

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

1. 002A2.02 001/2/2//C/A 4.2/4.4/NEW/S/CR030901/OPS 5-114 OBJ 1

The following plant conditions exist:

- The plant is operating at 90% RTP.
- RCS pressure is lowering SLOWLY.
- RCDT parameters are stable.
- RB temperature, pressure and sump level are normal.
- RM-A2, RM-A6, and RM-A12 are all normal.
- AP-520, Loss of RCS Coolant or Pressure, is in progress.
- Actions for leak isolation are complete.

Based on the above conditions, which ONE of the following could be the cause of lowering RCS pressure, and IAW AP-520, when would a manual reactor trip be required?

A. ✓ RCV-14, PZR Spray valve, is open

If RCS pressure continues to lower after RCP-1B is stopped.

B. A failed number 1 seal on RCP-1B

If RCS pressure continues to lower after RCP-1B is stopped.

C. RCV-14, PZR Spray valve, is open

If RCS pressure continues to lower after selecting RCV-13, PZR Spray Block valve, to close.

D. A failed number 1 seal on RCP-1B

If RCS pressure continues to lower after selecting MUV-259, RCP-1B controlled bleed off valve, to close.

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002A2.02 - Ability to (a) predict the impacts of the following malfunctions or operations on the RCS; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations:
Loss of coolant pressure

SRO Only Analysis: Requires knowledge of mitigation strategy which takes place in the middle of an AP which is beyond simple EOP/AP Entry Conditions and Immediate Actions.

Reasons:

- A. Correct. Based on RB conditions and process radiation monitor status there is no evidence of abnormal RCS leakage (tube leakage or RB atmosphere). The only other possibility is a leaking or stuck open PZR spray valve or seal failures. AP-520 directs a power reduction, if required, to < 72% power in order to stop RCP-1B. After RCP-1B is stopped the guidance would be to trip the reactor if RCS pressure continues to lower with RCP-1B stopped.
- B. Plausible since the leakage resulting from a number 1 seal failure would be directed to closed systems. Also plausible since there would be some expectation for stopping a reactor coolant pump with a failed number one seal. OP-302 directs RCP shutdown based on seal degradation.
- C. Plausible based on RB conditions and process radiation monitor status because there is no evidence of abnormal RCS leakage (tube leakage or RB atmosphere). The only other possibility is a leaking or stuck open PZR spray valve or seal failures. Also plausible based on a need to shut the plant down or manually trip the reactor before receiving an automatic trip on low RCS pressure. In addition AP-520, Step 3.6, directs closing RCV-14.
- D. Plausible since the leakage resulting from a number 1 seal failure would be directed to closed systems. Closing the CBO valve may reduce the leakage but is not done because of seal staging concerns.

OPS-5-114, Obj. 1; AP-520 Steps 3.6, 3.7 & 3.8; OP-302 Steps 3.2.23 & 3.2.24;
10CFR55.43(b)(5)

SRO - New

Reference(s) provided: None

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2. 005A2.01 001/2/1//C/A 2.7/2.9/NEW/S/CR030901/OPS 5-114 OBJ 1

The following plant conditions exist:

- The plant is in Mode 5 for repairs.
- "A" DHR train is in operation with stable flow.
- DH Purification is in service.
- RCS level is approximately 132 feet and slowly lowering.
- RB sump level is rising.

Which ONE of the following choices completes the statement below?

The procedure mitigation strategy for these conditions would require entering _____ (1) _____ and continuously monitoring _____ (2) _____ in order to stop "A" DHP before pump damage could occur.

(Do not assume the use of "prompt and prudent" actions.)

- A. (1) AP-520, Loss of RCS Coolant or Pressure
(2) RCS inventory
- B. (1) AP-404, Loss of Decay Heat Removal
(2) RCS inventory
- C. ✓ (1) AP-520, Loss of RCS Coolant or Pressure
(2) for DHP cavitation
- D. (1) AP-404, Loss of Decay Heat Removal
(2) for DHP cavitation

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005A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the Decay Heat System, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Failure modes for pressure, flow, pump motor amps, motor temperature, and tank level instrumentation

SRO Only Analysis: Determination of mitigation strategy and multiple transition steps throughout the AP which requires knowledge beyond simple EOP/AP Entry Conditions and Immediate Actions.

Reasons:

- A. Plausible since the entry conditions for AP-520 are met based on the given conditions. Also, based on the reduced RCS level and significant leakage, the running DHR pump suction will be affected at some RCS level, and it would be plausible to think that RCS inventory would be a parameter continuously monitored to trip the running DHR pump in AP-520.
- B. Plausible with the given conditions (reduced RCS level with leakage), however, entry conditions for AP-404 are not met until the DHR train is lost. Depending on the actual RCS leakrate, the running DHR pump could be stopped using "prompt and prudent" action. For this reason the given conditions are based on a slow moving transient that does not require immediate stopping of the DHR train and the statement "Do not assume prompt and prudent action".
- C. Correct. AP-520 entry conditions are met based on the given conditions. DHR operating with stable flow. AP-520 takes into consideration the affect of the loss of RCS inventory on the running DHR train by continuously monitoring for "signs of cavitation" with guidance for stopping the DHR pump and concurrently performing AP-404.
- D. Plausible with the given conditions (reduced RCS level with leakage), however, entry conditions for AP-404 are not met until the DHR train is lost. Depending on the actual RCS leakrate, the running DHR pump could be stopped using "prompt and prudent" action. For this reason the given conditions are based on a slow moving transient that does not require immediate stopping of the DHR train and the statement "Do not assume prompt and prudent action". Based on the given conditions cavitation will ultimately occur if no operator action is taken.

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OPS-5-114, Obj. 1; AP-520 Steps 1.0, 3.4, 3.12, 3.73 and 3.78; AP-404 Steps 1.0, 3.3 and 3.8; 10CFR55.43(b)(5)

SRO - New

Reference(s) provided: None

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3. 012G2.2.12 001/2/1//MEM 3.7/4.1/NEW/S/CR030901/OPS 5-01 OBJ 2

The following plant conditions exist:

- Reactor power is 100% RTP.
- SP-110A, Reactor Protection System Functional Test, is in progress.
- Maintenance is preparing to test the RB pressure reactor trip setpoints.

Which ONE of the following describes a procedural requirement while performing this test and the reason for the action?

Establish a:

- A. dedicated valve operator to open pressure switch isolation valves if a transient occurs.
- B. designated valve operator to open pressure switch isolation valves if a transient occurs.
- C. ✓ dedicated valve operator to comply with ITS 3.6.3, Containment Isolation Valves, for restoration of RB Integrity.
- D. designated valve operator to comply with ITS 3.6.3, Containment Isolation Valves, for restoration of RB Integrity.

012G2.2.12 – Knowledge of surveillance procedures.

SRO Only Analysis: Knowledge of ITS requirements, details that cause RB integrity to be affected, and knowledge of SP-110A requirements for a dedicated vs a designated valve operator required to answer question.

Reasons:

- A. Plausible since basic understanding includes knowledge of the RB pressure switches and knowledge that testing involves alignments related to the pressure switches that may remove them from service in order to perform the test. Also, since the instruments may be removed from service it is plausible to have a contingency action for restoration in the event of a transient. This action could be performed by a designated or a dedicated operator depending on the significance of the contingency.
- B. Plausible since basic understanding includes knowledge of the RB pressure switches and knowledge that testing involves alignments related to the pressure switches that may remove them from service in order to perform

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the test. Also, since the instruments may be removed from service it is plausible to have a contingency action for restoration in the event of a transient. This action could be performed by a designated or a dedicated operator depending on the significance of the contingency.

- C. Correct. Performing the RB pressure switch test involves repositioning containment isolation valves which will breach the affected RB penetration while performing the test. If the unit is in Mode 1-4 this will impact TS 3.6.3, Containment Isolation Valves. The spec allows for penetrations to be intermittently unisolated under administrative controls. In this case the administrative controls are established by SP-110A which requires a "dedicated valve operator" (defined in AI-500, Conduct of Operations Department Organization and Administration, App 7, Control of Equipment and Systems). Knowledge of ITS requirements, details that cause RB integrity to be affected, and knowledge of SP-110A requirements for a dedicated vs a designated valve operator is necessary to pick this choice over other choices.
- D. Plausible since performing the RB pressure switch test involves repositioning containment isolation valves which will breach the affected RB penetration while performing the test. If the unit is in Mode 1-4 this will impact ITS 3.6.3, Containment Isolation Valves. The spec allows for penetrations to be intermittently unisolated under administrative controls. In this case the administrative controls are established by SP-110A which requires a "dedicated valve operator" (defined in AI-500, Conduct of Operations Department Organization and Administration, App 7, Control of Equipment and Systems). Understanding of the SP requirement and the difference between a designated valve operator (timely but not immediate response) and a dedicated valve operator (stationed on location with communication to the control room) and knowledge of the SP requirement is needed to eliminate this choice.

