

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

1. 003AA2.02 001/OPS 4-14 OBJ. 4 & 7/1-2/REV 5/C/A 2.7/2.8/06-29-11/SRO/NO/MOD

The following plant conditions exist:

- The plant is at 100% power.
- A malfunction occurs and the *Rx Demand* station transferred to HAND.
- Prior to any operator action control rod 7-1 drops fully into the core.

In order to meet the REQUIRED ACTION of TS 3.1.4, Control Rod Group Alignment Limits, reactor power must be reduced within   (1)   hour(s).

If NO operator actions are taken the runback signal will cause feedwater flow to lower   (2)   .

- A.       (1)   2  
          (2)   but the reactor will NOT trip
  
- B.       (1)   6  
          (2)   but the reactor will NOT trip
  
- C. ✓     (1)   2  
          (2)   and the reactor will trip
  
- D.       (1)   6  
          (2)   and the reactor will trip

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003AA2.02 - Ability to determine and interpret the following as they apply to the Dropped Control Rod: Signal inputs to rod control system

SRO Only Analysis - Knowledge of > 1 hour TS actions required.

Reasons:

A runback signal is generated which will lower FW demand at 30% per minute. Since FW now has control of Tave this signal will also lower FW demand. The control rods cannot withdraw due to the out inhibit from the dropped rod even though the neutron error is trying to pull rods.

The rod is operable but TS Action 3.1.4.A.2.2 is required to be met. Lower power to  $\leq 60\%$  RTP within 2 hours.

- A. The first part of the distractor is correct. The second part of the distractor is plausible since this would be correct if the *Rx Diamond* station had transferred to HAND.
- B. The first part of the distractor is plausible since TS 3.1.4 contains a 6 hour requirement to be in Mode 3 if the completion times of Condition A are not met. The second part of the distractor is plausible since this would be correct if the *Rx Diamond* station had transferred to HAND.
- C. Correct. FW flow will lower due to the runback, neutron error cross-limit and low Tave signals. Rods cannot pull due to the out inhibit. Rods will not insert because neutron error is in the opposite direction, attempting to pull. A reactor trip on high RCS pressure will occur due to the reduction in FW with no rod motion. IAW TS 3.1.4 Required Action A.2.2 power reduction is required within 2 hours.
- D. The first part of the distractor is plausible since TS 3.1.4 contains a 6 hour requirement to be in Mode 3 if the completion times of Condition A are not met. The second part of the distractor is correct.

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OPS 4-14 Obj. 4 & 7; OPS 4-14 Sections 4.0.H.14.c & 15.0 Table 3; OPS 4-28  
Sections 4.0.G.3.b & 4.0.M.1.q; TS 3.1.4 and Bases; 10CFR55.43.b.2

SRO - New

Reference(s) provided: None

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2. 007EA2.04 001/OPS 5-96 OBJ 6/1-1//MEM 4.1/4.1/01-18-11/SRO/NO/BANK

The following plant conditions exist:

- The plant was operating at 100% power when the "B" MFWBP tripped.
- AP-545, Plant Runback, was entered.
- During the runback the PORV opened and operated as designed.

Which ONE of the following describes the required actions to be performed?

- A. Verify plant conditions are approaching stability and complete AP-545, Plant Runback.
- B. Enter AP-504, Integrated Control System Failure, take manual control of FW and RX stations and lower power to 50%.
- C. ✓ Enter EOP-02, Vital System Status Verification, and depress the manual Rx trip push button and verify control rod groups 1 through 7 are fully inserted.  
If any control rod group has NOT fully inserted then open breakers 3305 and 3312.  
If breaker 3305 does not open then open additional breakers as required to *de-energize* the CRDs.
- D. Enter EOP-02, Vital System Status Verification, and depress the manual Rx trip push button and verify control rod groups 1 through 7 are fully inserted.  
If any control rod group has NOT fully inserted then open breakers 3305 and 3312.  
If breaker 3305 does not open then start emergency boration and ensure adequate primary to secondary heat transfer is maintained.

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007EA2.04 - Ability to determine or interpret the following as they apply to a reactor trip: If reactor should have tripped but has not done so, manually trip the reactor and carry out actions in ATWS EOP

SRO Analysis - Requires assessing plant conditions and directing actions to be taken that are not addressed by plant procedures to ensure the reactor is shut down.

Reasons:

- A. Plausible since the setpoints for PORV opening and High Pressure Rx trip are close (2450 psig vs 2355 psig). Also, based on the fact that the plant did not trip, designed for a loss of 1 MFWBP at power, it may make sense not to introduce another transient.
- B. Plausible since these are the required actions if an ICS failure occurs. In this case the candidate may believe the plant did not runback as designed and he must take manual control and perform the runback manually to 50%.
- C. Correct. Immediate Action steps of EOP-2 require the opening of breakers 3305 and 3312 if a control rod GROUP has not fully inserted. Even though opening additional breakers is not proceduralized the EOP-TBD states that additional breakers should be opened until the CRDs are successfully de-energized.
- D. Plausible since the first steps are correct per EOP-2. Emergency boration is addressed in the third Immediate Action if the reactor does not indicate shutdown. However, with the conditions given, additional breakers should be opened to de-energize the CRDs prior to continuing on to the third Immediate Action step.

OPS 5-96 Obj. 6; EOP-2 Steps 2.2 & 2.3; EOP-2 Cross Step Document;  
10CFR55.43.b.5

SRO - Bank (stem and 2 distractors modified)

Reference(s) provided: None

## QUESTIONS REPORT

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3. 008G2.4.41 001/OPS 5-01 OBJ 12/2-1/REV 3/C/A 2.9/4.6/03-21-11/SRO/NO/NEW

The following plant conditions exist:

- The plant is at 100% power.
- At 0900 DCP-1A and DCP-1B are declared inoperable due to a common cause failure.
- At 2200 RCS temperature is 320° F.

At no later than \_\_ (1) \_\_ a(n) \_\_ (2) \_\_ must be *declared* IAW EM-202, Duties of the Emergency Coordinator.

- A. ✓
  - (1) 2215
  - (2) Unusual Event
- B.
  - (1) 2215
  - (2) Site Area Emergency
- C.
  - (1) 2230
  - (2) Unusual Event
- D.
  - (1) 2230
  - (2) Site Area Emergency

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008G2.4.41 - Knowledge of the emergency action level thresholds and classifications: SW / DC cooling

SRO Analysis - Requires assessing plant conditions, determining operating limitations, required entry into TS 3.0.3 and time requirements, and knowledge of emergency action levels and classifications.

Reasons:

- A. Correct. The loss of both DCPs requires entry into LCO 3.0.3. This spec requires the plant to be in Mode 4 (< 280° F) within 13 hours. EAL 3.5, Inability to Reach Required Mode Within TS Time Limits, must be entered and an Unusual Event declared within 15 minutes of discovery.
- B. The first part of the distractor is correct. The second part of the distractor is plausible since this is a required action if unable to maintain hot shutdown conditions in Modes 1 thru 4.
- C. The first part of the distractor is plausible since this is the time requirement for notifying the State Watch Office. The second part of the distractor is correct.
- D. The first part of the distractor is plausible since this is the time requirement for notifying the State Watch Office. The second part of the distractor is plausible since this is a required action if unable to maintain hot shutdown conditions in Modes 1 thru 4.

OPS 5-01 OBJ 12; TS 3.0.3 and EAL 3.5.2; EM-202 Enclosure 1, Page 13;  
EM-202 Section 9.1; 10CFR55.43.b.2 & 5

SRO - New

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

4. 010A2.01 001/OPS 5-01 OBJ 12/2-1/REV 1/C/A 3.3/3.6/03-21-11/SRO/NO/NEW

The following plant conditions exist:

- The plant is at 100% power.
- Breaker 3395, Reactor Aux Bus 3A to ES 480V Bus 3A Tie, closing mechanism has broken.
- Breaker 3305, Feed to Reactor Aux Bus 3A from 4160V Unit Bus 3A, remains operable.

Which ONE of the following describes the impact, if any, of this failure on the Pressurizer?

