

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q≠K/A	SRO Only		
1	H	3												S	
2	H	2												S	K/A checked for match with question.
3	H	2												S	
4	H	4												S	
5	H	3												S	K/A checked for match with question.
6	H	2												S	
7	H	2												S	Review to ensure correct value off chart obtained <i>Chart use is correct.</i>
8	H	2				X								E	Distractor C needs to be rewritten since can be easily eliminated since one could that the affected SG(s) were id'd first before this step of the EOP. K/A checked for match with question. <i>Modified Distractor C.</i>
9	H	2												S	
10	F	2												S	K/A checked for match with question.

Instructions

[Refer to Section D of ES-401 and Appendix B for additional information regarding each of the following concepts.]

- Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.
- Enter the level of difficulty (LOD) of each question using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).
- Check the appropriate box if a psychometric flaw is identified:
  - The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needed).
  - The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).
  - The answer choices are a collection of unrelated true/false statements.
  - More than one distractor is not credible.
  - One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted).
- Check the appropriate box if a job content error is identified:
  - The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).
  - The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be linked to the job requirements).
  - The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in units).
  - The question requires reverse logic or application compared to the job requirements.
- Check the appropriate box if the sampled question does not match the approved K/A or an SRO-only question is not at the SRO level.
- Based on the reviewer's judgment, is the question as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (A)ppropriate?
- For any "U" ratings, at a minimum, explain how the Appendix B psychometric attributes are not being met.

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	0 ≠ K/A	SR0 Only		
11	H	2												S	K/A checked for match with question.
12	H	2												S	
13	H	2												S	
14	H	3												S	
15	F	3												S	K/A checked for match with question.
16	H	3												S	
17	F	3												S	K/A checked for match with question.
18	H	3												S	
19	H	3												S	
20	H	2												S	K/A checked for match with question.
21	F	2												S	
22	H	2												S	K/A checked for match with question.
23	H	2												S	
24	F	2												S	
25	H	2												S	K/A checked for match with question.
26	F	2												S	
27	F	2												S	
28	F	2												S	K/A checked for match with question.
29	F	2												S	
30	F	2												S	K/A checked for match with question.







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2	F	3											X	S		
3	H	3											X	S	K/A checked	
4	H	2											X	S		
5	H	2											X	S	K/A checked	
6	H	2											X	S		
7	H	2											X	S		
8	F	2											X	S		
9	F	2											X	S		
10	H	2											X	S	K/A checked	

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- For any "U" ratings, at a minimum, explain how the Appendix B psychometric attributes are not being met.



# STP Feedback on Draft RO Written Exam

## QUESTION #1

This is an SRO question according the STP Exam Bank. Recommend deleting from the RO Exam. We do not view this question as exclusively addressing 55.43 topics; we consider it to be the kind of system response knowledge that an RO should possess, and we therefore consider it a valid RO level question.

In the stem, the condition that states " Pressurizer level decreased to 8% initially and then increased rapidly to stabilize at 100%" should be changed to state "Pressurizer level decreased to 8% initially and then increased rapidly to 100% indicated" to clarify what is actually happening. Pressurizer level looks like it 'stabilizes' at 100% only because the indicating range goes no higher. Level doesn't actually stabilize there. This recommendation was incorporated.

Also, Distracter 'C' could be correct if RCPs are not operating. Per the conditions of the question they would be expected to be off. A Rx Vessel head vent line break could cause bubble formation in the RV head and push water into the Pressurizer much like what occurred at St. Lucie in the 1980's when RCPs were lost. Suggest replacing Distracter 'C' with 'RCS Cold Leg rupture.' This recommendation was incorporated.

## QUESTION # 6

*Changed as suggested.*

Question should be rated as 'Comprehensive' because it asks the applicant to assimilate how the failure will manifest itself in terms of plant response to reach a conclusion. This is not a question that can be answered by knowing one fact or simply concept. This question has a Question Level rating of High and a difficulty of 3 in the Exam Bank.

## QUESTION # 7

This question is not operationally valid for an RO, but is for an SRO. Even though the RO's and SRO's attend the same class and hear the 'mechanics' of how this EOP step is implemented, it is the SRO's that repeatedly practice it's implementation during simulator training. The various aspects of this question make it overly challenging to an RO: Again, we do not view this question as exclusively addressing 55.43 topics; the K/A specifically asks the RO to be able to do just what this question is asking. We consider it a valid RO level question.

g.

- Must determine which SG is ruptured (this is normally known when this step is performed in the procedure). We don't agree that it is inappropriate to ask the RO to identify which SG is ruptured.
- Must apply adverse containment rules (which don't normally exist for a SGTR) We agree that these conditions would not normally exist, and have modified the indications to reflect normal containment conditions. However, since the chart requires knowledge of containment conditions in order to correctly identify the column of numbers to use, containment conditions have been retained in the stem rather than just telling the examinee straight out that containment is not adverse.
- Must know how to implement EO30 chart information (RO's get virtually no practice doing this). We do not consider using the EO30 chart to be a specifically 55.43 topic; the RO's must use the chart in order to demonstrate mastery of the K/A, which is of fairly high importance for an RO.