OPS 5-01, Obj. 2; OPS 4-12, Obj. 6; OPS 5-38, Obj. 27; TS 3.6.3 Note 1; AI-500, Appendix 7, Section 6.0; SP-110A, Step 3.5.16; OPS 4-12 Section 1-4.0.C; 10CFR55.43(b)(2)

SRO - New

Reference(s) provided: None

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4. 014G2.1.27 001/2/2//C/A 3.9/4.0/MOD/S/CR030901/OPS 4-28 OBJ 3

The plant was at 100% power when control rod 7-4 drops fully into the core.

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

- A. "Position Select Raise/Lower" switch manipulation is required to match relative rod position to absolute rod position.

With the control rod on the bottom of the core it is *inoperable* for SDM purposes 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 7 rods will align its absolute and relative rod indications.

With the control rod on the bottom of the core it is *inoperable* for SDM purposes until it is realigned with its group and can respond to positioning signals.

- C. ✓ "Position Select Raise/Lower" switch manipulation is required to match relative rod position to absolute rod position.

With the control rod on the bottom of the core it is *operable* for SDM purposes even though it cannot respond to positioning signals.

- D. Withdrawing the dropped rod to the average height of the other group 7 rods will align its absolute and relative rod indications.

With the control rod on the bottom of the core it is *operable* for SDM purposes even though it cannot respond to positioning signals.

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014G2.1.27 - Knowledge of system purpose and /or function. (Rod Position Indication)

SRO Only Analysis: Operability determination of a dropped rod is an SRO only function.

Reasons:

The dropped rod will cause a deviation between absolute and relative rod position indication. This deviation will not be alleviated by simply withdrawing the dropped rod since a plant runback to 60% power has occurred. The Position Select Raise/Lower switch must be used to match the absolute and relative rod indications. This action is detailed in the OP for rod recovery.

- A. Plausible since the first part of the distractor is correct. The rod is operable since it has already performed its safety function by dropping fully into the core. The ability of the rod to respond to positioning signals is not a credited safety function and is not required for purposes of operability.
- B. API will be accurate but RPI will still read what it did prior to the rod drop. Plausible if applicant does not understand that the RPI will no longer indicate current position. The rod is operable since it has already performed its safety function by dropping fully into the core. The ability of the rod to respond to positioning signals is not a credited safety function and is not required for purposes of operability.
- C. Correct. The rod is operable since it has already performed its safety function by dropping fully into the core. The ability of the rod to respond to positioning signals is not a credited safety function and is not required for purposes of operability.
- D. API will be accurate but RPI will still read what it did prior to the rod drop. Plausible if applicant does not understand that the RPI will no longer indicate current position.

OPS 4-28 Obj. 3; OPS 5-01 Obj. 12; OPS 4-28 Section 1-4.0.I.4; ITS 3.1.4 and Bases; OP-502 Section 4.18; 10CFR55.43(b)(2 &6)

SRO - Modified (Oconee 2006 NRC SRO question)

Reference(s) provided: None

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6. 027AG2.4.9 001/1/1//C/A 3.8/4.2/NEW/S/CR030901/OPS 5-94 OBJ. 5

The following plant conditions exist:

- EOP-5, Excessive Heat Transfer, is in progress.
- "A" OTSG has been isolated and has blown down.
- The EHT event has been terminated.
- ES MCC 3AB is de-energized due to a bus fault.
- RCS Tave is 535° F.
- Subcooling Margin (SCM) is 60° F.

Based on these conditions which ONE of the following actions would you direct the Reactor Operators to perform and what is the reason for this action?

Maintain minimum adequate SCM using the:

- A. PZR Spray valve to prevent PTS.
- B. PZR Spray valve to minimize tube stresses.
- C. PORV to prevent PTS.
- D. ✓ PORV to minimize tube stresses.

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027AG2.4.9 - Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of DH) mitigation strategies. (PZR Pressure Control System Malfunction)

SRO Only Analysis: Requires knowledge of mitigation strategy which takes place in the middle of an EOP and knowledge of Table 4 information which is located on the last page of the procedure.

Reasons:

Loss of ES MCC 3AB removes power from the PORV Block valve and the PZR Spray valve. The PORV Block valve is a normally open MOV and will remain open after ES MCC 3AB de-energizes. The PORV is powered from a DC power supply and will remain available. With the only available OTSG dry (<12.5") then actions are taken to minimize SCM to reduce tensile tube stresses.

- A. Plausible since the PZR Spray valve is the preferred valve for this action but it is de-energized due to the loss of ES MCC 3AB.
- B. Plausible since the PZR Spray valve is the preferred valve for this action but it is de-energized due to the loss of ES MCC 3AB. Second part of distractor is correct.
- C. Plausible since first part of distractor is correct. Also plausible since RCS pressure is lowered to prevent PTS but this is not a concern until RCS temperature lowers below 400° F
- D. Correct. Since the spray valve is de-energized the PORV will be used to lower RCS pressure. With a dry OTSG tube stresses are the concern.

OPS 5-94 Obj. 5; EOP-5, Step 3.31; EOP-5 ECD Step 3.31; 10CFR55.43(b)(5)

SRO - New

Reference(s) provided: None

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7. 034A2.01 002/2/2//C/A 3.6/4.4/NEW/S/CR030901/OPS 4-29 OBJ 8

The following plant conditions exist:

- Fuel shuffling activities are in progress with the plant at 100% power.
- A leak has occurred in the pool liner and Spent Fuel Pool level is lowering.
- While attempting to place a suspended fuel assembly back into the storage racks an error occurs and the fuel assembly is dropped.
- The fuel assembly is laying horizontally across the top of the fuel rack.
- There is no apparent damage to this fuel assembly or to any other fuel assemblies.
- Spent Fuel Pool level has stabilized at 15 feet above the top of the fuel racks.
- "Aux Bldg Sump Level High" annunciator is in alarm.
- Water is seeping through the Aux Bldg entrance door on the 95' elevation.

Which ONE of the following choices completes the statements below?

The iodine removal factor used in the off-site dose calculations will (1) be met. Additionally entry is required into (2).

- A. (1) NOT
(2) AP-1080, Refueling Canal/Spent Fuel Pool Level Lowering, ONLY
- B. (1) STILL
(2) AP-1080, Refueling Canal/Spent Fuel Pool Level Lowering, ONLY
- C. ✓ (1) NOT
(2) AP-1080, Refueling Canal/Spent Fuel Pool Level Lowering, and AP-1040, Aux Building Flooding
- D. (1) STILL
(2) AP-1080, Refueling Canal/Spent Fuel Pool Level Lowering, and AP-1040, Aux Building Flooding

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034A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the Fuel Handling System; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations: Dropped fuel element

SRO Only Analysis: Requires in-depth TS bases knowledge, assumptions made in the FHA safety analysis and knowledge of off-site dose calculation inputs (iodine removal factor).

Reasons:

Normal pool level is 25'6" above the top of the fuel. If pool level lowers to 15 feet above the fuel that corresponds to approximate leakage of 115,000 gallons. Aux Bldg sump capacity is 4,190 gallons. MWST capacity is 20,000 gallons. That leaves about 91,000 gallons of water on the AB floor. One inch of water on the AB floor is about 15,000 gallons.

- A. Plausible since first part of distractor is correct and the second part is correct but not complete. With this amount of water loss AP-1040 will also need to be entered.
- B. Plausible since AP-1080 will be entered. To meet the iodine removal factor used in off-site dose calculations a minimum of 21.5 feet above the top of the fuel racks is required.
- C. Correct. To meet the iodine removal factor used in off-site dose calculations a minimum of 21.5 feet above the top of the fuel racks is required. Entry conditions for AP-1080 and AP-1040 are met.
- D. Plausible since the second part of distractor is correct. To meet the iodine removal factor used in off-site dose calculations a minimum of 21.5 feet above the top of the fuel racks is required.

OPS 4-29 Obj 8; OPS 4-29 Section 1-4.0.A; OPS 5-72 Obj 4; ITS 3.7.13 and Bases; 10CFR55.43(b)(2, 5 & 7)

SRO - New

Reference(s) provided: None

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for 2009 SRO NRC BANK Submittal 07-20-09

8. 039G2.4.20 001/2/1//C/A 3.8/4.3/NEW/S/CR030901/OPS 5-101 OBJ 4

The following plant conditions exist:

- A tube rupture has occurred in the "A" OTSG.
- The reactor has been manually tripped due to low PZR level.
- RCS Tave is 520° F with a cooldown in progress.
- Initial Dose Equivalent I-131 is 0.010 $\mu\text{ci/g}$.
- "A" OTSG level is at 50% and rising due to the tube rupture.
- "B" OTSG level is at LLL.

Which ONE of the following states the required cooldown rate and describes the applicable OTSG steaming guidance IAW EOP-06, Steam Generator Tube Rupture?