This failure will:

- A. NOT require entry into TS 3.4.8, Pressurizer. Normal Pressurizer heater capability still exists.
- B. NOT require entry into TS 3.4.8, Pressurizer. Emergency Pressurizer heater capability still exists.
- C. require entry into TS 3.4.8, Pressurizer. Pressurizer heater capability *must* be restored within 1 hour.
- D. ✓ require entry into TS 3.4.8, Pressurizer. Pressurizer heater capability *must* be restored within 72 hours.



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010A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the PZR PCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:  
Heater failures

SRO Analysis - Requires assessing plant conditions and determining operating limitations from a table in the TS bases.

Reasons:

- A. Plausible since the normal PZR heater power supply is still available.
- B. Plausible since the emergency power supply requirements are only listed in the SR section of TS and the bases.
- C. Plausible since first part of distractor is correct. Per TS 3.4.8, Condition A, PZR level must be restored within 1 hour, not emergency heater capability.
- D. Correct. Per TS 3.4.8, Condition B, emergency heater capability must be restored within 72 hours.

OPS 5-01 OBJ 12; TS 3.4.8 and Bases; OP-700A Enclosure 12; 10CFR55.43.b.2

SRO - New

Reference(s) provided: None

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5. 015A2.05 001/OPS 4-10 OBJ 7/2-2/REV 3/C/A 3.3/3.8/07-01-11/SRO/NO/NEW  
The following plant conditions exist:

- A LOCA is in progress.
- The Severe Accident Region of EOP-07, Inadequate Core Cooling, has been entered.

Which ONE of the following describes the impact that *reactor vessel downcomer voiding* will have on the excore NIs and the procedure that will be used for maintaining core cooling for these plant conditions?

As downcomer voiding rises, excore NI counts will   (1)  .

Core cooling will be maintained IAW   (2)  .

- A. ✓
  - (1) rise
  - (2) EM-225E, Guideline for Long Term Cooling
- B.
  - (1) rise
  - (2) EM-225F, Long Term Emergency Feedwater Management
- C.
  - (1) lower
  - (2) EM-225E, Guideline for Long Term Cooling
- D.
  - (1) lower
  - (2) EM-225F, Long Term Emergency Feedwater Management

015A2.05 - Ability to (a) predict the impacts of the following malfunctions or operations on the NIS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Core void formation.

1150501001 - Direct the operating shift during an emergency event.

SRO Only Analysis - Requires knowledge of TSC directed emergency plan implementing procedures to mitigate core void formation during severe accident conditions.

Reasons:

Explanation of excore NI response to core voiding:

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As the core uncovers, the gain in detection efficiency caused by voiding the downcomer (less shielding of neutrons) will more than compensate for the reduction in neutrons produced in the area of the core that is uncovered. As a result, detector count rate will rise as the core begins to uncover. With continued core uncover, less and less neutrons will be available to the upper core due to the loss of water in this region. The loss of this neutron "source" will begin to compensate for the shielding changes in the downcomer. At this point the count rate will reach a maximum value and begin to fall as the core water level continues to lower.

- A. Correct. See explanation above concerning NI response to core voiding. EOP-07 Step 3.42 directs notification of the TSC that a severe accident is occurring. The purpose of EM-225E is to provide guidance to the TSC Accident Assessment Team for maintaining long term core cooling post LOCA.
- B. The first part of the distractor is correct. The second part of the distractor is plausible since this is a TSC directed procedure for removing core decay heat when OTSG heat transfer is required; however, if the Severe Accident Region is reached OTSGs are not available and long term EFW management is not required.
- C. The first part of the distractor is plausible per the explanation above. The second part of the distractor is correct.
- D. The first part of the distractor is plausible per the explanation above. The second part of the distractor is plausible since this is a TSC directed procedure for removing core decay heat when OTSG heat transfer is required; however, if the Severe Accident Region is reached OTSGs are not available and long term EFW management is not required.

OPS 4-10 OBJ 7; OPS-4-10 Section 11.0.A; EOP-07 Step 3.42; EM-225A;  
10CFR55.43.b.5

SRO - New

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

6. 022A2.02 001/OPS 4-63 OBJ 8/2-1/REV 2/C/A 2.3/2.6/04-01-11/SRO/NO/NEW

The following plant conditions exist:

- The plant is in Mode 4.
- AHF-1A has just been started for the performance of SP-344C, Containment Cooling System Fan and Valve Surveillance, following motor bearing replacement.

Ten minutes later:

- Annunciator B-02-04, RB Fan A Vibration High, alarms.
- The "AHF-1A Vibra Switch Reset" pushbutton is immediately depressed by the RO and the alarm does NOT clear.

During the performance of the SP, AHF-1A was running in (1) speed. The fan will be shut down AND the PPO will be directed to manually isolate cooling water IAW (2).

- A. (1) low  
(2) AR-302, ESB Annunciator Response
- B. (1) high  
(2) AR-302, ESB Annunciator Response
- C. ✓ (1) low  
(2) OP-417, Containment Operating Procedure
- D. (1) high  
(2) OP-417, Containment Operating Procedure

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022A2.02 - Ability to (a) predict the impacts of the following malfunctions or operations on the CCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:  
Fan motor vibration

0880402011 - Respond to reactor building fan alarms.

SRO Only Analysis - Requires in-depth knowledge of surveillance procedure and selection of appropriate procedure to secure and isolate non-ES selected AH fan.

Reasons:

- A. The first part of the distractor is correct. The second part of the distractor is plausible since this is the annunciator response procedure that will be utilized when the alarm first comes in; however, there is no direction to isolate cooling water to the fan.
- B. The first part of the distractor is plausible since the candidate may have a misconception that the fans are required to run in fast speed to satisfy their safety function of removing heat from the containment atmosphere, but motor overload is the concern due to the high density atmosphere. The second part of the distractor is plausible since this is the annunciator response procedure that will be utilized when the alarm first comes in; however, there is no direction to isolate cooling water to the fan.
- C. Correct. SP-344C is performed at least once every 31 days to demonstrate the operability of the Containment Cooling Units (AHF-1A, 1B, 1C). The SP acceptance criteria requires each fan to operate in slow speed for at least 15 minutes since during accident conditions, the fans are operated at lower speeds to prevent motor overload due to the higher density containment atmosphere. Since AHF-1A only ran for 10 minutes, the fan remains inoperable and OP-417, Containment Operating Procedure, Step 3.2.13 requires isolation of cooling water to the non-ES selected fan.
- D. The first part of the distractor is plausible since the candidate may have a misconception that the fans are required to run in fast speed to satisfy their safety function of removing heat from the containment atmosphere, but motor overload is the concern due to the high density atmosphere. The second part of the distractor is correct.

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OPS 4-63 OBJ 8; OPS 4-63 Section 2-8.0.A; AR-302 EP 0351; SP-344C  
Acceptance Criteria; SP-344C Steps 4.1.6 and 5.2.2; OP-417 Step 3.2.13 and  
Section 4.7; TS 3.6.6

SRO - New

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

7. 026A2.08 001/OPS 5-95, OBJ. 5/2-1/REV 2/C/A 3.2/3.7/04-18-11/SRO/NO/MOD

The following plant conditions exist:

- A large break LOCA is in progress.
- Building Spray was actuated 6 hours ago.
- RB pressure is 8 psig and stable.
- RB atmosphere I-131 is 17  $\mu\text{Ci/cc}$ .
- TSC has approved securing building spray if all other requirements are met.

Which ONE of the following choices represents the correct building spray requirements for these conditions?

- A. IAW EOP-08A, LOCA Cooldown, building spray may be secured.
- B. IAW EOP-03, Inadequate Subcooling Margin, building spray may be secured.
- C. ✓ IAW EOP-08A, LOCA Cooldown, building spray *cannot* be secured.
- D. IAW EOP-03, Inadequate Subcooling Margin, building spray *cannot* be secured.

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026A2.08 - Ability to (a) predict the impacts of the following malfunctions or operations on the BSS; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations: Safe securing of containment spray, when it can be done.