Other comments:

- a. Based on information provided, the SGs are isolated from one another. The Main Steamline Rad monitors are downstream of the MSIVs and thus would not indicate activity accurately. A more realistic indicator for these conditions would be SG Narrow Range (NR) levels. Assuming the ruptured SG is 'A' (see c. below), the following NR levels could be used in conjunction with SG pressures: 'A' 75%, 'B' 45%, 'C' 40%, 'D' 50%. It should be noted that the ruptured SG has been identified by this step in the procedure so doing so as part of this question is contrary to normal procedure implementation. We have chosen not to use SG level as an indicator of which SG is ruptured, but, after modification based on this and other feedback, the ruptured SG is not the one with the highest pressure and the highest rad level.
- b. Based on information provided, the ruptured SG appears to be SG 'A' due to it's pressure being higher than the other SGs, but SG 'C' has the highest activity (however, see b. above). If 'A' SG is ruptured, then the correct answer is 477 Deg F (assuming adverse containment values apply; also see d. below). See comment on 'b' above.
- c. This question gives adverse containment conditions, however, these typically aren't characteristic of a SGTR. There must also be an RCS break for these to exist. This unsymptomatic information creates confusion in the question. This recommendation was incorporated.
- d. Change the beginning of the stem to read 'The plant was operating at full power when a SGTR occurred...' so as not to confuse 'A SGTR...' with 'A' SG. This recommendation was incorporated.
- e. Remove the statement in the stem that 'the plant has been stabilized'. This won't occur for some time due to continued leakage into the SG. Leakage won't stop until RCS is drained (height elevation of SG tubes). This recommendation was incorporated.
- f. Identify in the stem of the question that the determination is to be made per an EO30 attachment. This recommendation was incorporated.

Recommend making this an SRO only question, identifying which SG is ruptured in the stem (or use pressure and level indications to represent the ruptured SG) and deleting the adverse containment aspects. We don't agree that it should be an SRO only question (as stated above). Please look at the attached revised version of the question for comment.

An example question would be: We chose not to use this example.

The plant was operating at full power when a SGTR occurred. The ruptured SG has been isolated in accordance with OPOP05-EO-EO30, SGTR. Based on the following information and the attached page for OPOP05-EO-EO30, step 7.a, determine the required core exit temperature based on ruptured SG pressure.

	Narrow Range Level	SG Pressure
SG 'A'	75%	970 psig
SG 'B'	45%	820 psig
SG 'C'	40%	910 psig
SG 'D'	50%	770 psig

- A. 471 °F
  - B. 477 °F
  - C. 486 °F
  - D. 492 °F
- Answer: D

#### QUESTION # 8

*Changed as suggested.*

The referenced ERG (ERG E-2, Rev. 1A) has been superceded by Rev. 1C.

The keyed answer is taken out of context from what's in the ERG. Step 4 (page 32) states "Isolation of the feedwater to the faulted SG maximizes the cooldown capability of the nonfaulted loops following a feedline break and minimizes the RCS cooldown and mass and energy release following a steamline break." Recommend adding "... following a feedline break." to the end of answer 'B'.

Distracter 'D' states "Minimizes the loss of feedwater inventory through the affected SG(s)." This is true as any feedwater going to the faulted SG(s) is unavailable to the nonfaulted SG(s) for cooldown. The correct answer essentially says this. Recommend changing Distracter 'D' to "Allows identification of a tube rupture in the faulted SG(s)."

With recommendations, question 8 would now read:

OPOP05-EO-EO20, Faulted Steam Generator Isolation, step 4 ensures isolation of Main and Auxiliary Feedwater to the affected SG(s).

Which ONE of the following is the reason for the actions of this step?

- A. Maintains at least two loops available for cooldown
- B. Maximizes cooldown capability of the nonfaulted SG(s) following a feedline break.
- C. Allows identification of the faulted SG(s).
- D. Allows identification of a tube rupture in the faulted SG(s).

Answer B is still correct

#### QUESTION #9

*Changed as suggested.*

Current OPOP05-EO-FRH1 revision (14) requires 14 % Narrow Range level in at least one SG. Change the answer to reflect this.

Also, the stem of this question asks "Which of the following conditions must be met to allow terminating the feed and bleed following restoration of Auxiliary Feedwater." This statement implies that this one condition is all that is needed, however, there are others (refer to procedure step 26). The step the question is based on (procedure step 25) states "Check for adequate secondary heat sink"

Recommend the last sentence of the question stem and distracters be reworded to the following:

Which ONE of the following conditions is the MINIMUM heat sink requirement that must be met so subsequent termination of feed and bleed can be performed?

- A. At least one SG narrow range level must be greater than 34%.
- B. At least one SG narrow range level must be greater than 14%.
- C. Total AFW flow must be greater than 576 gpm.
- D. Total AFW flow must be greater than 1080 gpm.

Distracter 'A' would be correct if adverse containment conditions existed

Distracter 'C' was already used

Distracter 'D' is the AFW flow requirement for an ATWS.

#### QUESTION # 11

*Changed as suggested.*

Suggest putting CCW train information into a table as follows and changing the train that is selected to 'Local' to be 'OFF' (would not select a train in 'Local' to 'Standby'):

CCW Train	Pump Status	Train Mode Sw.	Local/Remote Sw.
A	Running	Run	Remote
B	Off	Off	Local
C	Off	Standby	Remote

Answer 'D' is still correct.