A. Emergency Cooldown Rate

Steam BOTH OTSGs equally to achieve the Emergency Cooldown Rate

B. Emergency Cooldown Rate

Preferentially steam the "B" OTSG to achieve the Emergency Cooldown Rate

C. Normal Cooldown Rate

Steam BOTH OTSGs equally to achieve the Normal Cooldown Rate

D. Normal Cooldown Rate

Preferentially steam the "B" OTSG to achieve the Normal Cooldown Rate

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039G2.4.20 – Knowledge of the operational implications of EOP warnings, cautions, and notes. (Main and Reheat Steam)

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.

The only notes/cautions related to Main/Reheat Steam are in EOP-6.

Reasons:

- A. Correct. Emergency Cooldown rate is used when OTSG level is rising due to the tube rupture and/or Initial Dose Equivalent I-131 is $>0.002 \mu\text{ci/g}$ with RCS Tave is $>500^\circ \text{F}$.
- B. Plausible since the first part of distractor is correct. 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.
- C. Plausible since second part of distractor is correct. Also plausible since the Normal Cooldown rate will be in effect as soon as RCS temperature reaches $<500^\circ \text{F}$.
- D. Plausible since the Normal Cooldown rate will be in effect as soon as RCS temperature reaches $<500^\circ \text{F}$. Preferential steaming is not used unless OTSG level is $>70\%$.

OPS 5-101 Obj 4; EOP-6 Steps 3.40 & 3.43 with Notes; 10CFR55.43(b)(2 & 5)

SRO - New

Reference(s) provided: None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

9. 056AG2.4.45 001/1/1//C/A 4.1/4.3/NEWS/CR030901/OPS 5-30 OBJ 7

The following plant conditions exist:

- The plant is in Mode 3 following a reactor trip caused by a loss of ALL offsite power.
- EOP-02, Vital System Status Verification, followup steps are in progress.
- The following annunciator windows are in alarm:

B-06-01, Makeup PP B Trip

C-01-11, RB Fan A/B/C Clg Wtr Flow Low

C-03-05, SW RW System Press Low

H-05-04, Letdown Press High

Which ONE of the following identifies the priority that the alarms above should be addressed IAW AP-770, Emergency Diesel Generator Actuation, and whether the alarms are expected or NOT expected for this failure?

- A.
 - 1. Makeup PP B Trip; NOT expected
 - 2. RB Fan A/B/C Clg Wtr Flow Low; NOT expected
- B. ✓
 - 1. Letdown Press High; Expected
 - 2. SW RW System Press Low; Expected
- C.
 - 1. Makeup PP B Trip; Expected
 - 2. RB Fan A/B/C Clg Wtr Flow Low; Expected
- D.
 - 1. Letdown Press High; Expected
 - 2. SW RW System Press Low; NOT expected

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056AG2.4.45 - Ability to prioritize and interpret the significance of each annunciator or alarm. (Loss of Offsite Power)

SRO Only Analysis: Prioritizing multiple alarms is an SRO function and the order for restoring equipment requires knowledge of procedure steps in the middle of an AP.

Reasons:

B-06-01, Makeup PP B Trip, is NOT expected. The B MUP is the "A" train ES selected MUP and is normally running. The undervoltage protection for this pump is defeated (when ES selected) and the breaker will stay closed. Following a LOOP this pump will would be expected to be running with power supplied by the "A" ES Diesel. AP-770, Step 3.22, will address this condition.

C-01-11, RB Fan A/B/C Clg Wtr Flow Low, is an expected alarm. RB fan cooling water is normally supplied by the CI system. This system is powered from the Unit buses. AP-770, Step 3.34, will address this condition.

C-03-05, SW RW System Press Low, is an expected alarm. The normal duty SW RW pump is powered by the Unit buses. With this condition, "B" EDG output breaker closed, the low pressure start for RWP-2B is defeated. AP-770, Step 3.20, will address this condition.

H-05-04, Letdown Press High, is an expected alarm. Downstream valves in this line close on a loss of power. When these valves close an upstream relief valve lifts and relieves letdown to the Aux Building. AP-770, Step 3.19, will address this condition.

- A. Plausible since first part of distractor is correct. The second part of the distractor would be correct if RB Fan cooling water was aligned to SW (alternate supply).
- B. Correct. See above discussion.
- C. Plausible since second part of distractor is correct. First part of distractor would be correct if MUP-1B was not ES selected.
- D. Plausible since the first part of distractor is correct. If student doesn't remember the interlock between breaker 3210 and RWP-2B auto-start circuit this answer would be chosen.

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OPS-5-30, Obj. 7; AP-770 Steps 3.19, 3.20, 3.22 & 3.34; 10CFR55.43(b)(5)

SRO - New

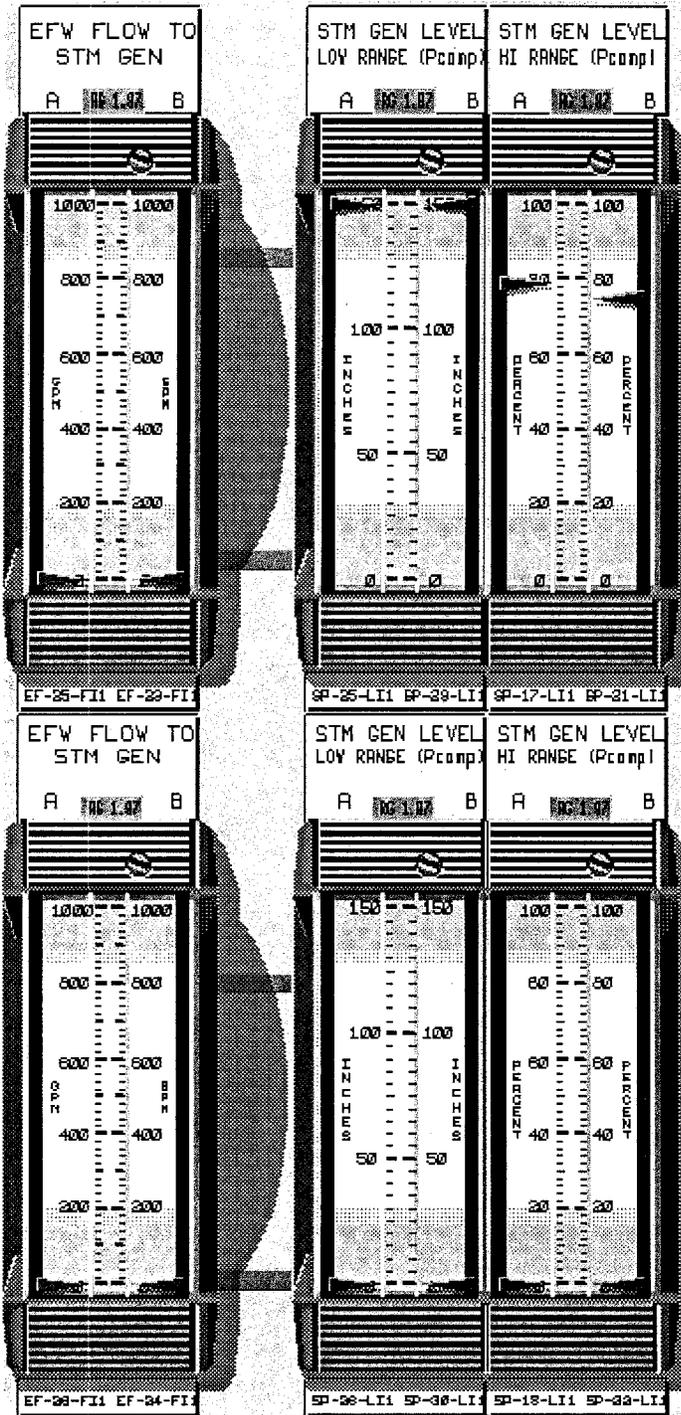
Reference(s) provided: None

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for 2009 SRO NRC BANK Submittal 07-20-09

10. 057AA2.05 001/1/1//C/A 3.5/3.8/NEW/S/CR030901/OPS 4-31 OBJ. 2 & 7

Use the picture below to answer the following question.



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10. 057AA2.05 001/1/1//C/A 3.5/3.8/NEW/S/CR030901/OPS 4-31 OBJ. 2 & 7

The following plant conditions exist:

- Reactor power is 100% RTP.
- EFP-3 is removed from service for maintenance.

Which ONE of the following choices completes the statements below?

The indications above were caused by a loss of ____ (1) ____ . With this failure present a loss of both Main Feedwater pumps causes a reactor trip. In order to establish controlled EFW flow the CRS would ensure that ____ (2) ____ .