SRO Analysis - Requires in-depth knowledge of EOP steps (EOP-08A, Step 3.38)

Reasons:

- A. Plausible since EOP-08A is the correct procedure. Second part of distractor also plausible since all conditions are acceptable for securing RB spray with the exception of I-131. I-131 must be less than 13  $\mu\text{Ci/cc}$ .
- B. Plausible since EOP-03 is used to address LOCAs. Second part of distractor also plausible since all conditions are acceptable for securing RB spray with the exception of I-131. I-131 must be less than 13  $\mu\text{Ci/cc}$ .
- C. Correct. Securing RB Spray requires the following:
- More than 5 hours running
  - RB Press < 10 psig
  - RB Press stable or lowering
  - I-131 < 13  $\mu\text{Ci/cc}$
  - TSC approval
- All of the above requirements are met with the exception of I-131. I-131 must be less than 13  $\mu\text{Ci/cc}$ .
- D. Plausible since EOP-03 is used to address LOCAs. Second part of distractor is correct.

OPS 5-95, Obj. 5; OPS 4-62, Obj. 9; EOP-8A Step 3.38; 10 CFR 55.43.b.5

SRO - Modified (026A2.08/1 LOIBank)

Reference(s) provided: None



**QUESTIONS REPORT**  
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8. 029A2.01 001/OPS 5-121 OBJ 2/2-2/1150501001/C/A 2.9/3.6/03-18-11/SRO/YES/BANK

The following plant conditions exist following a LOCA:

- 542 hours post-LOCA 3.4% RB hydrogen concentration
- 550 hours post-LOCA 3.4% RB hydrogen concentration
- 558 hours post-LOCA 3.4% RB hydrogen concentration
- 575 hours post-LOCA (**time now**) 3.5% RB hydrogen concentration

Wind direction has been from 140° for the last 48 hours.

Which ONE of the following identifies the RB purge requirements for the above conditions? (**reference provided**)

The RB purge should be started:

- A. after RB H<sub>2</sub> concentration is  $\geq 3.6\%$ .
- B. after RB H<sub>2</sub> concentration is  $\geq 3.5\%$  for  $\geq 24$  hours.
- C. ✓ now with a *required* flow rate of 31 scfm.
- D. now with a *required* flow rate of 37 scfm.

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029A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the Containment Purge System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Maintenance or other activity taking place inside containment

SRO Only Analysis - Determining post-LOCA purge requirements and approving the purge are Emergency Coordinator (SRO) functions.

Reasons:

- A. Plausible since this answer would be correct if off shore winds did not exist.
- B. Plausible since this answer would be correct if off shore winds did not exist.
- C. Correct. Since off shore winds exist (Enclosure 2, Step 1.5) the RB purge should be started when RB H<sub>2</sub> concentration reaches  $\geq 3.5\%$  (Step 4.7). Purge flow is determined using Enclosure 10. Step 1.8 directs the operator to purge at the **required** flowrate.
- D. Plausible since this is the '*error corrected flowrate*' derived from Enclosure 10 and entered on Enclosure 6. However Step 1.8 directs the operator to purge at the **required** flowrate.

OPS 5-121 Obj 2; EM-225A, Steps 3.1.1 and 4.7, Enclosure 2 Step 1.5 and Enclosure 10; 10CFR55.43.b.4 & 5

SRO - Bank

Reference(s) provided: EM-225A

## QUESTIONS REPORT

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9. 038EG2.4.20 001/OPS 5-101 OBJ 4/1-1/REV 4/C/A 3.8/4.3/01-19-11/SRO/NO/MOD

The following plant conditions exist:

- A tube rupture has occurred in the "A" OTSG.
- The reactor has been manually tripped.
- RCS Tave is 520° F with a cooldown in progress at a rate of 50° F/½ hr.
- "A" OTSG level is at 80% and rising due to the tube rupture.
- "B" OTSG level is at LLL.

IAW EOP-06, Steam Generator Tube Rupture, which ONE of the following identifies the required OTSG steaming guidance and the basis for this requirement?

- A. Steam both OTSGs equally at the Emergency cooldown rate to prevent overflow.
- B. ✓ Preferentially steam the "A" OTSG at the Emergency cooldown rate to prevent overflow.
- C. Steam both OTSGs equally at the Normal cooldown rate to prevent violating TS cooldown rate limits.
- D. Preferentially steam the "A" OTSG at the Normal cooldown rate to prevent violating TS cooldown rate limits.

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038EG2.4.20 – Knowledge of the operational implications of EOP warnings, cautions, and notes: Steam Generator Tube Rupture

SRO Only Analysis - SRO only because TS cooldown rates will be violated and the requirement to establish the Emergency Cooldown rate is in a note on page 35. Preferential steaming guidance is provided in a note on page 39.

Reasons:

- A. Plausible since the Emergency Cooldown rate is used when OTSG level is rising due to the tube rupture and/or Initial Dose Equivalent I-131 is  $>0.002 \mu\text{Ci/g}$  (if steaming to atmosphere) with RCS Tave  $>500^\circ \text{F}$ . Also plausible since both OTSGs are used equally for steaming unless level is  $>70\%$ .
- B. Correct. Emergency Cooldown rate is used when OTSG level is rising due to the tube rupture and/or Initial Dose Equivalent I-131 is  $>0.002 \mu\text{Ci/g}$  (if steaming to atmosphere) with RCS Tave  $>500^\circ \text{F}$  (Note at Step 3.40 of EOP-06). Preferential steaming is only used when OTSG level is  $>70\%$  and affected OTSG not isolated per TRACC (Note at Step 3.43 of EOP-06). These actions are required to prevent OTSG overflow.
- C. Plausible since the Normal Cooldown rate will be in effect as soon as RCS temperature reaches  $<500^\circ \text{F}$  to prevent violating TS cooldown limits. Also plausible since both OTSGs are used equally for steaming unless level is  $>70\%$ .
- D. Plausible since the Normal Cooldown rate will be in effect as soon as RCS temperature reaches  $<500^\circ \text{F}$  to prevent violating TS cooldown limits.

OPS 5-101 Obj 4; EOP-6 Steps 3.40 & 3.43 with Notes; EOP-06 to TBD Cross Step Document; 10CFR55.43.b.2 & 5

SRO - Modified (039G2.4.20 LOIBank)

Reference(s) provided: None

**QUESTIONS REPORT**  
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10. 051AA2.02 001/OPS 5-128 OBJ. 5/1-2/FLEET/C/A 3.9/4.1/01-19-11/SRO/NO/NEW  
The following plant conditions exist:

- The plant is at 75% power.
- AP-607, Loss of Condenser Vacuum, has been entered.

Time	Condenser Vacuum	Hotwell Temperature
0900	28 In-Hg	110° F
0905	27 In-Hg	113° F
0910	26 In-Hg	116° F
0915	25 In-Hg	119° F

Which ONE of the following identifies the actions required to be taken IAW AP-607?

- A. Immediately trip the reactor and enter EOP-02, Vital System Status Verification, due to condenser vacuum exceeding limits.
- B. Immediately trip the reactor and enter EOP-02, Vital System Status Verification, due to hotwell temperature exceeding limits.
- C. Concurrently perform AP-510, Rapid Power Reduction, with the SG/RX Demand station in HAND, due to limits expected to be exceeded.
- D. ✓ Concurrently perform AP-510, Rapid Power Reduction, with the SG/RX Demand station in AUTO, due to limits expected to be exceeded.

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051AA2.02 - Ability to determine and interpret the following as they apply to the Loss of Condenser Vacuum: Conditions requiring reactor and/or turbine trip

1190402001 - Comply with requirements during abnormal and emergency events

SRO Analysis - Requires the assessment of plant conditions and knowledge of followup steps and vacuum/hotwell temperature limits embedded in tables in an Abnormal Procedure.