#### QUESTION # 12

*Changed as suggested.*

This question is beyond the required knowledge for an RO or SRO. It basically asks the applicant to recall from memory a single procedure requirement deep within an Off Normal Procedure that has 158 pages with numerous addendums covering a variety of plant conditions. The question is based on Addendum 2, Step 8 and the information in Addendum 10. Recommend this question be replaced with the following:

A loss of 120 VAC Vital Distribution Panel DP001 has occurred and the crew has entered OPOP04-VA-0001, Loss of 120 VAC Class Vital Distribution. Various instrumentation has failed including the following:

- Pressurizer level Channel 0465 failed low
- Charging Flow controller FK-0205 failed open.

In accordance with OPOP04-VA-0001, and based on the failures noted, the operator is directed to control pressurizer level by:

- A. Maintaining pressurizer level control in automatic.
- B. Adjusting Excess Letdown flow and Seal Injection flow.
- C. Adjusting Excess Letdown flow only.
- D. Adjusting Seal Injection flow only.

Correct answer is still 'B'

#### QUESTION # 14

*Changed as suggested.*

Suggest rewording distracter 'C' to say "the Jacket Water Three-Way Thermostatic Control Valve will bypass all flow around the Jacket Water Cooler."

#### QUESTION # 15

This question is beyond the required knowledge for an RO or SRO. It basically asks the applicant to recall from memory information contained in a procedural note and in the basis section that is specific to the failure modes of various air-operated components. Although students are sometimes asked to know failure modes of various types of valves, they are not required to know specific air pressures at which these valves will 'drift' (especially since an operator cannot monitor these individual air pressures). We do not agree. The procedure step in question is the very first, and pivotal step of the procedure, and is really the only step worth asking about in reference to the K/A (reasons for EOP actions). Answering the question only requires the examinee to recall that the reason for scrambling the reactor has to do with the MSIV's, and that is well articulated in the Basis of this procedure. Since step 1 (trip RX if not greater than 60 psig) is the central decision-making

step in the procedure, it is reasonable that RO's would know why a RX trip is necessary at this point. The K/A requirement clearly expects RO's to know key reasons for key steps in this EOP, and this seems to be the "key-est" step in the EOP. This recommended question does not address the K/A (reasons for EOP actions).

Recommend replacing this question with the following:

The Unit is operating at 100% power when Instrument Air pressure begins to decrease. The crew enters 0POP04-IA-0001, Loss of Instrument Air. Instrument Air pressure is currently 85 psig. In accordance with 0POP04-IA-0001, what operator actions are to be taken?

1. Verify SERVICE & INSTR. AIR CROSSOVER VALVE, N1(2)IA-PV-8559 opens.
  2. Ensure both Air Compressors are running.
  3. Verify INSTRUMENT AIR TO YARD ISOL. VALVE, N1(2)-PV-8568 closes.
  4. Verify INSTR. AIR DRYER EMER BYPASS VLV, N1(2)-IA-PV-8561 opens.
- A. 1, 2, 3  
B. 2, 3, 4  
C. 1, 3, 4  
D. 1, 2, 4

Answer: 'A'

Reference: 0POP04-IA-0001, step 7.0

#### QUESTION # 18

*Changed as suggested.*

Answer 'A': there's a typo at end of statement. Should be 'gpm' not 'pgm'

Change Distracter 'D' to read "Maintain bleed and feed until That is less than 550 °F, then feed SG A, B, C, OR D" to agree with wording used in other distracters.

#### QUESTION # 20

*Changed as suggested.*

This question is rated 'Memory/Fundamental Knowledge', which it could be if all that were required was memorization of the corresponding procedure requirement. However, the student must know and be able to work through the logic associated with the Source Range High Voltage control circuit relative to the distracters to determine the answer. Recommend this question be rated 'Comprehensive/Analysis'

#### QUESTION # 21

*Changed as suggested.*

All distracters of this question use the phrase "adjusting CCP flow with CCP suction aligned to ...". This question references 0POP04-RC-0004, step 6.0, however step 6.0 does not address CCP flow. It instead references 'Auto Makeup' and 'Manual Makeup' as methods to maintain VCT level. Recommend changing the common phrase to all distracters to read "Auto or manual makeup with CCP suction aligned to...."

QUESTION # 22

*Changed as suggested.*

Correct the 4<sup>th</sup> sentence in the stem to read "...360 mrem of which was received at STP."

QUESTION # 23

*Changed as suggested.*

In the stem, rather than saying 'Some plant conditions are:', say 'Current plant conditions are:'

QUESTION # 24

*Changed as suggested.*

The stem asks "Which ONE of the following operator actions is required per OPOP04-RC-0001...."  
The keyed answer is "increase letdown to 220 gpm. Per OPOP04-RC-0001, Rev. 5, step 7.0, increasing letdown flow is an action taken only if Chemistry recommends. It is not a required operator action. Recommend changing the stem statement to say "Which ONE of the following actions could Chemistry recommend per OPOP04-RC-0001...."