- A. ✓
 - (1) VBDP-10
 - (2) EFP-1 is started using EOP-14, Enclosure 7, EFW Management, to establish EFW flow to "A" Train
- B.
 - (1) VBDP-11
 - (2) EFP-1 is started using EOP-14, Enclosure 7, EFW Management, to establish EFW flow to "A" Train
- C.
 - (1) VBDP-10
 - (2) EFP-2 is started using EOP-14, Enclosure 7, EFW Management, to establish EFW flow to "B" Train
- D.
 - (1) VBDP-11
 - (2) EFP-2 is started using EOP-14, Enclosure 7, EFW Management, to establish EFW flow to "B" Train

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057AA2.05 - Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: S/G pressure and level meters

SRO Only Analysis: Requires knowledge of mitigation strategy which takes place in the middle of an EOP.

Reasons:

VBDP-10 powers the "B" EFIC channel ("B" Train power supply) and VBDP-11 powers the "D" EFIC channel (also "B" Train power supply). "B" EFIC channel transmitters have indications on the MCB, RSP, individual channel cabinet and computer. "D" channel transmitters have indications only on the computer and in individual cabinets.

- A. Correct. Loss of VBDP-10 will de-energize the "B" EFIC cabinet. All "B" channel transmitters will lose power and indicate 0. Only "A" and "B" channels indicate on the MCB and RSP. Due to this loss EFP-2 will not receive a start signal and both "B" EFIC channel control valves fail full open. EFP-1 should be started since "A" EFIC channel control valves will still function.
- B. Plausible since VBDP-11 powers "B" Train transmitters but their indications are only at the local EFIC cabinets or the computer.
- C. Plausible since the first part of distractor is correct. If EFP-2 were started there would be no control of EFW flow due to the loss of the "B" EFIC channel.
- D. Plausible since VBDP-11 powers "B" Train transmitters but their indications are only at the local EFIC cabinets or the computer. If EFP-2 were started there would be no control of EFW flow due to the loss of the "B" EFIC channel.

OPS 4-31 Obj. 2 & 7; OPS 4-31 Sections 1-2.0.A.1, 1-4.0.A.4 and 1-5.0.A; EOP-14, Enclosure 7; OP-700D, Enclosure 10; 10CFR55.43(b)(5)

SRO - New

Reference(s) provided: None

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for 2009 SRO NRC BANK Submittal 07-20-09

11. 061AA2.06 001/1/2//MEM 3.2/4.1/NEW/S/CR030901/OPS 5-38 OBJ 21

The following plant conditions exist:

- A core offload is in progress.
- A failure alarm is received in the MCR for RM-G14, area radiation monitor for the Spent Fuel Storage Pool.

Which ONE of the following choices describes actions *required* IAW FP-203, Defueling and Refueling Operations, and AI-500, Conduct of Operations, Form Appendix 7-07 "SRO Checklist for Unplanned Equipment Status Changes"?

The core offload may continue if _____ (1) _____, and _____ (2) _____ MUST independently concur with the required actions using ITS, ODCM, Fire Plan, CP-365, and CP-500.

- A. ✓
 - (1) continuous Health Physics coverage is provided and an alarming dosimeter is stationed in the affected area
 - (2) a second SRO
- B.
 - (1) local surveys of the spent fuel storage area are performed using portable monitoring instrumentation at least once per 24 hours
 - (2) a second SRO
- C.
 - (1) continuous Health Physics coverage is provided and an alarming dosimeter is stationed in the affected area
 - (2) the Refueling Manager
- D.
 - (1) local surveys of the spent fuel storage area are performed using portable monitoring instrumentation at least once per 24 hours
 - (2) the Refueling Manager

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

061AA2.06 - Ability to determine and interpret the following as they apply to the Area Radiation Monitoring (ARM) System Alarms: Required actions if alarm channel is out of service.

SRO Only Analysis: Appendix 7-07 checklist is specifically performed by an SRO and verification of any action is required by an additional SRO.

Reasons:

- A. Correct. RM-G14 is required to be operable during refueling operations IAW FP-203 Defueling and Refueling Operations. The procedure allows for continuous HP coverage with an alarming dosimeter stationed in the affected area as a substitute for a required area radiation monitor. AI-500 requires that a second SRO independently verifies that the correct required actions are being performed for an unplanned equipment status change.
- B. Plausible since CP-500 has an action statement for RM-G14 being inoperable which requires local surveys to be performed on a once per 24 hour frequency while the monitor is inoperable. Also plausible since AI-500 requires that a second SRO independently verifies that the correct required actions are being performed for an unplanned equipment status change.
- C. Plausible since RM-G14 is required to be operable during refueling operations IAW FP-203 Defueling and Refueling Operations. The procedure allows for continuous HP coverage with an alarming dosimeter stationed in the affected area as a substitute for a required area radiation monitor. Also plausible since the Refueling Manager may be consulted but is not required to concur with the actions.
- D. Plausible since CP-500 has an action statement for RM-G14 being inoperable which requires local surveys to be performed on a once per 24 hour frequency while the monitor is inoperable. Also plausible since the Refueling Manager may be consulted but is not required to concur with the actions.

OPS 5-38 Obj. 21; AI-500 Appendix 7, Step 1.5; FP-203 Steps 3.2.13.1 and 3.2.13.2; CP-500, Enclosure 1; 10CFR55.43(b)(7)

SRO - New

Reference(s) provided: None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

12. 062A2.01 001/2/1/1150502012/C/A 3.4/3.9/NEW/S/CR030901/OPS 5-116 OBJ 1

Initial Plant Conditions:

- Plant startup was in progress with reactor power at 25%.
- The Offsite Power Transformer (OPT) is removed from service.
- The plant will maintain this power level until the OPT is restored.
- EFP-3 is OOS with expected return to service in 4 hours.

Current Plant Conditions:

- Annunciator window P-01-01, Startup XFMR Fault, has annunciated.
- EFP-2 experienced an overspeed trip.

Based on these conditions which ONE of the following predicts the impact on the plant and the preferred EFW / AFW source?

A. Turbine Trip ONLY

FWP-7

B. ✓ Reactor Trip

FWP-7

C. Turbine Trip ONLY

EFP-1

D. Reactor Trip

EFP-1

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for 2009 SRO NRC BANK Submittal 07-20-09

062A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the AC distribution system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Types of loads that, if de-energized, would degrade or hinder plant operation

SRO Only Analysis: Procedure transition takes place in the middle of an EOP which requires knowledge beyond simple EOP/AP entry conditions or Immediate Actions.

Reasons:

At the current power level the student must know that by procedure the Unit Buses have not yet been transferred to the Unit Aux transformer. Also all inputs to the Startup XFMR Fault annunciator window result in opening and locking out all breakers to and from the Startup Transformer. With the current plant configuration this will result in de-energizing all Unit buses and ES buses resulting in a reactor trip and loss of main feedwater.

- A. Plausible since at this power level a turbine trip does not directly trip the reactor. However with the current plant configuration all RCPs will be lost resulting in a reactor trip.
- B. Correct. A reactor trip will occur due to the loss of all Unit buses. The "A" ES 4160V bus will also be de-energized until the EDG re-energizes the bus. While EFP-1 is available Step 7.15 of EOP-14, Enclosure 7 directs using FWP-7 if the "A" EDG is powering the ES bus.
- C. Plausible since at this power level a turbine trip does not directly trip the reactor. However with the current plant configuration all RCPs will be lost resulting in a reactor trip. EFP-1 would not be used in this scenario unless FWP-7 was not available IAW Step 7.15 of EOP-14, Enclosure 7.
- D. Plausible since the first part of the distractor is correct but EFP-1 would not be used in this scenario unless FWP-7 was not available IAW Step 7.15 of EOP-14, Enclosure 7.

OPS 5-116 Obj. 1; OPS 4-88 Obj. 4 & 7; EOP-14, Enclosure 7, Steps 7.8 & 7.15; AR-701, EP 0694; 10CFR 55.43(b)(5)

SRO - New

Reference(s) provided: None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

13. 065AA2.04 001/1/1//C/A 2.2/2.7/NEW/S/CR030901/OPS 4-81 OBJ 3

The following plant conditions exist:

- Reactor power is at 100% RTP.
- The 12 kV offsite power supply line is de-energized for maintenance.
- "A" Secondary Services Closed Cooling Water pump (SCP-1A) is removed from service for repair.
- The "B" 4160 V Unit bus "auto transfer" feature from the Aux transformer to the Startup transformer has failed.
- A pre-job brief is in progress to transfer all Unit buses to the Startup transformer for maintenance on the "auto transfer" feature.
- AP-470, Loss of Instrument Air, is in progress.

Based on the above conditions which ONE of the following describes the actions that will be directed by the Control Room Supervisor and the final status of IAP-3A / 3B?

IAW AP-470 trip the reactor (1) . (2) will be running but will eventually trip on high temperature.