Reasons:

- A. Plausible since this would be the correct action if condenser vacuum had degraded to  $\leq 23$  In-Hg. Also plausible since this would be correct if reactor power was  $\leq 30\%$  (AP-607 Step 3.4 and Table 1).
- B. Plausible since this would be the correct action if hotwell temperature had exceeded 130° F (AP-607 Step 3.5).
- C. Plausible since a rapid power reduction and turbine trip would be directed if the vacuum limit or hotwell temperature limit was expected to be exceeded. The first action of this AP requires placing the SG/RX Demand station in HAND making this part of the distractor also plausible.
- D. Correct. A rapid power reduction and turbine trip is directed since condenser vacuum and hotwell temperature limits are expected to be exceeded with the given trends. Prior to entering AP-510 returning the SG/RX Demand station to AUTO is directed.

OPS 5-128 OBJ. 5; OPS 4-93, Obj. 5, 8 & 9; OPS 4-93 Section 8.A; AP-607 Steps 3.4, 3.5 & 3.6 and Table 1; 10CFR55.43.b.5

RO - New

Reference(s) provided: None

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11. 057AA2.06 001/OPS 4-91 OBJ 9/1-1/REV 1/C/A 3.2/3.7/01-21-11/SRO/NO/NEW

The following plant conditions exist:

- The plant was in Mode 1.
- Annunciator window P-06-02, Inverter C Trouble, is in alarm.
- Investigation reveals that Breaker #5, "C" Inverter Feeder, on DPDP-1A was inadvertently opened.
- With the above alarm still in a Loss of Offsite Power (LOOP) occurs.
- One minute later annunciator window Q-02-01, 4 KV ES Bus A Dead, is still in alarm.

The (1) Power Failure alarm is annunciated. With respect to the VBITs (Vital Bus Inverters) (2) .

- A. (1) ICS  
(2) ONLY VBIT-1C must be declared inoperable
- B. (1) ICS  
(2) VBIT-1A AND VBIT-1C must be declared inoperable
- C. ✓ (1) NNI-X  
(2) ONLY VBIT-1C must be declared inoperable
- D. (1) NNI-X  
(2) VBIT-1A AND VBIT-1C must be declared inoperable

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

057AA2.06 - Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: AC instrument bus alarms for the inverter and alternate power source.

0620402017 - Respond to inverter trouble and failure alarms

SRO Analysis - Question requires TS bases knowledge to determine operability.

Reasons:

NNI-X is powered from VBDP-1 & 5. ICS is powered from VBDP-2 & 4. The Inverter C Trouble alarm is due to the loss of DC input to the inverter. With the 4 KV ES Bus A Dead alarm in then all power is lost to VBIT-1C which feeds VBDP-5 & 9. Power is lost to VBDP-1 & 2 (RX MCC powered) due to the LOOP.

- A. Plausible since ICS has lost one power supply (VBDP-2) due to the LOOP. The ICS NNI Trouble alarm will be in but since VBDP-4 (powered from VBIT-1B) is still available the ICS Power Failure alarm will not be in. Second part of distractor is correct.
- B. Plausible since ICS has lost one power supply (VBDP-2) due to the LOOP. The ICS NNI Trouble alarm will be in but since VBDP-4 (powered from VBIT-1B) is still available the ICS Power Failure alarm will not be in. The second part of distractor is plausible since the AC power supply to BOTH inverters is lost, however inverter operability, per TS 3.8.7 Bases, only requires that the associated AC vital bus be powered by the inverter and the correct DC voltage applied from a battery to the auctioneering circuit. DC power is still available to VBIT-1A.
- C. Correct. NNI-X lost VBDP-1 due to the LOOP and lost VBDP-5 due to the LOOP and switching error on VBIT-1C. VBIT-1A remains operable because it only lost its AC supply which is not required to remain operable.
- D. Plausible since first part of distractor is correct. The second part of distractor is plausible since the AC power supply to BOTH inverters is lost, however inverter operability, per TS 3.8.7 Bases, only requires that the associated AC vital bus be powered by the inverter and the correct DC voltage applied from a battery to the auctioneering circuit. DC power is still available to VBIT-1A.



**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

OPS 4-91 Obj. 9; TS 3.8.7 Bases; OPS 5-01 Obj. 8; OPS 4-91 Figures 1 & 2;  
AR-701 EP 0176; 10CFR55.43.b.2

SRO - New

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

12. 059G2.1.25 001/OPS 5-01 OBJ 12/2-1/REV 1/C/A 3.9/4.2/03-23-11/SRO/YES/NEW

The plant was operating at 75% power when the "A" MFWP tripped.

Ten (10) minutes later expected FW temperature will be    (1)    .

Selection of the EFIC MFW isolation pump trip switches to "BOTH"    (2)     
required to maintain operability of the Main Feedwater Isolation Valves (MFIVs).  
**(reference provided)**

- A. ✓      (1)    390° F  
            (2)    is
- B.        (1)    390° F  
            (2)    is NOT
- C.        (1)    405° F  
            (2)    is
- D.        (1)    405° F  
            (2)    is NOT

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

059G2.1.25 - Ability to interpret reference materials, such as graphs, curves, tables, etc.: Main Feedwater

SRO Analysis - Requires in-depth knowledge of TS bases.

Reasons:

- A. Correct. Due to the loss of the "A" MFWP a plant runback to 50% power will occur. Using Curve 12 a FW flowrate of 2.5 E6 lbm/hr is indicated. Using Curve 13 and this flowrate a FW temperature of 390° F is indicated. The LCO Bases for TS 3.7.3, MFIVs, states that the correct position of the EFIC MFW isolation pump trip switches is required for MFIV operability. The switches must be selected to "BOTH" any time FWV-28 is open. FWV-28 receives an open signal whenever either MFWP trips.
- B. Plausible since first part of distractor is correct. Second part of distractor is also plausible since there is no mention of these switches in the TS Amendments, only the TS Bases.
- C. Plausible since this FW temperature is based on the old plant runback of 55% power. Second part of distractor is correct.
- D. Plausible since this FW temperature is based on the old plant runback of 55% power. Second part of distractor is also plausible since there is no mention of these switches in the TS Amendments, only the TS Bases.

OPS 5-01 OBJ 12; OP-103A Curves 12 & 13; TS 3.7.3 Bases; 10CFR55.43.b.2

SRO - New

Reference(s) provided: OP-103A Curves 12 & 13

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

13. 062AG2.2.36 001/OPS 5-01 OBJ 5/1-1/REV 3/C/A 3.1/4.2/07-1-11/SRO/NO/NEW

The following plant conditions exist on March 21 at 0300:

- Mode 1 with the Startup Transformer supplying the Unit buses.
- RWP-2A tagged out for shaft replacement. TS 3.7.9, Nuclear Services Seawater System, has just been entered.

At 1000 the same day, the Backup ES Transformer (BEST) is lost due to all sudden pressure relays actuating.

Which ONE of the following describes the status of SW-RW flow and the time that LCO 3.0.3 is required to be entered for the conditions above?

**(reference provided)**

- A. SW-RW flow has NOT been lost.  
1400 on March 21
- B. SW-RW flow has NOT been lost.  
1000 on March 22
- C. SW-RW flow has been lost until restored by the operator.  
1400 on March 21
- D. ✓ SW-RW flow has been lost until restored by the operator.  
1000 on March 22

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

062AG2.2.36 - Ability to analyze the effect of maintenance activities, such as degraded power source, on the status of limiting conditions for operation. (Loss of Nuclear Service Water)

0760402002 - Respond to a low SW raw water system pressure condition

SRO Only Analysis - Question requires application of generic LCO 3.0.3.

Reasons:

- A. The first part of the distractor is plausible since RWP-2B would normally start on low RW pressure. Also, plausible since the candidate may not recognize the loss of power to the unit buses and believe RWP-1 is still running. The second part of the distractor is plausible since this answer would be correct if the "B" EDG was lost instead of the BEST. Loss of the "B" EDG would require RWP-2B to be declared inoperable within 4 hours at which time LCO 3.0.3 would be entered.
- B. The first part of the distractor is plausible since RWP-2B would normally start on low RW pressure. Also, plausible since the candidate may not recognize the loss of power to the unit buses and believe RWP-1 is still running. The second part of the distractor is correct.
- C. The first part of the distractor is correct. The second part of the distractor is plausible since this answer would be correct if the "B" EDG was lost instead of the BEST. Loss of the "B" EDG would require RWP-2B to be declared inoperable within 4 hours at which time LCO 3.0.3 would be entered.
- D. Correct. All SW-RW flow will be lost due to the loss of the "B" ES 4160V bus and the unit buses. RWP-2B would normally start on low RW pressure, but the interlock with the "B" EDG output breaker defeats this low pressure start. RWP-2B will need to be manually started by the operator. Per TS 3.8.1 Condition "A", RWP-2B is required to be declared inoperable within 24 hours at which time LCO 3.0.3 would be entered.