QUESTION # 25

*Changed as suggested.*

This question is an STP Exam Bank question that is marked as SRO, however, it's proposed for use on the RO exam. The question regards a decisional point for Emergency Operating Procedure implementation which is an SRO task, not RO. Recommend this question be replaced with the following:

A Small Break LOCA has occurred. Primary plant conditions have been stabilized and the crew has transitioned to OPOP05-EO-ES11, SI Termination. The HHSI and LHSI pumps have been secured and returned to Auto. Subsequently, the following conditions are noted:

- RCS Subcooling = 30 °F
- Containment Pressure = 1.5 psig
- RCS Pressure = 1650 psig
- Pressurizer Level = 15%
- RCP's: all OFF

Based on these conditions, which one of the following actions should the operators perform?

- A. Start at least one RCP
- B. Manually start SI pumps.
- C. Increase SG cooling
- D. Increase RCS pressure

Answer: B

- KA: Same as original question
- Reference: OPOP05-EO-ES11, Rev. 11, CIP
- Cog level: Memory/Knowledge

QUESTION # 29

*Changed as suggested.*

In the stem of the question recommend changing the statement "..Emergency Boration Flowpaths and Flowrates meet..." to "..Emergency Boration Flowpaths and Charging Flowrates meet..." to clarify that the flowrates in the question are those specified as indications used in OPOP04-CV-0003.

QUESTION # 30

*Changed as suggested.*

The information for this question comes from the UFSAR where the Design Bases of the RHR System are discussed. The correct answer and distracters cover a variety of plant conditions and assumptions made in the Design Bases discussion. Memorization of this information is beyond the scope of what an RO or SRO is expected to know. The KA has a relatively low importance and the question has essentially no operational validity. Recommend replacing this question with the following:

The plant is in Mode 5 with RHR Trains 'A' and 'B' in service maintaining RCS temperature at 170 °F. Both RHR trains are equally sharing the RCS heat removal. If Train 'A' RHR HX OUTL TEMP CONT valve, HCV-0864 fully closes due to a malfunction, what would be the resulting effects?

	'A' RHR Hx Outlet Temperature	'A' RHR System (Total) Flowrate	'B' RHR Hx Inlet Temperature
A	Increases	Decreases	Increases
B	Increases	Decreases	Remains the same
C	Decreases	Remains the same	Increases
D	Decreases	Remains the same	Remains the same

Answer: C

- KA: same as before
- Cog Level: Comp/Anal
- Ref: LOT 201.09

QUESTION # 32

*Changed as suggested.*

Question is rated 'Memory/Fundamental Knowledge', but it is 'Comprehensive/Analysis' because it requires the student to determine which data to use, then correctly perform a calculation based on provided information. Knowing the subcooling margin under the specified conditions is not memory information.

Also, change the first bulleted statement from "...highest exit core..." to "...highest core exit..."

QUESTION # 33

*Changed as suggested.*

This question was taken from the STP Requal Exam Bank. Questions in this bank are used in the Licensed Operator Requal Program and are intended to be open reference. For a student to answer this question from memory he/she would have to know the specific requirements of the RCS leakage Tech Spec (including valve size of the specified leaking check valve) and the SI Accumulator Tech Specs. Clearly, this is beyond the scope of recall for either an RO or an SRO.

Additionally, the keyed answer cannot be substantiated because there is no information in the question as to how much water was added to the Accumulator. It appears to be the correct answer only because the others are incorrect.

Recommend the question be changed as follows:

The plant is at 100% power. A leakrate test was conducted on 'A' SI Accumulator Cold Leg Injection Check Valve, SI-0046A, which reveals the leakage to be 1.2 gpm. This is a 12" valve. Other RCS leakage includes:

- Identified Leakage is 8.6 gpm including the 1.2 gpm above.
- Unidentified Leakage is 0.5 gpm

What actions should the operators take?

- A. No action is required. All leakrates are within Tech Spec limits.
- B. Enter Tech Spec 3.4.6.2, Operational Leakage, based on exceeding the limit for Unidentified Leakage.
- C. Enter Tech Spec 3.4.6.2, Operational Leakage, based on exceeding based on exceeding the limit for Identified Leakage.
- D. Enter Tech Spec 3.4.6.2, Operational Leakage, based on exceeding the limit for Reactor Coolant System Pressure Isolation Valves.

Answer: A

#### QUESTION # 36

*Changed as suggested.*

Recommend adding the corresponding controller demand for 2335 psig (87.5%) as the controller will actuate components based on the % demand, rather than pressure. Each setpoint is typically expressed in both terms.

#### QUESTION # 38

*Changed as suggested.*

This question is marked as 'Memory/Fundamental Knowledge', but should be rated 'Comprehensive/Analysis'. The student must know must know that the Tech Spec action in this case is to bypass the bistable rather than trip it (which is normally the case), then apply that to the normal Containment Spray logic and be able to discern how the logic is subsequently affected (again, a different result than if it were tripped).

#### QUESTION # 39

*Changed as suggested.*

Correct answer is 'A'. The logic for ESF Actuation on compensated low steamline pressure is 2/3 detectors on 1 out of 4 SG's.

#### QUESTION # 40

*Changed as suggested.*

Distracter 'D' seems incomplete. Should sentence end "...and the remaining Mode III loads must be manually started." ?