- A. ✓
 - (1) if instrument air pressure lowers to < 80 psig with evidence of abnormal system operation
 - (2) IAP-3A
- B.
 - (1) any time instrument air pressure lowers to < 80 psig
 - (2) IAP-3A
- C.
 - (1) if instrument air pressure lowers to < 80 psig with evidence of abnormal system operation
 - (2) IAP-3B
- D.
 - (1) any time instrument air pressure lowers to < 80 psig
 - (2) IAP-3B

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

065AA2.04 - Ability to determine and interpret the following as they apply to the Loss of Instrument Air: Typical conditions which could cause a compressor trip (e.g., high temperature)

SRO Only Analysis: Requires knowledge of procedure steps and mitigation strategy in the middle of an AP.

Reasons:

- A. Correct. A step in the followup actions of AP-470 states conditions for tripping the reactor: abnormal equipment operation, DHR not in service, and instrument air pressure < 80 psig. IAP-3A is powered from Rx Aux 3A only and is cooled only by SC. Due to SCP-1A being OOS initially and the failure of the "B" 4160V Unit bus "auto transfer" relay SCP-1B will also be lost when the reactor is tripped. This will result in IAP-3A compressor tripping on high 1st or 2nd stage compressor temperature of 125 degrees F.
- B. Plausible since a portion of the first part of the distractor is correct and all of the second part of the distractor is correct.
- C. Plausible since first part of distractor is correct. IAP-3B can be powered from either the 12 kV offsite line or Rx Aux Bus 3B. Due to the 12 kV line being OOS initially and the failure of the "B" 4160V Unit bus "auto transfer" relay no power will be available to IAP-3B following the reactor trip.
- D. Plausible since a portion of the first part of the distractor is correct. IAP-3B can be powered from either the 12 kV offsite line or Rx Aux Bus 3B. Due to the 12 kV line being OOS initially and the failure of the "B" 4160V Unit bus "auto transfer" relay no power will be available to IAP-3B following the reactor trip.

OPS 4-81, Obj. 3; AP-470 Step 3.5; OPS 4-81 Section 1-4.0.A.2 & 3; 10CFR 55.43(b)(5)

SRO - New

Reference(s) provided: None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

14. 069AG2.2.38 002/14/2/1190302001/C/A 3.6/4.5/NEW/S/CR030901/OPS 5-01 OBJ 5

The following plant conditions exist:

- RCS temperature is 180° F and preparations are being made to raise temperature to 250° F.
- While testing the interlocks on the personnel hatch one of the linkages was broken and parts will not be available for 18 hours.

Which ONE of the following describes the applicable TS action statement and whether it would be acceptable to raise RCS temperature to 250° F with the personnel hatch interlocks inoperable? **(reference provided)**

Enter TS 3.6.2, Condition (1) is inoperable. The RCS heatup (2) .

- A. (1) "C" because the airlock
(2) is permitted by TS 3.0.4
- B. ✓ (1) "B" because the interlock function
(2) is permitted by TS 3.0.4
- C. (1) "C" because the airlock
(2) is NOT permitted by TS 3.0.4
- D. (1) "B" because the interlock function
(2) is NOT permitted by TS 3.0.4

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for 2009 SRO NRC BANK Submittal 07-20-09

069AG2.2.38 - Knowledge of conditions and limitations in the facility license.
(Loss of Containment Integrity).

SRO Only Analysis: Requires knowledge of generic technical specifications and ability to apply ITS actions for containment integrity.

Reasons:

- A. Plausible since the personnel hatch interlocks affect both doors and if non-functional would allow both doors to be open simultaneously making the airlock incapable of performing its intended function.
- B. Correct. Condition "B" applies when the personnel hatch interlocks are inoperable. Since the action for this ITS condition allows for continuous operation it would be permissible to heat up the RCS and change modes under ITS 3.0.4.
- C. Plausible since the personnel hatch interlocks affect both doors and if non-functional would allow both doors to be open simultaneously making the airlock incapable of performing its intended function. Also plausible due to the linkage with ITS 3.6.1 which does not allow continued operation without meeting the LCO and therefore ITS 3.0.4 would not allow a mode change without meeting the requirements for Containment Integrity .
- D. Plausible since Condition "B" would be applicable when the personnel hatch interlocks are inoperable. Also plausible due to the linkage with ITS 3.6.1 which does not allow continued operation without meeting the LCO and therefore ITS 3.0.4 would not allow a mode change without meeting the requirements for Containment Integrity.

OPS 5-01 OBJ 5; TS 3.6.2

SRO - NEW

Reference(s) provided - TS 3.6.2

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

15. 076A2.01 001/2/1//C/A 3.5/3.7/BANK/S/CR030901/OPS 4-57 OBJ 9

The following plant conditions exist:

- OP-208, Power Shutdown, is in progress with reactor power at 5% RTP.
- Annunciator M-02-05, Screen Wash Trouble, alarms.
- Circulating Water Traveling Screens, CWTS-1A and CWTS-2, are both clogged with their shear pins failed.
- CWTS-1B through 1G are operating with no evident clogging.
- The affected flume level(s) is/are almost empty.
- RB Cooling is in Mechanical mode.
- NO immediate operator actions have been taken.

Which ONE of the following describes an indication caused by the above conditions and as the Control Room Supervisor what actions should be directed?

A. Rising CRD stator temperatures.

Trip the reactor due to loss of the UHS, perform EOP-02, Vital System Status Verification, and concurrently perform AP-330, Loss of Nuclear Service Cooling.

B. Rising RB temperatures.

Trip the reactor due to loss of the UHS, perform EOP-02, Vital System Status Verification, and concurrently perform AP-330, Loss of Nuclear Service Cooling.

C. Rising CRD stator temperatures.

Start RWP-2A, and as long as the UHS remains operable continue in OP-208, Power Shutdown.

D. Rising RB temperatures.

Start RWP-2A, and as long as the UHS remains operable continue in OP-208, Power Shutdown.

QUESTIONS REPORT
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076A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the RWS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:
Loss of RWS

SRO Only Analysis: Requires UHS operability determination and direction of prompt and prudent actions.

Reasons:

- A. Plausible since one of the first indications of a loss of Nuclear Services Raw Water is rising CRD stator temperatures and based on the condition of CWTS-2 and the fact that RWP-2A does not have any auto start function a total loss of Raw Water flow has occurred. Also plausible because CWTS-1A is clogged leading to the conclusion that RWP-2A may not be available and therefore the entry conditions for AP-330 are met. Based on this understanding, and AI-505, Conduct of Operations During Emergency and Abnormal Events, guidance the reactor would be tripped as a prompt and prudent action for a complete loss of UHS.
- B. Plausible since RB temperatures would be expected to rise following a loss of the UHS when RB cooling is aligned to Nuclear Services Closed Cycle Cooling (SW). However, when RB cooling is aligned in the "mechanical mode", Industrial Cooling water is the cooling medium and not SW. Based on the condition of CWTS-2 and the fact that RWP-2A does not have any auto start function a total loss of Raw Water flow has occurred. Also plausible because CWTS-1A is clogged leading to the conclusion that RWP-2A may not be available and therefore the entry conditions for AP-330 are met. Based on this understanding, and AI-505, Conduct of Operations During Emergency and Abnormal Events guidance the reactor would be tripped as a prompt and prudent action for a complete loss of UHS.
- C. Correct. One of the first indications of a loss of Nuclear Services Raw Water is rising CRD stator temperatures and based on the condition of CWTS-2 and the fact that RWP-2A does not have any auto start function a total loss of Raw Water flow has occurred. The CRS should direct the reactor operator to start RWP-2A and verify that temperatures for Nuclear Services Closed Cycle/Raw Water cooling have stabilized and are returning to normal. Based on this expected result the plant shutdown can continue using OP-208.
- D. Plausible since RB temperatures would be expected to rise following a loss of the UHS when RB cooling is aligned to Nuclear Services Closed Cycle Cooling. However, when RB cooling is aligned in the "mechanical mode", Industrial Cooling water is the cooling media and not Nuclear Services Closed Cooling. Also plausible since the CRS should direct the reactor

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OPS-4-57, Obj. 9; OPS 4-57 Figure 1

SRO - BANK

Reference(s) provided: None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

16. 077AG2.2.12 002/1/1//C/A 3.7/4.1/NEW/S/CR030901/OPS 4-06 OBJ 6

The following plant conditions exist:

- SP-354A, Monthly Functional Test of the Emergency Diesel Generator EGDG-1A, has been started concurrently with SP-907A, Monthly Functional Test of 4160V ES Bus "A" Undervoltage.
- The "A" ES 4160V Bus stripping signal has been defeated IAW SP-907A.
- A dedicated operator is stationed to perform Enclosure 2, Emergency Restoration of EGDG-1A.
- A severe weather alert has been declared with lightning causing disturbances on the 500 and 230 KV power lines.
- A lightning strike is observed near the switchyard.

Which ONE of the following describes actions that should be directed by the CRS IAW SP-354A?