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

OPS 5-01 OBJ 5; TS 3.8.1 Condition "B"; LCO 3.0.3; OPS 4-57 Chapter 2

SRO - New

Reference(s) provided: TS 3.8.1

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

14. 071G2.2.38 001/OPS 4-61, OBJ. 9/2-2/1190101020/MEM 3.6/4.5/03-23-11/SRO/NO/BANK

The primary plant operator stops a WDT-1B ("B" Waste Gas Decay Tank) release when WD-19-FQI (release flow monitor) fails low.

Which ONE of the following actions must be taken, if any, to re-initiate the release if the flow recorder cannot be fixed?

- A. The release may not be re-initiated until the flow monitor is repaired.
- B. ✓ The release flow rate must be estimated at least once per four hours.
- C. Grab samples must be collected and analyzed at least once per four hours.
- D. Two independent samples and an independently verified discharge valve alignment must be performed.

071G2.2.38 – Knowledge of conditions and limitations in the facility license:  
Waste Gas disposal

1190101020 - Authorize the discharge of gaseous radioactive waste

SRO Analysis - ODCM requirements are the SRO's responsibility, especially in this case since no reference will be provided.

Reasons:

- A., C. and D. The release is allowed to continue as long as the flow rate is estimated at least once per 4 hours. No other allowance is made for continuing the release.
- B. Correct. The release can continue as long as the flow rate is estimated at least once per 4 hours. NO reference is needed as an SRO should know the ODCM to this high level of detail.

OPS 4-61, Obj. 9; ODCM Table 2-3 Action 26; 10 CFR 55.43.b.1

SRO - Bank (CR3 - 2007 NRC - 071A2.02 LOIBank)

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

15. 077AG2.2.37 001/OPS 5-126 OBJ 4/1-1/REV 2/C/A 3.6/4.6/06-02-11/SRO/YES/NEW

The following conditions exist:

- CR Unit 3 is operating at 100% power.
- CR Units 1 & 2 are shutdown due to a recent fire in Unit 1's Startup Transformer.
- CR Units 4 & 5 are operating at 100% power.

Following a grid disturbance the following voltages exist:

- 230 KV Switchyard - 231 KV (verified by dispatcher)
- "A" ES 4160V bus - 4.18 KV
- "B" ES 4160V bus - 4.15 KV

Which ONE of the following actions, if any, are required IAW SP-321, Power Distribution Breaker Alignment and Power Availability Verification?  
**(reference provided)**

- A. NO action is required since all voltages are above their required minimum values.
- B. Recalibrate the affected ES bus voltage meters since the 230 KV Switchyard voltage is above its required minimum value.
- C. ✓ Declare BOTH AC electrical power distribution subsystems inoperable IAW TS 3.8.9, Distribution Systems - Operating, and immediately enter LCO 3.0.3.
- D. Declare ONLY ONE AC electrical power distribution subsystem inoperable IAW TS 3.8.9, Distribution Systems - Operating, and restore to operable status within 8 hours.



**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

077AG2.2.37 - Ability to determine operability and/or availability of safety related equipment: Generator voltage and electric grid disturbances

SRO Analysis - Required to assess plant conditions and utilize information contained in a surveillance procedure to determine operability status of plant equipment. Also requires application of generic LCO 3.0.3.

Reasons:

- A. Plausible since this answer would be correct if three CR 230 KV units were operating.
- B. Plausible since this answer would be correct if two CR 230 KV units were operating.
- C. Correct. With only one CR 230 KV unit operating (Unit 4), SP-321 Enclosure 7 requires a minimum Switchyard voltage of 232 KV and minimum ES 4160V bus voltages of 4.2 KV. Both the Switchyard and the ES bus voltages are below these minimum required values and must be declared inoperable IAW SP-321 Enclosure 1. TS 3.8.9 Condition 'E' requires entry into LCO 3.0.3 immediately for both AC electrical power distribution subsystems being declared inoperable.
- B. Plausible since this answer would be correct if two CR 230 KV units were operating.

OPS 5-126 OBJ 4; AP-730 Step 3.10; SP-321; TS 3.8.9

SRO - New

Reference(s) provided: SP-321 Sections 3.0, 5.0 & Enclosure 7

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

16. BW/A05AG2.2.12 001/OPS 5-01 OBJ 12/1-2/REV 3/C/A 3.7/4.1/04-20-11/SRO/NO/NEW

The plant is in Mode 1 with the ES Actuated Fast Start of the "A" EDG being conducted IAW SP-354A, Monthly Functional Test of the Emergency Diesel Generator EDG-1A.

When the RO simulates the ES signal, by selecting the ES A "HPI AUTO TEST - GRP 2" switch to the "TEST" position, the "A" EDG is required to start and reach rated voltage and frequency within 9.5 seconds as indicated by illumination of the \_\_\_(1)\_\_\_ light on the MCB.

Per TS Bases for the large break LOCA analysis this ensures LPI flow will be delivered to the core within \_\_\_(2)\_\_\_ seconds following actuation of the ES signal coincident *with* a loss of off-site power.

- A.       (1)    "RUN"  
          (2)    35
- B.       (1)    "RUN"  
          (2)    20
- C. ✓      (1)    "READY"  
          (2)    35
- D.       (1)    "READY"  
          (2)    20

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

BW/A05AG2.2.12 - Knowledge of surveillance procedures. (Emergency diesel actuation)

1190201001 - Review the performance requirements of surveillance performance testing activities

SRO Only Analysis - Requires detailed knowledge of TS Bases for Emergency Core Cooling Systems.

Reasons:

- A. The first part of the distractor is plausible since this indication would be received if the diesel output breaker closed. During performance of this SP, the diesel output breaker will remain open. The second part of the distractor is correct.
- B. The first part of the distractor is plausible since this indication would be received if the diesel output breaker closed. During performance of this SP, the diesel output breaker will remain open. The second part of the distractor is plausible since this is the time discussed in TS 3.5.2 Bases that it would take for RCS pressure to lower to less than 200 psia during a large break LOCA at which time LPI could be capable of injecting water into the RCS, but 35 seconds is the credited time for LPI per the large break LOCA analysis.
- C. Correct. The READY light will illuminate when the EDG reaches normal speed and voltage. Per the large break LOCA analysis, LPI is credited 35 seconds following actuation of the ES signal. This time assumes a LOOP and time delays in startup and loading of the EDG.
- D. The first part of the distractor is correct. The second part of the distractor is plausible since this is the time discussed in TS 3.5.2 Bases that it would take for RCS pressure to lower to less than 200 psia during a large break LOCA at which time LPI could be capable of injecting water into the RCS, but 35 seconds is the credited time for LPI per the large break LOCA analysis.

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

OPS 5-01 OBJ 12; OPS 4-06 OBJ 1-3; OPS 4-06 Section 1-4.0.E.9; TS 3.5.2  
Bases

SRO - New

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

17. BW/E05EA2.1 001/OPS 4-14 OBJ. 5/1-1/REV 1/C/A 3.0/4.2/06-29-11/SRO/NO/BANK

A Symptom Scan is being performed three minutes and 30 seconds after a reactor trip from 100% power. The conditions below existed following the reactor trip.

Time post-trip	RCS Tave
00:30	558° F
01:00	548° F
01:30	544° F
02:00	542° F
02:30	541° F
03:00	541° F
03:30 (time now)	541° F

Which ONE of the following describes a failure/malfunction that would cause the above plant conditions and which EOP will be used for mitigation following completion of the Symptom Scan?