Question is rated 'Memory/Fundamental Knowledge', but recommend it be rated 'Comprehensive/Analysis' because it requires the student to know and be able to apply sequencer actuation and logic knowledge under the given plant conditions to determine the appropriate Sequencer response.

#### QUESTION # 41

*Changed as suggested.*

Underline 'minimum' and add 'a' before 'DBA'

#### QUESTION # 43

*Changed as suggested.*

This question is beyond the required knowledge for an RO or SRO. It basically asks the applicant to recall from memory specific timing information for the Sequencer and associated loads under

certain conditions. Operationally, this information is of little importance and there are no Emergency Procedure requirements to verify these times during accident conditions. Recommend replacing this question with the following:

The Unit is operating at 100% power.

- Train 'A' ESF Load Sequencer has just been de-energized for I&C troubleshooting.
- A Reactor trip and Safety Injection are initiated on LO Pressurizer Pressure.
- Containment pressure is 10 psig and increasing.
- Offsite power is available.
- All systems are functioning as expected under the existing plant conditions.

Which ONE of the following correctly describes the response of the Train 'A' Containment Spray (CS) System AND any operator actions required to align CS system for operation?

- A. The 'A' CS pump will start on the HI-3 Containment pressure signal. The operator must manually align the 'A' CS pump discharge valve.
- B. With Offsite power available, there will be no adverse affect on the CS system. The 'A' CS pump will start and the discharge valve will open as required.
- C. The 'A' CS pump discharge valve will open on the HI-3 Containment pressure signal and the operator will have to start the 'A' CS pump manually.
- D. The 'A' CS pump will not start and its discharge valve will not open. The operator must take BOTH CS /CIB/CVI actuate switches to the ACTUATE position which will start the 'A' CS pump and open it's discharge valve.

Answer: C

KA: same as original

Cog Level: Comp/Analysis

QUESTION # 44

Explanation states "Tave is currently below Tref", should state "Tave is currently above Tref"  
*Changed as suggested.*

QUESTION # 47

- Change the stem statement "The following actions are required to reset/block the FWI:" to "Which of the following are the MINIMUM actions required to reset/block the FWI to the Low Power Feed Reg Valves?" The stem was reworded as a question and to include minimum actions to ensure Distracter 'B' is incorrect. Also, the keyed answer will reset/block the FWI signal to only the Low Power Reg Valves. P-4 must be cleared to reset the FWI signal to the Main Feed Reg Valves. (Ref. Logic Dwg. 5Z109Z42116). *Changed as suggested.*
- Containment Pressure is stated as 15 psia. Containment pressure is normally given in psig and other pressures given are in psig. Recommend stating this pressure in the same units to eliminate an unnecessary error trap (seems designed to test ability to read question rather than assimilate information). The correct units for Containment pressure were used in Question # 44. *Changed as suggested.*
- Distracter 'B' is correct. Performing these actions will allow the FWI signal to be reset to both main and low power Feed Reg Valves. In addition to the recommended changes in the stem (see above), recommend saying "Clear P-4, THEN press the..." *Changed as suggested.*
- Distracter 'D': use 'Steam Generator Level' in place of 'L<sub>SG</sub>' *Changed as suggested.*

#### QUESTIONS # 49

*Replaced question with STP Bank Question #848 due to feedback on the SRO exam that indicated that this question (STP Bank Question #1090) had also been used on the SRO exam.*

- In the 4<sup>th</sup> bulleted item in the stem, change 'function' to 'functioned'
- In the stem of the question, the following statement is made: "10 minutes later power is lost to 4160v ESF Bus E1A". Recommend changing this to "4160v ESF Bus E1A loses power". The 10 minutes stated has no bearing on the correct answer and can be confusing, as this is sufficient time for Addendum 5 to be completed.

#### QUESTION # 50

Replace 'the MCB' with 'its Control Room Panel' *Changed as suggested.*

#### QUESTION # 51

This question requires memorization of non-emergency information. The information this question is based on comes from within normal operating and surveillance procedures. There are literally thousands of limits and precautions throughout these procedures. It is not reasonable to expect a student to know these from memory. Recommend replacing this question with the following: *Changed as suggested.*

The # 11 ESF Diesel Generator is undergoing a surveillance test and is currently paralleled with off-site power with a load of 5400 MW and voltage of 4160v. If the Control Room operator were to go to RAISE on the DG GOVERNOR Control switch, which of the following would reach a limit first?

- a. Frequency
- b. Voltage
- c. Reactive Power (kVAR)
- d. True Power (KW)

Answer: D

Cog Level: Comp/Analysis

#### QUESTION # 52

- In the stem, change "PRM" to 'rad monitor' and capitalize 'exceed' *Changed as suggested.*
- Distracter 'B': recommend changing to "A member of the public visiting the site that has thus far accumulated a site dose of 5 mrem (TEDE). *Changed as suggested.*
- Distracter 'C' seems to have a different size font than the others do. *Changed as suggested.*
- Somewhere in the question, spell out what the terms TEDE and DDE mean. *Changed as suggested.*

#### QUESTION # 55

In the stem, change 'Loss of Offsite Power' to 'loss of ALL Offsite Power' for clarification. *Changed as suggested.*

### QUESTION # 56

In the stem of the question, the plant conditions given are not realistic and some aren't relevant. Recommend the stem be reworded as follows:

The following conditions exist on Unit 1:

- Reactor Power is 100%
- Control Bank 'D' is at 249 steps
- Rod control is in automatic

At 0300 hours a rapid load reduction is performed due to a feedwater transient. Control Bank 'D' rods are now at 235 steps with the exception of rod D4 which has remained at 249 steps.