Direct the surveillance personnel to:

- A. ✓ discontinue relay testing and perform SP-907A, Enclosure 2, then ensure "A" ES Diesel is in ES standby.
- B. complete relay testing, then ensure "A" ES Diesel is in ES standby.
- C. discontinue relay testing and perform SP-907A, Enclosure 2, then complete SP-354A ensuring the diesel is loaded on the bus for a minimum of 1 hour to restore "A" ES Diesel to operable status.
- D. complete relay testing, then complete SP-354A ensuring the diesel is loaded on the bus for a minimum of 1 hour to restore "A" ES Diesel to operable status.

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077AG2.2.12 - Knowledge of surveillance procedures. (Generator Voltage and Electric Grid Disturbances)

SRO Only Analysis: Requires assessing conditions to determine the impact to the plant and plant equipment with respect to surveillance procedure limitations, the coordination of multiple surveillance activities and their impact on operability and availability of the ES Diesel.

Reasons:

- A. Correct. Based on Step 3.5.10 of SP-354A diesel testing may be delayed due to inclement weather to avoid load disturbances which could affect the diesel. Testing should be stopped and the diesel placed in a condition in which it is capable of responding to a loss of offsite power.
- B. Plausible since completion of the relay testing could be assumed to be necessary to restore operability of the undervoltage protection circuit and the diesel should be placed in a condition in which it is capable of responding to a loss of offsite power.
- C. Plausible based on Step 3.5.10 of SP-354A which states that diesel testing may be delayed due to inclement weather to avoid load disturbances which could affect the diesel, and based on the progress made in SP-354A it could be assumed that a loaded run is required to restore operability of the diesel.
- D. Plausible since completion of the relay testing could be assumed to be necessary to restore operability of the undervoltage protection circuit and based on the progress made in SP-354A it could be assumed that a loaded run is required to restore operability of the diesel.

OPS 4-06, OBJ 6; SP-354A Step 3.5.10; SP-907A Step 3.5.3

SRO - NEW

Reference(s) provided - None

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

077AG2.2.12 - Knowledge of surveillance procedures. (Generator Voltage and Electric Grid Disturbances)

SRO Only Analysis: Requires assessing conditions to determine the impact to the plant and plant equipment with respect to surveillance procedure limitations, the coordination of multiple surveillance activities and their impact on operability and availability of the ES Diesel.

Reasons:

- A. Correct. Based on Step 3.5.10 of SP-354A diesel testing may be delayed due to inclement weather to avoid load disturbances which could affect the diesel. Testing should be stopped and the diesel placed in a condition in which it is capable of responding to a loss of offsite power.
- B. Plausible since completion of the relay testing could be assumed to be necessary to restore operability of the undervoltage protection circuit and the diesel should be placed in a condition in which it is capable of responding to a loss of offsite power.
- C. Plausible based on Step 3.5.10 of SP-354A which states that diesel testing may be delayed due to inclement weather to avoid load disturbances which could affect the diesel, and based on the progress made in SP-354A it could be assumed that a loaded run is required to restore operability of the diesel.
- D. Plausible since completion of the relay testing could be assumed to be necessary to restore operability of the undervoltage protection circuit and based on the progress made in SP-354A it could be assumed that a loaded run is required to restore operability of the diesel.

OPS 4-06, OBJ 6; SP-354A Step 3.5.10; SP-907A Step 3.5.3

SRO - NEW

Reference(s) provided - None

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17. BW/A03AG2.4.6 001/1/2//C/A 3.7/4.7/MOD/S/CR030901/OPS 5-14 OBJ. 3

The following plant conditions exist:

- A reactor trip has just occurred.
- All the normal lights on the NNI-Y power supply monitors are lit.
- The NNI-Y status light on the Redundant Instrument Panel is extinguished.

Which ONE of the following describes the procedure mitigation strategy for this event?

Enter EOP-2, Vital System Status Verification,:

- A. and complete prior to performing AP-582, Loss of NNI-Y. AP-582 is entered due to the loss of NNI-Y DC power.
- B. and complete prior to performing AP-582, Loss of NNI-Y. AP-582 is entered due to the loss of NNI-Y AC power.
- C. complete the Immediate Actions, then concurrently perform AP-582, Loss of NNI-Y. AP-582 is entered due to the loss of NNI-Y DC power.
- D. ✓ complete the Immediate Actions, then concurrently perform AP-582, Loss of NNI-Y. AP-582 is entered due to the loss of NNI-Y AC power.

QUESTIONS REPORT
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BW/A03AG2.4.6 - Knowledge of EOP mitigation strategies. (Loss of NNI-Y)

SRO Only Analysis: It is the Procedure Director's (SRO) function to designate procedure performance during emergencies.

Reasons:

- A. Completion of EOP-2 is not required prior to entry into AP-582. With the normal lights lit on the power supply monitors DC power is not lost.
- B. Completion of EOP-2 is not required prior to entry into AP-582.
- C. With the normal lights lit on the power supply monitors DC power is not lost.
- D. Correct. Per AI-505 the Immediate Actions of EOP-2 are completed first then additional APs are concurrently performed. The NNI-Y status light on the RIP will extinguish with the loss of NNI-Y AC OR DC power. The power supply monitor lights only look at DC power. Since these lights are still on DC power has NOT been lost.

OPS 5-14 Obj. 3; AI-505 Section 4.1.2; OPS 4-09 Figure 16; 10CFR55.43(b)(5)

SRO - Modified (ROT-5-14 049)

Reference(s) provided: None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

18. BW/E09EA2.2 001/1/2/1150501001/MEM 3.5/4.0/BANK/S/CR030901/OPS 5-98 OBJ. 2 & 5

The plant was at 100% full power when a loss of ALL offsite power occurred. EOP-02, Vital System Status Verification, Immediate Actions are complete.

As Procedure Director, which ONE of the following describes your procedural flowpath during these conditions?

- A. Exit EOP-02 when Symptom Scan is completed.
Transition to AP-770, Emergency Diesel Generator Actuation.
Route from AP-770 to EOP-09, Natural Circulation Cooldown.
- B. Exit EOP-02 when Symptom Scan is completed.
Transition to AP-770, Emergency Diesel Generator Actuation.
Route from AP-770 to OP-209, Plant Cooldown.
- C. Complete applicable follow-up steps of EOP-02.
Concurrently perform AP-770, Emergency Diesel Generator Actuation.
Route to EOP-10, Post-Trip Stabilization.
Route from EOP-10 to OP-209, Plant Cooldown.
- D. ✓ Complete applicable follow-up steps of EOP-02.
Concurrently perform AP-770, Emergency Diesel Generator Actuation.
Route to EOP-10, Post-Trip Stabilization.
Route from EOP-10 to EOP-09, Natural Circulation Cooldown.

QUESTIONS REPORT

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BW/E09EA2.2 - Ability to determine and interpret the following as they apply to the (Natural Circulation Cooldown): Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

SRO Only Analysis: Procedure transitions take place in the middle of EOPs/APs which require knowledge beyond simple EOP/AP entry conditions and Immediate Actions.

Reasons:

- A. The progression of this event would be from EOP-02 to EOP-10 to EOP-09. AP-770 should be concurrently performed but EOP-2 should not be exited unless a symptom develops or routing guidance is given by EOP-2 follow-up actions. EOP-09 would not be entered until the applicable follow-up actions of EOP-10 are completed.
- B. AP-770 should be concurrently performed but EOP-2 should not be exited unless a symptom develops or routing guidance is given by EOP-2 follow-up actions. The cooldown will be conducted under the guidance of EOP-09, Natural Circulation Cooldown, because the loss of off-site power de-energized the buses which supply RCP power. IF RCPs were still available OP-209 would be proper routing for this condition.
- C. Transition to EOP-10 is correct. The cooldown will be conducted under the guidance of EOP-09, Natural Circulation Cooldown because the loss of off-site power de-energized the buses which supply RCP power. OP-209 would be the proper routing for a normal post trip condition.
- D. Correct. The progression of this event would be from EOP-02 to EOP-10 to EOP-09. No RCPs would be operating following a loss-of-offsite power.

OPS-5-98 Obj. 2 & 5; EOP-02 Step 3.15 & Step 3.31; EOP-10 Step 3.29;
10CFR55.43(b)(5)

SRO - Bank

Reference(s) provided: None

QUESTIONS REPORT

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19. G2.1.15 002/GENERIC///MEM 2.9/3.9/BANK/S/CR030901/OPS 5-01 OBJ 14

The following plant conditions exist:

- The plant is in Mode 3.
- One of the two available PPOs slips and severely sprains his ankle while performing a walkdown of the Reactor Building.
- The PPO is contaminated and is escorted to the hospital by both available Health Physics technicians.

Which ONE of the following describes the Technical Specification requirement, relating to shift staffing, for this situation?