- A. TBVs have failed open; enter EOP-05, Excessive Heat Transfer.
- B. TBVs have failed open; remain in EOP-02, Vital System Status Verification.
- C. ✓ The correct TBV bias was *not* applied following the reactor trip; remain in EOP-02, Vital System Status Verification.
- D. The correct TBV bias was *not* applied following the reactor trip; enter EOP-05, Excessive Heat Transfer.

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

BW/E05EA2.1 - Ability to determine and interpret the following as they apply to Excessive Heat Transfer: Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

1150501001 - Direct the operating shift during an emergency event

SRO Analysis - Requires assessing plant conditions and selecting the correct procedure. In this case the SRO must decide NOT to enter EOP-05 even though the classic symptom for entry into this EOP did initially exist.

Reasons:

AI-505 states that EOP-05 should be entered if RCS cooldown rate is  $>$  TS limits. Temperature change of  $> 2^{\circ}$  F per minute exceeds the TS limit. Prior to the symptom scan EHT did occur. However, per the stem, the Symptom Scan is being performed after Tave and OTSG pressure have stabilized. Entry into EOP-05 is not required at this time.

- A. Plausible since TBVs failing open will cause Tave and OTSG pressure to lower. However, if the TBVs had failed open, and remain open, then OTSG pressure and RCS temperature would have continued to lower and EOP-05 would be entered.
- B. Plausible since TBVs failing open will cause Tave and OTSG pressure to lower. However, if the TBVs had failed open, and remain open, then OTSG pressure and RCS temperature would have continued to lower. Second part of distractor is plausible since remaining in EOP-02 is the correct action for the given conditions.
- C. Correct. At 100% power a 50# bias is applied to the TBVs (935#). Following a reactor trip a 125# bias should be applied. Since the OTSGs steadied out at  $541^{\circ}$  F ( $T_{sat}$  for 935#) one should be able to determine that the wrong bias is now applied. Also, now that the plant is stable, even though at a lower Tave than expected, EOP-05 entry would not be correct.
- D. Plausible since first part of distractor is correct. Since the Symptom Scan is being performed when RCS temperature has stabilized EOP-05 should not be entered.

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

OPS 4-14 Obj. 5; OPS 4-14 Section 4.0.G.5.e; OPS 5-94 Section 2.0.1; AI-505  
Step 4.1.2.5.b; 10CFR55.43.b.5

SRO - Bank

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

18. BW/E08EG2.4.18 001/OPS 5-95 OBJ 1/1-2/REV 2/C/A 3.3/4.0/06-29-11/SRO/NO/NEW

The following plant conditions exist:

- A LOCA has occurred.
- ICC Region 3 was previously entered.
- OTSG heat transfer has now been restored and saturated RCS conditions exist.

As the Procedure Director you will transition from EOP-07, Inadequate Core Cooling, to (1) .

IAW the EOP Cross-Step document the PORV must NOT be used for depressurization once adequate SCM is restored because (2) .

- A. (1) EOP-08A, LOCA Cooldown
- (2) the risk of losing additional RCS inventory has been determined to be unacceptable if Region 3 has been previously entered due to documented PORV failures in the industry
- B. ✓ (1) EOP-08A, LOCA Cooldown
- (2) gas bubbles would form in the RCS loops faster than they could be removed resulting in non-condensable gases collecting in the hot legs and blocking natural circulation
- C. (1) EOP-08B, HPI Cooldown
- (2) the risk of losing additional RCS inventory has been determined to be unacceptable if Region 3 has been previously entered due to documented PORV failures in the industry
- D. (1) EOP-08B, HPI Cooldown
- (2) gas bubbles would form in the RCS loops faster than they could be removed resulting in non-condensable gases collecting in the hot legs and blocking natural circulation



**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

BW/EO8EG2.4.18 - Knowledge of the specific bases for EOPs: LOCA Cooldown / Depressurization

SRO Analysis - Requires assessing plant conditions and directing EOP procedure transitions. Also requires knowledge of the bases for specific Caution steps.

Reasons:

- A. The first part of the distractor is correct. The second part of the distractor is plausible since there has been documented PORV failures in the industry, but hot leg voiding is the concern.
- B. Correct. Per EOP-07, Steps 3.35 and 3.39, the transition to EOP-08A is required. Per the EOP Cross-Step document use of the PORV, after the plant has entered Region 3, is not allowed because gas bubbles could form in the RCS loops faster than they could be removed by the hot leg HPVs. As a result, non-condensable gases would collect in the hog legs and block natural circulation.
- C. The first part of the distractor is plausible since this would be the procedure to transfer to if OTSG heat transfer did not exist. The second part of the distractor is plausible since there has been documented PORV failures in the industry, but hot leg voiding is the concern.
- D. The first part of the distractor is plausible since this would be the procedure to transfer to if OTSG heat transfer did not exist. The second part of the distractor is correct.

OPS 5-95 Obj. 1; EOP-07 Steps 3.35 & 3.39; EOP-08A Caution at Step 3.27; EOP-08A Cross-Step Document; 10CFR55.43.b.5

SRO - New

Reference(s) provided: None

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

19. G2.1.15 001/OPS 5-38 OBJ 20/GENERIC/REV 2/MEM 2.7/3.4/06-29-11/SRO/NO/BANK

During a plant startup the Supt-Environmental and Chemistry approaches the CRS about issuing a Standing Instruction concerning FW chemistry.

Which ONE of the following identifies an administrative requirement for issuance of a Standing Instruction IAW OPS-NGGC-1000, Conduct of Operations?

Inform the Supt-Environmental and Chemistry that:

- A. a procedure change will be required to implement the guidance.
- B. he has the authority to prepare and approve the Standing Instruction.
- C. ✓ he must submit a request to the Operations Department and the SM or designee can approve the Standing Instruction.
- D. he must submit a request to the Operations Department as ONLY the MSO or MO can approve the Standing Instruction.

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

G2.1.15 - Knowledge of administrative requirements for temporary management directives, such as standing orders, night orders, Operations memos, etc.

1190101027 - Implement and audit short term instructions

SRO Only Analysis - Requires detailed knowledge of Standing Instruction preparation and approval.

Reasons:

- A. Plausible since OPS-NGGC-1000 states that Standing Instructions shall not cause departure nor deviation from procedures, and will not be used in lieu of a procedure, but nothing in the stem suggests this to be the case.
- B. Plausible since other organizations can request Standing Instructions, but only the SM, or designee, has the authority to approve Standing Instructions.
- C. Correct. IAW OPS-NGGC-1000, the SM, or designee, shall be responsible for all Standing Instruction preparations, approval, cancellations, and ensuring any site specific Standing Instruction database in use is correct.
- D. Plausible since the MSO is required to perform a quarterly review of the Standing Instructions IAW OPS-NGGC-1000.

OPS 5-38 OBJ 20; OPS-NGGC-1000 Section 9.17.5

SRO - Bank (ANO 2009)

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

20. G2.1.31 001/OPS 4-60 OBJ 10/GENERIC/REV 1/MEM 4.6/4.3/5-23-11/SRO/NO/NEW

TS 3.4.11, Low Temperature Overpressure Protection (LTOP) System, requires the PORV to be OPERABLE with a lift setpoint  $\leq 454$  psig when in Mode 4 with RCS temperature  $\leq 264^\circ$  F.

Which ONE of the following describes the basis IAW TS 3.4.11 for selecting the PORV to its "LOW" setpoint and identifies the location where this would be done?

The PORV is selected to "LOW" using a switch located \_\_\_(1)\_\_\_ to prevent exceeding LTOP limits due to a(an) \_\_\_(2)\_\_\_.

- A. (1) in NNI Cabinet #3  
(2) inadvertent CFT discharge
- B. (1) on the MCB (ICS Section)  
(2) inadvertent CFT discharge
- C. ✓ (1) in NNI Cabinet #3  
(2) stuck open makeup control valve with one MUP running
- D. (1) on the MCB (ICS Section)  
(2) stuck open makeup control valve with one MUP running

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

G2.1.31 - Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.