In accordance with ... (rest is the same as the original question) *Changed as suggested.*

### QUESTION # 57

Distracter 'D' seems to be a different font size than the others. *Changed as suggested.*

### QUESTION # 58

- In the stem of the question change containment pressure to units of psig. Containment pressure is normally given in psig. Other pressures in stem of question are given in psig. Question # 44 uses the correct units for Containment pressure. *Changed as suggested.*
- In the stem of the question, refueling is misspelled. *Changed as suggested.*

### QUESTION # 59

Recommend re-formatting this question to examine steady state to steady-state conditions from one power level to another because, during a power change the rods may temporarily step opposite of what's expected due to rate of change inputs. Also, it should be stated that Rod Control is in Automatic and that the power change is not being compensated for by dilution (the normal way of reactivity control during power changes). Recommend the following: *Changed as suggested.*

Unit 2 is initially at 80% power with Rod Control in Automatic. Turbine load is slowly increased to 90% power. When compared with the plant conditions at 80% power, which of the following represents the expected FINAL plant conditions assuming no RCS boron changes are made during the power increase?

	Steam Pressure	Control Rod position	Tavg
A	LOWER	HIGHER	HIGHER
B	LOWER	HIGHER	LOWER
C	HIGHER	LOWER	HIGHER
D	HIGHER	LOWER	LOWER

Correct answer is 'A'

- Distracters in original question are not in sequence
- There is no correct answer for original question. Based on explanation given in question, rods will step out (must be in Auto to do this) because of increasing Tave program. This is all true, but there is no answer that combines all correct changes:

- 
- Steam pressure decreases
- 
- Control Rods step out
- 
- Tave increases

#### QUESTION # 60

- The correct answer is 'A', not 'C'. The explanation for the question is correct and supports 'A' as the correct answer. *Changed as suggested.*
- The information given establishes a certain air pressure at the compressors, but not at the steam dump valves. In order to properly answer the question the student must know how much air pressure is available at the steam dumps. Recommend the question stem be changed to read "...compressors are able to maintain IAS header pressure such that the air pressure at the steam dumps is 10 psig below the IAS HDR PRESS LO alarm setpoint." *Changed as suggested.*

#### QUESTION # 61

- In the stem change 'PRM' to 'rad monitor' and remove the question mark at the end of the statement. *Changed as suggested.*
- In the distracters, change 'Vacuum Pump' to 'CARS Pump' *Changed as suggested.*

A portion of this question requires the student to identify a specific isotope for a particular rad monitor. The reference for this question is a Table in the student handout. However, the lesson objectives do not require this information. The Table in the student Handout that contains this information is reproduced from the UFSAR and is only used as a summary of rad monitor information in the lesson. The isotopic information is just for information. Based on this, requiring a student to know this isotopic information is beyond the scope of expected knowledge for an RO. Recommend the question be modified as follows: *Changed as suggested.*

RT-8027, Condenser Air Removal System rad monitor, monitors the CARS discharge \_\_\_\_\_ and provides \_\_\_\_\_ automatically when the HIGH Alarm setpoint is reached.

- a. directly to the atmosphere; audible alarm in the Control Room and closure of the CARS pump suction valves.
- b. directly to the atmosphere; audible alarm in the Control Room but no control function.
- c. to the Unit Vent Stack; audible alarm in the Control Room and closure of the CARS pump suction valves.
- d. to the Unit Vent Stack; audible alarm in the Control Room but no control function.

Correct answer is 'D'

#### QUESTION # 62

In distracters 'C' and 'D' either replace 'Loss of sample flow' with 'monitor failure' or add 'monitor failure' after 'Loss of sample flow' to use the terminology used in the reference and other plant documents (e.g. UFSAR). *Changed as suggested.*

#### QUESTION # 63

Capitalize 'inoperable' in the stem of the question *Changed as suggested.*

#### QUESTION # 64

- In each of the distracters change 'outfall structure' to 'Reservoir' *Changed as suggested.*
- Distracter 'C' reword to say "...piping directly into..." to ensure it's an incorrect answer. *Changed as suggested.*

#### QUESTION # 65

Distracter 'B' is also correct as a pre-discharge evacuation alarm does exist. This is discussed in the same reference cited for the question and has been substantiated by the Performance Testing group at the site. The purpose of this alarm is to forewarn personnel so they can evacuate the area. By design, the Halon concentration is expected to be breathable, but to be conservative for personnel safety, provisions have been made in the system design to allow for evacuation. As such, it should be considered 'not breathable'.