- A. No action is required. Minimum staffing levels are still met.
- B. If it is two hours or less until shift turnover is scheduled to occur no action is required.
- C. Another PPO should be called in immediately and should arrive within two hours.
- D. ✓ Another HP technician should be called in immediately and should arrive within two hours.

G2.1.5 - Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.

SRO Only Analysis: Administrative control listed in Tech Spec Section 5.

Reasons:

- A. A minimum of one HP technician is required when fuel is in the reactor.
- B. Efforts must be made immediately to replace the HP technician within two hours.
- C. Only one PPO is required to meet staffing levels.
- D. Correct. A minimum of one HP technician is required when fuel is in the reactor.

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OPS 5-01, Obj. 14; TS 5.2.2

SRO - BANK

Reference(s): None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

20. G2.1.8 002/GENERIC//0860402008/C/A 3.1/4.4/NEW/S/CR030901/OPS-5-116 OBJ 2

The following plant conditions exist:

- FWP-7 is removed from service for overhaul.
- A large break LOCA has occurred and EOP-08A, LOCA Cooldown is in progress.
- EFP-3 failed to start and EFP-2 tripped on mechanical overspeed.
- The TSC is operational with limited HP support.
- EOP-08A requires performance of EOP-14, Enclosure 2, PPO Post Event Actions.

Which ONE of the following should the TSC be directed to perform *first* based on limited HP resources and what is the basis of the priority?

The TSC should be directed to support _____ (1) _____ first because _____ (2) _____ .

- A. ✓
 - (1) performing PPO Post Event Actions
 - (2) high radiation may prohibit access to equipment later in the event
- B.
 - (1) resetting the mechanical overspeed on EFP-2
 - (2) high radiation may prohibit access to equipment later in the event
- C.
 - (1) performing PPO Post Event Actions
 - (2) this activity is *required* for core cooling
- D.
 - (1) resetting the mechanical overspeed on EFP-2
 - (2) this activity is *required* for core cooling

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G2.1.8 - Ability to coordinate personnel activities outside the control room.

SRO Only Analysis: This is an SRO function as designated by procedure.

Reasons:

- A. Correct. EOP mitigation strategy prioritizes the performance of EOP-14, Enclosure 2, PPO actions in order to close the breaker for power to DHV-3 which may be needed during a LOCA for boron precipitation. This breaker is in the auxiliary building and may not be accessible when the ECCS is placed on long term cooling due to high radiation levels.
- B. Plausible since based on the conditions given there is no EFW/AFW and therefore no primary to secondary heat transfer available. Also plausible since EFP-2 may not be accessible due to high radiation levels after the ECCS is placed on long term cooling.
- C. Plausible since EOP mitigation strategy prioritizes the performance of EOP-14, Enclosure 2, PPO actions in order to close the breaker for power to DHV-3 which may be needed during a LOCA for boron precipitation. This breaker is in the auxiliary building and may not be accessible when the ECCS is placed on long term cooling due to high radiation levels. Also plausible since boron precipitation could interfere with core cooling however use of DHV-3 is not the primary method of mitigating boron precipitation.
- D. Plausible since based on the conditions given there is no EFW/AFW and therefore no primary to secondary heat transfer available which could imply that core cooling does not exist if it is not understood that primary to secondary heat transfer is not required during a large break LOCA.

OPS 5-116, Obj. 2; AI-505 Step 4.1.4.d; ECDSOP-14, Step 3.107

SRO - NEW

Reference(s) provided - None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

21. G2.2.37 001/GENERIC//1190302001/C/A 3.6/4.6/BANK/S/CR030901/OPS 5-01 OBJ 10 & 12

The following plant conditions exist:

- A TS required plant shutdown to Mode 4 is in progress due to a broken shaft on DHP-1A.
- RCS temperature is 285° F.
- RCP-1A and 1B are running.

While checking DHP-1B for start the PPO reports an oil spill around the motor and the oil bubbler empty.

Which ONE of the following describes the appropriate action(s) to be taken?

- A. Remain in this mode until either DHP-1A or 1B are repaired.
- B. Remain in this mode and declare an Unusual Event based on the "Inability to reach required mode within ITS time limits".
- C. ✓ Continue to Mode 4 and remain in Mode 4 until either DHP-1A or 1B are repaired.
- D. Continue to Mode 5 since LCO 3.0.3 now applies due to the inoperability of both DH removal trains.

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

G2.2.37 - Ability to determine operability and/or availability of safety related equipment.

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

Reasons:

- A. Plausible if the student believes that temperature needs to stay this high to ensure OTSG cooling remains available. The plant should be taken as low in Mode 4 as possible while still allowing the OTSGs to remain the source of heat removal.
- B. Plausible since entry into an Unusual Event is required but the plant should be taken as low in Mode 4 as possible while still allowing the OTSGs to remain the source of heat removal.
- C. Correct. LCO 3.5.3.A.1 will apply as soon as Mode 4 is entered. Both trains of LPI are now inoperable. TS bases for this LCO states that an alternate means of heat removal must continue until an LPI system is restored.
- D. Plausible since LCO 3.0.3 does apply but in this case the actions of 3.0.3 would not be taken due to the bases statement for LCO 3.5.3.A.1. While in Modes 1-3 LCO 3.5.2.B.1 would apply. Once Mode 4 is reached, LCO 3.5.3.A.1 would apply. It would be difficult to attain Mode 5 since the only method of heat removal is steaming the OTSGs.

TS 3.0.3, 3.5.2, 3.5.3 & Bases; OPS 5-01 Section 1-1.0; EM-202, Enclosure 1; Task #'s 1190402001, 1150402012; 10CFR55.43(b)(2)

SRO - Bank

Reference(s) provided: None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

22. G2.2.43 001/GENERIC///MEM 3.0/3.3/NEW/S/CR030901/OPS 5-38 OBJ 22

Which ONE of the following conditions requires entry into the Degraded Annunciator Log (DAL) IAW AI-500, Conduct of Operations?

An annunciator link is opened at 0700:

- A. ✓ due to a nuisance alarm. The annunciator link is closed at 1800 the following day.
- B. due to a transmitter failure that would not allow the annunciator window to clear. The transmitter failure is now repaired and the annunciator link is closed at 1800 that same day.
- C. IAW an Equipment Clearance Order (ECO). The ECO is released and the annunciator link is closed at 1800 the following day.
- D. IAW a procedure. The procedure is completed and the annunciator link is closed at 1800 that same day.

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

G2.2.43 - Knowledge of the process used to track inoperable alarms.

SRO Only Analysis: The SRO has specific evaluation responsibilities when disabling an annunciator alarm as identified on page 14 of Appendix 7, Conduct of OPS procedure.

Reasons:

- A. Correct. Even though the nuisance alarm may not be indicative of degraded plant equipment since the link was open for more than one day it is required to be entered into the DAL.
- B. Plausible since a transmitter failure causing an annunciator window to continuously be in alarm is definitely degraded. However, since the link was closed on the same shift the link can be tracked with the "Temporarily Open Annunciator Link Log" and is not required to be entered into the DAL.
- C. Plausible since the link was open more than one day but since the open link was tracked by an ECO the requirement to enter the link into the DAL is waived.
- D. Plausible since an annunciator link is opened but since the open link was tracked by a procedure the requirement to enter the link into the DAL is waived.

OPS 5-38 Obj. 22; AI-500, Appendix 7, Section 4.3; 10CFR55.43(b)(5)

SRO - New

Reference(s) provided: None

QUESTIONS REPORT

for 2009 SRO NRC BANK Submittal 07-20-09

23. G2.3.15 001/GENERIC///MEM 2.9/3.1/NEW/S/CR030901/OPS 5-25 OBJ 9

Which ONE of the following identifies the radiation monitors used and their purpose during the performance of EM-202, Emergency Plan Implementing Procedure, for a *large break LOCA*?

A. ✓ RM-G29, "A" Loop D Ring Monitor or RM-G30, "B" Loop D Ring Monitor

Determine fission product barrier status.

B. RM-G16, Fuel Handling Bridge Reactor Building, or RM-G18, Incore Instrument Removal Area

Determine fission product barrier status.

C. RM-G29, "A" Loop D Ring Monitor or RM-G30, "B" Loop D Ring Monitor

Classify an event based on mechanical fuel damage.

D. RM-G16, Fuel Handling Bridge Reactor Building, or RM-G18, Incore Instrument Removal Area

Classify an event based on mechanical fuel damage.

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

G2.3.15 - Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.

SRO Only Analysis: Classification of E-Plan events and use of the Fission Product Barrier Matrix are SRO only functions.