0020102005 - Verify that the PORV is operable in the low temperature over-pressure protection mode.

SRO Only Analysis - Requires in-depth knowledge of TS bases.

Reasons:

- A. The first part of the distractor is correct. The second part of the distractor is plausible since an inadvertent CFT discharge could cause RCS pressure to exceed the LTOP limits within 10 minutes with no operator action; however, this concern is addressed by isolating the CFTs during the plant shutdown not by selecting the PORV to its reduced lift setting. Selecting the PORV to its reduced lift setting provides protection against overpressure transients *other than HPI actuation and CFT discharge*.
- B. The first part of the distractor is plausible since this is the location for most PORV controls and indications. The second part of the distractor is plausible since an inadvertent CFT discharge could cause RCS pressure to exceed the LTOP limits within 10 minutes with no operator action; however, this concern is addressed by isolating the CFTs during the plant shutdown not by selecting the PORV to its reduced lift setting. Selecting the PORV to its reduced lift setting provides protection against overpressure transients *other than HPI actuation and CFT discharge*.
- C. Correct. The switch for selecting the PORV to its low range setting is located in NNI Cabinet #3. The required PORV capacity at the low setpoint (340.5 gpm) is based on a limiting transient of a stuck full open makeup control valve with one makeup pump running. With only one MUP injecting water into the RCS, the PORV will prevent LTOP limits from being exceeded.
- D. The first part of the distractor is plausible since this is the location for most PORV controls and indications. The second part of the distractor is correct.

OPS 4-60 OBJ 10; OPS 4-60 Chapter 2; OP-209 Step 4.2.8; TS 3.4.11 Bases

SRO - New

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

21. G2.2.19 001/OPS 5-89 OBJ 20/GENERIC/FLEET/MEM 2.3/3.4/03-23-11/SRO/NO/NEW  
IAW WCP-NGGC-0300, Work Request Initiation, Screening, Prioritization and Classification, an approved work order package (1) required for emergency (Priority 1) maintenance prior to performing work and authorization to begin the work must be approved by the (2) .
- A.       (1) is  
          (2) Shift Manager
- B. ✓      (1) is NOT  
          (2) Shift Manager
- C.       (1) is  
          (2) Station Duty Manager
- D.       (1) is NOT  
          (2) Station Duty Manager

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

G2.2.19 - Knowledge of maintenance work order requirements.

SRO Analysis - Requires knowledge of work controls procedures and administrative responsibilities for Priority 1 (emergency) repairs. SRO objective and function only.

Reasons:

- A. First part of distractor plausible since all other maintenance activities require a work order prior to performing work. Second part of distractor is correct.
- B. Correct. For maintenance identified as Priority 1 (or emergency) work can start prior to a work order being generated and planned. Per WCP-NGGC-0300 the Shift Manager must authorize maintenance to begin.
- C. First part of distractor plausible since all other maintenance activities require a work order prior to performing work. Second part of distractor plausible since the SM will notify the SDM to coordinate the appropriate resources and direct the immediate implementation of actions to correct the condition, however the SM must give authorization prior to activities starting.
- D. First part of distractor is correct. Second part of distractor plausible since the SM will notify the SDM to coordinate the appropriate resources and direct the immediate implementation of actions to correct the condition, however the SM must give authorization prior to activities starting.

OPS 5-89 OBJ 20; OPS 5-89 Section 2.0.A; NOD-NGGC-0002 Step 4.3;  
WCP-NGGC-0300 Section 9.2.9 & Attachment 4, Page 1; 10CFR55.43.b.5

SRO - New

Reference(s) provided: None

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

22. G2.2.7 001/OPS 5-104 OBJ 15/GENERIC/REV 4/MEM 2.9/3.6/06-29-11/SRO/NO/NEW  
LAW OPS-NGGC-1315, Conduct of Infrequently Performed Tests or Evolutions, which ONE of the following positions designates the individual responsible for management oversight of Infrequently Performed Tests or Evolutions (IPTE Manager)?

- A. Site Vice President
- B. ✓ Plant General Manager
- C. Station Duty Manager
- D. Human Performance Program Manager

G2.2.7 - Knowledge of the process for conducting special or infrequent tests.

SRO Analysis - Requires in-depth knowledge of IPTE administrative requirements above that required of an RO. At CR3 this is a senior plant management function.

Reasons:

- B. Correct. Per Attachment 2, Step 2.0, the PGM is required to make this determination.
- A., C., & D. Plausible since this approval is at the senior management level.

OPS 5-104 OBJ 15; OPS 5-104 Section 1.0.D.5; OPS-NGGC-1315 Steps 3.0.2, 4.0.5, 9.3.1 and Attachment 1; 10CFR55.43.b.3

SRO - New

Reference(s) provided: None



## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

23. G2.3.4 001/OPS 5-34, OBJ. 2/GENERIC/REV 2/MEM 3.2/3.7/03-23-11/SRO/NO/MOD

The following plant conditions exist:

- A General Emergency has been declared.
- An operator must be dispatched to the Aux Building to protect valuable property.
- The operator has received 1000 mrem TEDE this year but has received NO dose during this event.

IAW EM-202, Duties of the Emergency Coordinator, what is the *maximum* dose the operator is allowed to receive for this entry?

- A. 9 rem
- B. ✓ 10 rem
- C. 24 rem
- D. 25 rem

**QUESTIONS REPORT**  
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G2.3.4 - Knowledge of radiation exposure limits under normal or emergency conditions.

1150101001 - Act as Emergency Coordinator

SRO Analysis - Requires in-depth knowledge of EM-202, Duties of the Emergency Coordinator and/or EM-104, Operation of the OSC.

Reasons:

- A. Plausible since this would be the 10 rem emergency limit (described in B below) with the operator's 1 rem YTD dose subtracted.
- B. Correct. 10 rem is the limit for preventing serious injury and protecting valuable property. The limit is in addition to any dose already received for the year.
- C. Plausible since this would be the 25 rem emergency limit (described in D below) with the operator's 1 rem YTD dose subtracted.
- D. Plausible since during declared emergencies emergency workers are allowed to receive up to 25 rem TEDE for the duration of the emergency regardless of normal exposure to date for the year to perform lifesaving actions or to perform actions to protect large populations.

OPS 5-34, Obj. 2; EM-104 Section 3.3.1; EM-202 Enclosure 7; 10CFR55.43.b.4

SRO - Modified [G2.3.4 LOIBank (NRC 2007 - CR)]

