly states the latest time when the 'B' HPI Train is required to be operable per LCO 3.5.2?

(REFERENCE PROVIDED)

A. Thursday at 0800 hours.

B. ✓ Friday at 0800 hours.

C. Friday at 1200 hours.

D. Friday at 1230 hours.

Provide only: LCO 3.5.2, Pages 3.5.2-1 through 3.5.2-4.

K/A
Ability to track limiting conditions for operations.

K/A MATCH ANALYSIS
The applicant must have knowledge of tracking LCO completion times in order to arrive at the correct answer.

SRO-ONLY ANALYSIS
Question tests completion time extension knowledge. This is in-depth knowledge typically only applied at the SRO level.

ANSWER CHOICE ANALYSIS
A. Incorrect. Plausible because this is 72 hours after the LCO was initially entered.
B. Correct. The inoperabilities existed at same time AND subsequent inoperability remained after the first was resolved. The more restrictive of the completion time extension options applies.
C. Incorrect. Plausible because this is 72 hours after the 'B' HPI Train was declared inoperable.
D. Incorrect. Plausible because this is 72 hours after the 'A' HPI Train was declared operable, leaving only the one train of HPI in an inoperable status.

REFERENCES
1. Question modified from a Vogtle 2005-301 RO exam draft submittal.
2. Oconee Technical Specifications, Section 1.3, Completion Times.
3. Oconee Technical Specifications, Section 3.5.2, ECCS & Bases B3.5.2.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: B A D A C A C A B A Scramble Range: A - D

Tier:	3	Group:	
Key Word:	TECH SPEC TS	Cog Level:	C/A 3.8
Source:	M	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

23. G2.3.8 001

The station is preparing to release two GWD Tanks. Due to releases earlier in the calandar quarter, it is expected that the release of the first tank (GWD Tank '1C') will result in:

Current Quarter Accumulated Air Dose Due to Noble Gas:
- 2 mrad for gamma
- 8 mrad for beta

It is expected that the release of the second tank (GWD Tank '1D') will result in:

Current Quarter Accumulated Air Dose Due to Noble Gas:
- 4 mrad for gamma
- 9 mrad for beta

(Assume all other effluent parameters are within limits for the release)

The plan is to start the GWD Tank "1C" release and once it is in progress, then start releasing GWD Tank "1D", so that they will both be released simultaneously.

Which one of the following correctly describes whether the tanks can be released and the minimum level of approval that is required for the release of GWD Tank "1C" and "1D", if they can be released?

(REFERENCE PROVIDED)

A. Based on the dose rate expected from the noble gases, both tanks may be released. The CRS is permitted to approve the release of both tanks.

B. Based on the dose rate expected from the noble gases, both tanks may be released. The CRS is permitted to approve the release of GWD Tank "1C", but the OSM is required to approve the release of GWD Tank "1D".

C. Based on the dose rate expected from the noble gases, both tanks may be released. The OSM is required to approve the release of both GWD Tanks.

D. Based on the dose rate expected from the noble gases, the GWD Tanks are not permitted to be released by the CRS or OSM.

Provide SLC 16.11.2 pages 16.11.2-1 through 16.11.2-4.

K/A
Knowledge of the process for performing a planned gaseous radioactive release.

K/A MATCH ANALYSIS
The process has the SRO or OSM approve the release and the question tests knowledge of this.

SRO-ONLY ANALYSIS
This is an SRO function as designated by procedure.

ANSWER CHOICE ANALYSIS
A. Incorrect. The CRS is only permitted to approve the release of one tank.
B. Correct. SRO approval required for levels up to 1/3 Station Limit with one tank being released. OSM approval required for levels up to 1/3 Station Limit with two tanks being released.
C. Incorrect. The OSM is not required to approve both releases. Plausible because the OSM is required to approve the release of the second tank.
D. Incorrect. Plausible because the OSM would not be authorized to approve the release with nable gas dose rates above 2/3 station limit.

REFERENCES
1. SLC 16.11.2, Radioactive Gaseous Effluents.
2. OP/1-2/A/1104/018, GWD System, Rev. 59.

MCS	Time: 1	Points: 1.00	Version:	0 1 2 3 4 5 6 7 8 9	
			Answer:	B C D B C D D A A A	Scramble Range: A - D
Tier:	3		Group:		
Key Word:	GWD GASEOUS RELEASE		Cog Level:	MEM 3.2	
Source:	N		Exam:	OC2006-301	
Test:	S		Author/Reviewer:	MAB/RFA	

Requirement

24. G2.4.38 001

Which one of the following correctly describes the Immediate Actions of RP/0/B/1000/024, Protective Action Recommendations, with respect to protective action recommendations to the public?