Reasons:

- A. Correct. RM-G29 and 30 are listed in ITS Table 3.3.17-1 and are used for post accident radiation monitoring. The detectors are capable of withstanding harsh environmental conditions and are designed to measure very high radiation levels. EM-202 uses the information obtained from these instruments as one of the attributes for assessing fission product barrier status and also for making PARs. This choice relies on the knowledge that these monitors are required for post accident conditions (linkage to LBLOCA), their ability to measure very high radiation levels vs. the other RM-Gs, and their purpose in EM-202.
- B. Plausible since both RM-G16, and RM-G18 are used in EM-202, the detectors are located in the reactor building, and the EM does use radiation as one of the attributes for determining the status of the fission product barriers.
- C. Plausible since both RM-G29, and RM-G30 are used in EM-202, the detectors are located in the reactor building, and the EM does use radiation as one of the attributes for event classification.
- D. Plausible since both RM-G16, and RM-G18 are used in EM-202, the detectors are located in the reactor building, and the EM does use radiation as one of the attributes for event classification.

OPS 5-25, Obj. 9; OPS 5-01, Obj. 8; OPS 5-34, Obj. 6; OPS 4-25 Section 1-4.0.E; EM-202 Enclosure 1, Fission Product Barrier Matrix; 10CFR55.43(b)(5)

SRO - New

Reference(s) provided: None

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

24. G2.4.29 001/GENERIC///MEM 3.1/4.4/BANK/S/CR030901/OPS 5-34 OBJ 2

Event(s) have occurred or, are in process involving actual or likely major failures of plant functions needed for the protection of the public.

Any releases are NOT expected to result in exposure levels, which exceed EPA Protective Action Guideline exposure levels at the SITE BOUNDARY.

The TSC and the Emergency Operations Facility (EOF) are staffed and radiation monitoring teams may be dispatched.

Protected Area evacuation and accountability is performed at CR-3. Assembly and accountability is performed at Units 1/2 & 4/5.

Which ONE of the following classifications is defined by the above statements?

- A. Unusual Event
- B. Alert
- C. ✓ Site Area Emergency
- D. General Emergency

G2.4.29 - Knowledge of the emergency plan.

SRO Only Analysis: E-Plan classification.

Reason:

Site Area Emergency

This classification refers to event(s) that are in process, or have occurred, involving actual or likely major failures of Plant functions needed for the protection of the public OR HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are NOT expected to result in exposure levels, which exceed EPA Protective Action Guideline exposure levels at the SITE BOUNDARY. The TSC and the Emergency Operations Facility (EOF) are staffed and radiation monitoring teams may be dispatched. Protected Area evacuation and accountability is performed at CR3. Assembly and accountability is performed at Units 1/2 & 4/5.

QUESTIONS REPORT
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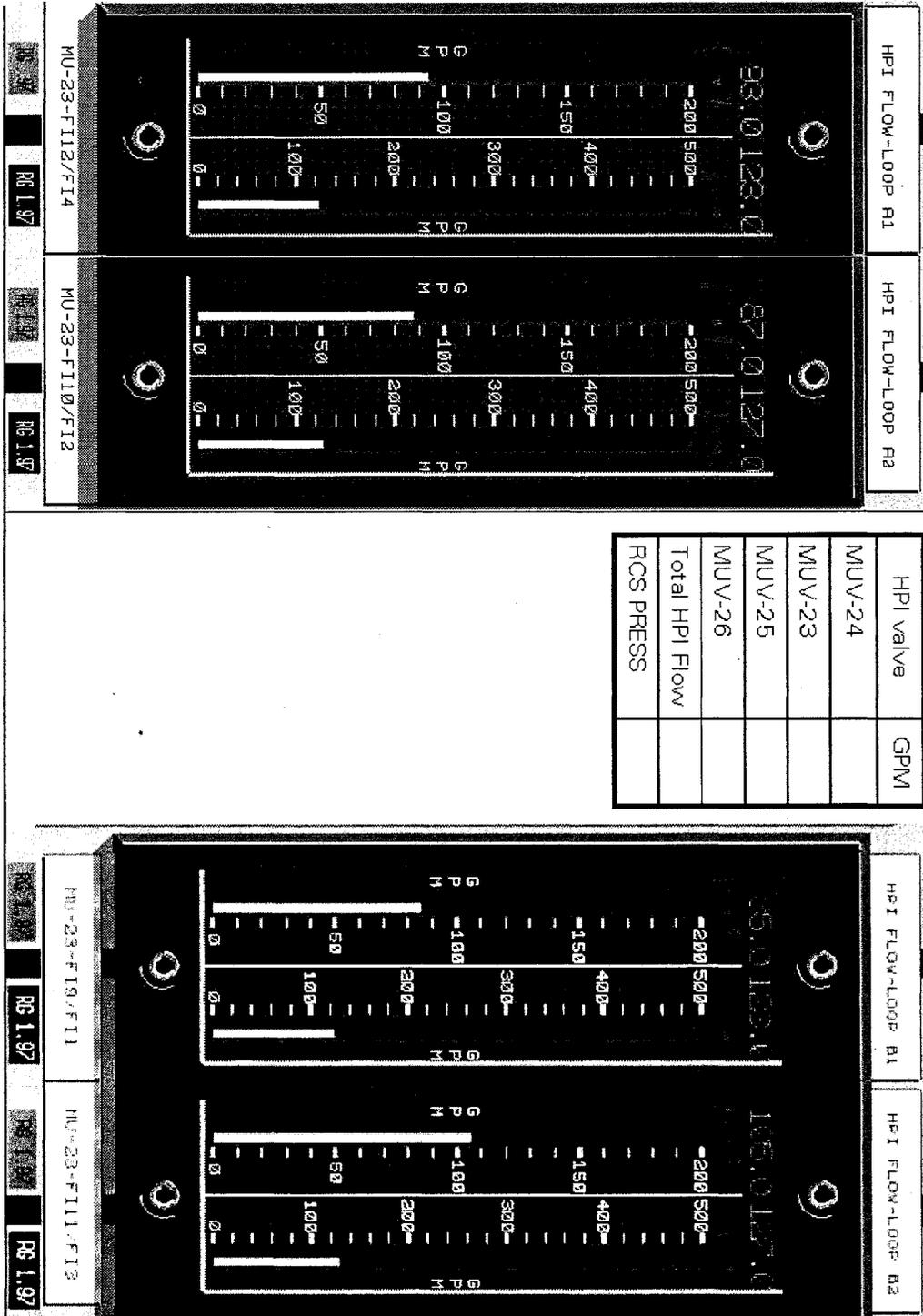
EM-202 Step 3.1.8.3; 10CFR55.43(b)(5)

SRO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

25. G2.4.3 001/GENERIC///C/A 3.7/3.9/NEW/S/CR030901/OPS 5-95 OBJ 2



QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

25. G2.4.3 001/GENERIC///C/A 3.7/3.9/NEW/S/CR030901/OPS 5-95 OBJ 2

The following plant conditions exist:

- A loss of adequate SCM has occurred.
- ES has actuated.
- RCS pressure is 1000 psig.
- EOP-03, Inadequate Subcooling Margin, is being performed.

One of the details in EOP-03, Step 3.14 evaluates if total HPI flow is acceptable by determining if total HPI flow is ≥ 470 gpm.

Using the picture above which ONE of the following describes the status of total HPI flow IAW EOP-03 and the mitigation path for these conditions?
(reference provided)

Total HPI flow is:

- A. acceptable.
Remain in EOP-03 and perform normal RCS cooldown.
- B. ✓ *not* acceptable.
Remain in EOP-03 and perform maximum RCS cooldown.
- C. acceptable.
Transition to EOP-08A, LOCA Cooldown.
- D. *not* acceptable.
Transition to EOP-08B, HPI PORV Cooldown.

QUESTIONS REPORT
for 2009 SRO NRC BANK Submittal 07-20-09

G2.4.3 - Ability to identify post-accident instrumentation.

SRO Only Analysis: Assessing plant conditions to determine the appropriate mitigation strategy is an SRO Only function.

Reasons:

- A. Plausible since the total HPI flow derived from the wide range HPI flow indicators is > 470 gpm (500 gpm) and the mitigation path with acceptable HPI flow would be toward a LOCA Cooldown.
- B. Correct. Based on the guidance in EOP-03, Inadequate SCM, the narrow range HPI flow indicators must be used to determine total HPI flow. These instruments meet Reg Guide 1.97 qualifications to be classified as Category 1, Type "A" variable. In the picture provided total HPI flow is less than 470 gpm (approximately 370 gpm). Based on Figure 3 of EOP-03 total HPI flow must be > 385 gpm to be deemed acceptable. If total HPI flow is not acceptable a maximum cooldown of the RCS is necessary to inject the CFTs and establish LPI flow.
- C. Plausible since the total HPI flow derived from the wide range HPI flow indicators is > 470 gpm (500 gpm) and the mitigation path with acceptable HPI flow would be toward a LOCA Cooldown.
- D. Plausible since the narrow range total flow is less than that required by Figure 3 of EOP-03. Also plausible since a strategy for ICC which may be assumed with inadequate HPI flow is to open the PORV in order to depressurize the RCS and allow CFT/LPI injection.