Reference(s) provided: None

## QUESTIONS REPORT

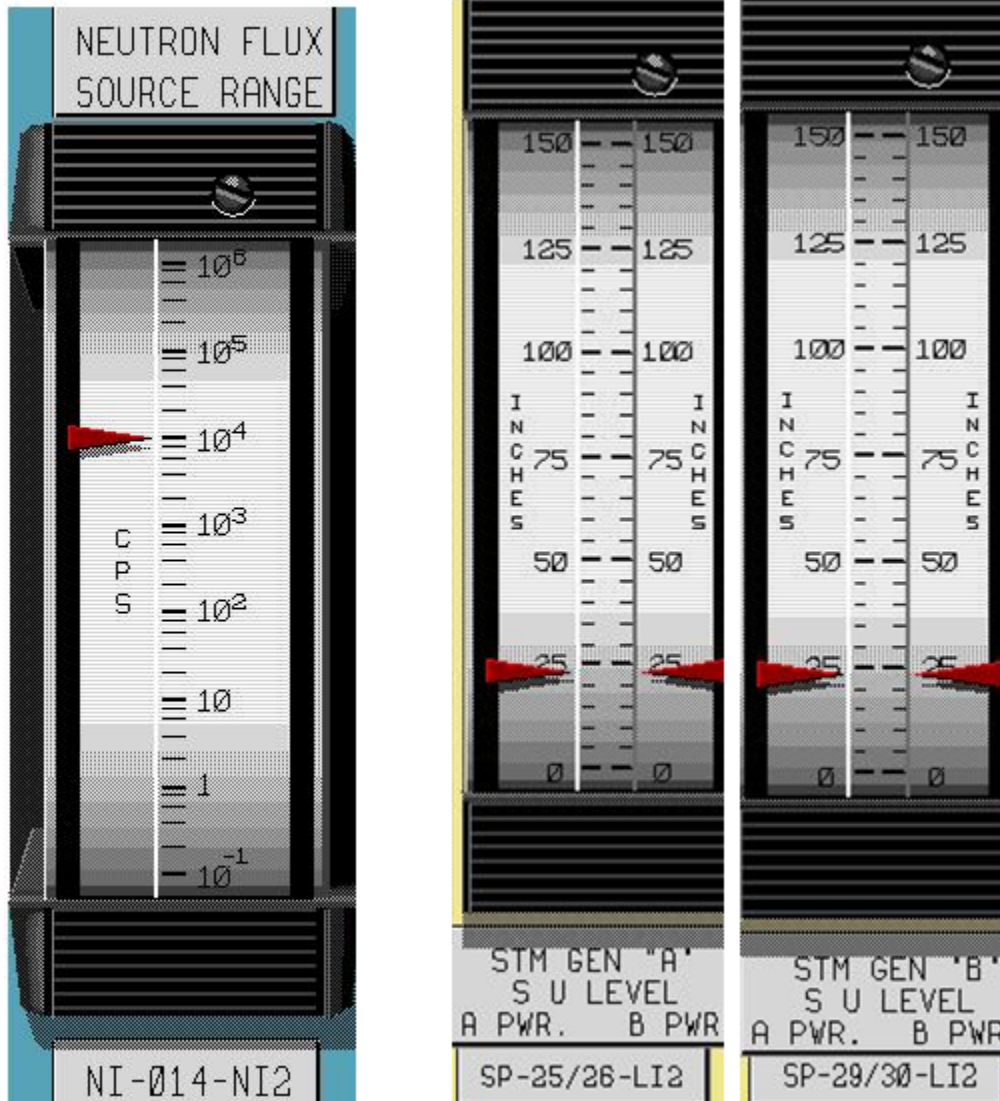
for NRC 2011 SRO EXAM BANK REV 8

24. G2.4.34 001/OPS 5-31 OBJ 7/GENERIC/REV 1/C/A 4.2/4.1/03-23-11/SRO/NO/NEW

The following plant conditions exist:

- AP-990, Shutdown from Outside the Control Room, is in progress and transfer to the Remote Shutdown Panel (RSP) is complete.
- ALL AP-990 required actions were completed in the MCR prior to the evacuation.

RSP Indications:



**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

24. G2.4.34 001/OPS 5-31 OBJ 7/GENERIC/REV 1/C/A 4.2/4.1/03-23-11/SRO/NO/NEW

Based on the RSP indications given, which ONE of the following actions will be directed by the CRS, if any?

- A. Open all CRD breakers locally to shutdown the reactor ONLY.
- B. ✓ Take manual control of EFW to feed BOTH OTSGs to enhance natural circulation ONLY.
- C. Open all CRD breakers locally to shutdown the reactor AND take manual control of EFW to feed BOTH OTSGs to enhance natural circulation.
- D. NO actions are required for the indications given. The Rx is shutdown and BOTH OTSGs are at their required levels.

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

G2.4.34 - Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.

1150501001 - Direct the operating shift during an emergency event

SRO Analysis - Required to assess plant conditions and utilize information from followup steps within an abnormal procedure (AP-990) to determine that the Rx is shutdown and to ensure adequate OTSG inventory exists to support natural circulation.

Reasons:

- A. Plausible since this action would be taken if the reactor was not shutdown. The RO would normally use NI indications on the MCB to verify that the Rx is shutdown (< 5% on PRNIs which is low on the scale), but the MCR has been evacuated. IAW AP-990 Step 3.18, the only requirement to verify that the Rx is shutdown is to verify that NI-14 is not off-scale high.
- B. Correct. IAW AP-990 Step 3.18 since NI-14 is on-scale, the Rx is shutdown. With RCPs secured, OTSGs are required to be at Nat Circ levels (~ 68%). IAW AP-990 Step 3.37, the RO will need to take manual control of EFW and raise OTSG levels using Rule 3, EFW/AFW Control.
- C. The first part of the distractor is plausible since this action would be taken if the reactor was not shutdown. The RO would normally use NI indications on the MCB to verify that the Rx is shutdown (< 5% on PRNIs which is low on the scale), but the MCR has been evacuated. IAW AP-990 Step 3.18, the only requirement to verify that the Rx is shutdown is to verify that NI-14 is not off-scale high. The second part of the distractor is plausible since this would be the required level for the OTSGs if RCPs were still running, but the stem states that all required AP-990 actions were completed prior to the MCR evacuation which includes stopping all RCPs. OTSGs are required to be at Nat Circ levels (~ 68%) and IAW AP-990 Step 3.37 the RO will need to take manual control of EFW and raise OTSG levels using Rule 3, EFW/AFW Control.
- D. Plausible since this would be the required level for the OTSGs if RCPs were still running, but the stem states that all required AP-990 actions were completed prior to the MCR evacuation which includes stopping all RCPs. OTSGs are required to be at Nat Circ levels (~ 68%) and IAW AP-990 Step 3.37 the RO will need to take manual control of EFW and raise OTSG levels using Rule 3, EFW/AFW Control.

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

OPS 5-31 OBJ 7; AP-990 Steps 3.18 and 3.37; Rule 3

SRO - New

Reference(s) provided: None

## QUESTIONS REPORT

for NRC 2011 SRO EXAM BANK REV 8

25. G2.4.8 001/OPS 5-14 OBJ 3/GENERIC/1190402001/MEM 3.8/4.5/10-11-10/SRO/NO/BANK

IAW AI-505, Conduct of Operations During Abnormal and Emergency Events, if an Abnormal Procedure (AP) Entry Condition is met during the performance of an Emergency Operating Procedure (EOP) the \_\_\_\_ (1) \_\_\_\_ will direct \_\_\_\_ (2) \_\_\_\_ .

- A. ✓
  - (1) Procedure Director
  - (2) concurrent performance of the AP by an available operator
- B.
  - (1) Shift Manager
  - (2) concurrent performance of the AP by an available operator
- C.
  - (1) Procedure Director
  - (2) performance of the AP only after major actions of the controlling EOP have been completed
- D.
  - (1) Shift Manager
  - (2) performance of the AP only after major actions of the controlling EOP have been completed

**QUESTIONS REPORT**  
for NRC 2011 SRO EXAM BANK REV 8

G2.4.8 - Knowledge of how abnormal operating procedures are used in conjunction with EOPs.

1190402001 - Comply with requirements during abnormal and emergency events

SRO Analysis - Requires knowledge of administrative procedures that specify hierarchy, implementation, and/or coordination of plant normal, abnormal and emergency procedures.

Reasons:

- A. Correct. AI-505 states, among other requirements, that the Procedure Director determines operator availability to perform the APs, and directs the CONTROL BOARD OPERATORS to concurrently perform the actions of APs while an EOP is in progress.
- B. Plausible in that the Shift Manager has overall "command and control" of the crew and may direct the Procedure Director to perform an applicable AP but based on AI-505, the Procedure Director is responsible for providing the direction to the available operator to perform the AP concurrently with the controlling EOP.
- C. Plausible since the Procedure Director determines operator availability to perform the APs, and directs the CONTROL BOARD OPERATOR to concurrently perform the actions of APs while an EOP is in progress. However, there is no requirement to wait on completion of any major EOP actions before performing applicable APs.
- D. Plausible in that the Shift Manager has overall "command and control" of the crew and may direct the Procedure Director to perform an applicable AP but based on AI-505, the Procedure Director is responsible for providing the direction to the available operator to perform the AP concurrently with the controlling EOP. There is no requirement to wait on completion of any major EOP actions before performing applicable APs.

OPS 5-14, Obj. 3; AI-505 Step 4.1.2.4; 10CFR55.43.b.5

SRO - Bank (NRC 2009 - CR)

Reference(s) provided: None