A. Evacuate 2 mile radius only. Shelter any sectors within a 5 mile radius.

B. Evacuate 5 mile radius only. Shelter any sectors within a 10 mile radius.

C. Evacuate 2 mile radius and 5 miles downwind unless conditions make evacuation dangerous. Shelter any sectors not evacuated.

D. Evacuate 5 mile radius and 10 miles downwind unless conditions make evacuation dangerous. Shelter any sectors not evacuated.

K/A
Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator.

K/A MATCH ANALYSIS
The question requires knowledge of PAR, which is a function of the emergency coordinator.

SRO-ONLY ANALYSIS
OSM will be the initial emergency coordinator during the event. It could be his responsibility to make the initial PAR. An RO would not be required to know this.

ANSWER CHOICE ANALYSIS
A. Incorrect. Plausible due to being partially correct. It is required to evacuate within a 2 mile radius. Incorrect because 5 mile radius downwind is also required to be evacuated.
B. Incorrect. Plausible because it is required to evacuate some of the population within a 5 mile radius. Incorrect because only the downwind sectors of that 5 mile radius is required to be evacuated.
C. Correct. Per RP/0/B/1000/024, Step 2.
D. Incorrect. Plausible because this is an actual protective action, but not the initial protective action.

REFERENCES
1. Vogtle 2003-301, G2.4.44.
2. RP/0/B/1000/024, Protective Action Recommendations, Rev. 4.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9
Answer: C C A A D A B A B B Scramble Range: A - D

Tier:	3	Group:	
Key Word:	PAR	Cog Level:	MEM 4.0
Source:	B	Exam:	OC2006-301
Test:	S	Author/Reviewer:	MAB/RFA

25. G2.4.6 001

Unit 1 has experienced a Reactor Trip and no source of feedwater is available. The crew is performing EP/1/A/1800/001, Loss of Heat Transfer.

The following conditions exist:
- Pressurizer level = 300 inches and rising
- Pressurizer pressure = 2200 psig and rising
- No HPI flow is availble
- No RCPs are operating

Which one of the following correctly describes the reason for cycling the PORV as necessary to maintain pressure between 2300 psig and minimum SCM?

A. To ensure the maximum amount of energy is removed while minimizing RCS inventroy loss.

B. To prevent the pressurizer safety valves from lifting and maximize HPI flow when HPI is restored.

C. To prevent PTS conditions when HPI flow is restored.

D. To allow natural circulation to develop when feedwater is restored.

K/A
Knowledge of symptom based EOP mitigation strategies.

K/A MATCH ANALYSIS
Question tests knowledge of why the PORV is cycled. This is testing a reason for an EOP mitigation strategy, which is employed based on symptoms exhibited by the plant.

SRO-ONLY ANALYSIS
SRO-only level because it involves procedure basis knowledge.

ANSWER CHOICE ANALYSIS
A. Correct. Per referenced lesson plan, page 14 of 31, Step 2.13.
B. Incorrect. Plausible because first part of distractor is correct.
C. Incorrect. Plausible because Rule 8, PTS, is invoked when HPI is injecting with no RCPs operating.
D. Incorrect. Plausible because RCS must be pressurized for natural circ when feedwater is restored; however, this is not the reason for manually cycling the PORV.

NOTE:
Initially my distractor for "B" was as follows:
To prevent the pressurizer safety valves from lifting and RCS pressure approaching on the SCM limit.
(My fear was that it may be correct. My initial thinking was that the most urgent problem with sticking a safety valve open would be the inventory loss and not the encroachment on SCM limits. - As the reviewer, think about whether this would be a correct answer because I like it better as a distractor if, in fact, it is clearly an incorrect answer choice.)

REFERENCES
1. EP/1/A/1800/001, Loss of Heat Transfer.
2. Crystal River 2003-301 SRO question, G2.4.6.
3. Lesson Plan EAP-LOHT, Loss of Heat Transfer, Rev. 12.

MCS	Time:	1	Points:	1.00	Version:	0 1 2 3 4 5 6 7 8 9	
					Answer:	A C C A C D B D D C	Scramble Range: A - D
Tier:		3			Group:		
Key Word:		LOHT HEAT TRANSFER			Cog Level:	MEM 4.0	
Source:		B			Exam:	OC2006-301	
Test:		S			Author/Reviewer:	MAB/RFA	