Recommend changing the wording of Distracters 'B' and 'D' to say "...effective and safer since it's absorbed in the surrounding atmosphere within a short period of time." *Changed as suggested.*

#### QUESTION # 66

- Change the wording in the stem from '...T<sub>hot</sub> of Loop 1 fails high...' to 'T<sub>hot</sub> output of Channel 1 fails high...' to clarify where the failure occurs (there are multiple T<sub>hot</sub> inputs for each loop). *Changed as suggested.*
- In distracters B, C, D change "L<sub>PZR</sub>" to "Pressurizer level" *Changed as suggested.*
- Distracter 'D': change 57 % to 55.4% (ref. 0POP04-RP-0002, Rev. 15, Addendum 1. *Changed as suggested.*

#### QUESTION # 67

Why is this question memory/fund knowledge and Question # 52 is not? *Both this question and #52 should be classified as Comprehension/Analysis. Both questions ask the applicant to do more than simply recall memorized information.*

#### QUESTION # 68

This is an SRO level question, as it has to do with how Tech Spec LCO's are administrated with regard to surveillance testing. In order to answer this question the student must know Tech Spec 4.0.3 from memory. This is beyond the scope of knowledge an RO is expected to have. This question was taken from the STP Exam Bank where it's classified as an SRO question. Recommend replacing with the following: *Changed as suggested.*

Maintenance has recently been completed on Low Head Safety Pump Injection (LHSI) Pump 1C. Surveillance Procedure 0PSP03-SI-0003, Low Head Safety Injection Pump 1C (2C) In-Service test, is scheduled to be performed for Post-Maintenance Testing on LHSI Pump 1C. Which ONE of the following correctly describes how this testing will be performed?

- a. Surveillance Procedure 0PSP03-SI-0003 must be performed in its entirety.
- b. Only the appropriate portions of Surveillance Procedure 0PSP03-SI-0003 need be performed. Sections not performed are NA'd.
- c. Only the appropriate portions of Surveillance Procedure 0PSP03-SI-0003 need be performed. Sections not performed are crossed out, initialed and dated.
- d. Only the appropriate portions of Surveillance Procedure 0PSP03-SI-0003 need be performed. Sections not performed are not included in the Post-Maintenance Test package.

Correct answer is 'B'  
Cog Level: memory/fund knowledge  
Ref: 0PSP03-SI-0003

#### QUESTION # 69

Distracter 'D' seems to have a larger font than the others do. *Changed as suggested.*

#### QUESTION # 70

Why is this question memory/fund knowledge and Question # 52 is not? *Both this question and #52 should be classified as Comprehension/Analysis. Both questions ask the applicant to do more than simply recall memorized information.*

#### QUESTION # 71

Distracter 'D' seems to have a larger font than the others do. *Changed as suggested.*

## QUESTION # 72

In the stem of the question, at the end of the statement "SGFP 12 trips due to a loss of lube oil..." add the following statement "The SUFP has automatically started". This is to clarify plant conditions as some distracters are RNO actions that could be correct depending on the # of feedpumps in service. *Changed as suggested.*

## QUESTION # 73

- In the stem the condition 'Average loop DT is 50% and stable' does not fit with Tavg increasing. Recommend deleting this condition as its unnecessary. *Changed as suggested.*
- In the stem the condition 'Turbine load is 655 MWe and stable' is not accurate for the power level. Simply say "Turbine load is stable" *Changed as suggested.*
- In the stem it's stated Tavg is 578 °F initially. If this is meant to be representative of the value at 50% power it should be 579.5 °F (ref. OPOP04-RP-0004, Rev. 16, Addendum 1). *Changed as suggested.*

## REPLY TO NRC COMMENTS ON QUESTION 7 and 15

### QUESTION # 7

Per STP's recommendation, the adverse containment condition of high RCB pressure was removed because it was not symptomatic of a SGTR. However, containment radiation dose and doserate values remain that are exceedingly high for a SGTR. Again, these would not be symptomatic of a SGTR and we recommend either removing them or stating 'normal' for these values. *Changed to reflect normal values.*

### QUESTION # 15

The NRC response seems to center around satisfying the KA. The KA states "Actions contained in the EOP for loss of instrument air." However, this question is asking about actions contained in an Off Normal procedure, not an EOP. Furthermore, the NRC response cites the first step in the procedure as being 'pivotal' and "the only step worth asking about in reference to the KA." Then stating the basis as the MSIV's drifting closed. Referencing OPOP04-IA-0001, Loss of Instrument Air, the basis for the first step relates to drifting of the Feedwater Heater Level control valves as they may affect reactor power. This would make Distracter 'C' most correct, but Distracter 'C' states '...prevent a power excursion...' which may or may not occur. The wording would be better if stated '... prevent a possible power excursion...'.

The following is a recommended replacement question that is based on EOP actions relating to a loss of Instrument Air: *Changed as suggested.*

Unit 1 has experienced a Reactor trip and Safety Injection. The crew is currently performing OPOP05-EO-EO10, Loss of Reactor or Secondary Coolant. Attempts to open the IA OCIV have failed. Which ONE of the below correctly describes the prescribed operator action and a component affected by a loss of Instrument Air to Containment?

	Required Action	Affected Component
A	Bypass the Instrument Air OCIV	Auxiliary Spray Valve
B	Bypass the Instrument Air OCIV	Charging Flow Control Valve
C	Open the Service Air OCIV	Auxiliary Spray Valve

D	Open the Service Air OCIV	Charging Flow Control Valve
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Correct answer is 'A'

# SRO QUESTION COMMENTS

## QUESTION # 1

- In all distracters the procedure # is referenced incorrectly. Instead of ‘0POP’ it should be ‘0POP05’
- In the stem of the question, rather than say ‘SGs B-D’, say ‘SGs B, C and D’

*Made recommended changes.*

## QUESTION # 2

This question appears on the draft RO exam (#49) and had the following comments:

- In the 4<sup>th</sup> bulleted item in the stem, change ‘function’ to ‘functioned’
- In the stem of the question, the following statement is made: "10 minutes later power is lost to 4160v ESF Bus E1A". Recommend changing this to "4160v ESF Bus E1A loses power". The 10 minutes stated has no bearing on the correct answer and can be confusing, as this is sufficient time for Addendum 5 to be completed.

*Need to do something with either the RO or SRO exam question.*

## QUESTION # 5

- Change "Reactor Trip Breakers 1B and 2B’ to ‘Train R and Train S Reactor Trip Breakers’
- This question requires the student to have detailed knowledge of the Tech Specs (action times) beyond the memory scope expected for an SRO. Appropriate Tech Spec references should be provided. Additionally, the stem of the question indicates that a ground on one cubicle affects both Reactor Trip breakers. This cannot occur since these circuits are electrically and physically independent. Recommend the stem be changed such that only 1 Reactor Trip breaker is affected. With this change the correct answer would be to restore the inoperable channel (trip breaker) to operable status or be in Hot Standby within 6 hrs.

*Will use original question and will modify. Which Bkr is affected? Train R or Train S? Supply the following references T/S 3.3.1 and T/S 3.0.1 – 3.0.5. Make a separate reference package. Do NOT attach references to specific questions.*

A suggested replacement question that would not need references is:

Unit 1 is operating at 100% power. All systems are in their normal control lineup for this power level. Given the following:

- CCP ‘A’ is in service
- CCP ‘A’ trips due to ground

Which ONE of the following correctly describes the electrical bus affected by the ground AND the expected operator action? Assume no other action is being taken except that one listed with it’s respective selection.

	Affected Electrical Bus	Expected Operator Action
A	4160 v ESF Bus 1A	Start CCP ‘B’
B	4160 v ESF Bus 1C	Enter TRM 3.1.2.4, Charging Pumps

C	4160 v ESF Bus 1A	Isolate Letdown
D	4160 v ESF Bus 1C	Adjust RCP Seal Injection to 8-13 gpm

Correct answer: 'B'

Cog Level: Comp/Analysis

KA: same as original question

#### QUESTION # 6

- The Tech Spec referenced should be 3.8.1.1.f, not 3.8.1.1.e
- In the stem it's stated '...DG 12 and 13 are tagged out for emergency maintenance. The remaining DG 13...'. The remaining DG should be DG 11.
- Per the conditions of the stem, the applicable Tech Spec would have already been entered since Tech Specs stipulate '2 or 3 of the required DGs inoperable...'. Recommend changing the stem so only 1 DG is inoperable. Then, a second could be declared inoperable due to low air receiver pressures. This change would also necessitate a change to Distracter 'C'. The wording would have to be changed from '...restore two diesel generators...' to 'restore both diesel generators...'
- This question requires the student to have detailed knowledge of the Tech Specs (action times) beyond the memory scope expected for an SRO. Appropriate Tech Spec references should be provided.
- Change Distracter 'D' because without both the entire Tech Specs and Technical Requirements Manual a student wouldn't be able to determine if a Tech Spec 3.0.3 situation exists. They would need to review equipment supplied by the ESF DG's to determine if losing the emergency power source capability renders them inoperable.

*Modified question per first 2 bulleted items. Changed the initial conditions so hopefully, asks the question I wanted to ask the first time. Supply T/S reference 3.8.1.1 as part of a package of reference material. Disagree with last bulleted item – the candidate should be able to determine that based on DG starting air receiver pressure, that DG is operable and no reason to go to 3.0.3.*

#### QUESTION # 7

- This question requires Tech Spec action information that is specific to both the system involved and the plant mode. Although it's expected an SRO would know Tech Spec entry conditions, it's not expected they would know action statements from memory. This question should have applicable Tech Spec references provided.
- The 150 ton chillers have been abandoned in place since this question was written. Now, there are only the 300 ton chillers in each train (12A, B, C for Unit 1). Based on this recommend this question be changed as follows:

Unit 1 is in Mode 6 with core alterations in progress.

- 
- Train 'C' Control Room HVAC has been tagged out for maintenance for the last eight days.
- 
- Train 'A' and 'B' Control Room HVAC are in the recirculation and makeup air filtration mode of operation.
-

- Essential Chiller 12B trips and cannot be restarted.

Based on this information, which ONE of the following describes acceptable actions to comply with Tech Specs?

- Suspend core alterations. Core alterations may be resume after Essential Chiller 12B is returned to service.
- Suspend core alterations. Core alterations may be resume after Control Room HVAC Train 'B' is secured and Control Room temperature remains  $\leq 78$  °F.
- Core alterations may continue. Re-verify that Train 'A' Control Room HVAC is in recirculation and makeup air filtration mode of operation.
- Core alterations may continue. Re-verify that Shutdown Margin meets Mode 6 requirements.

Correct answer is still 'A'

***Will supply T/S and made the recommended changes with the exception of Answer D. Changed this answer to read, "Core alterations may continue. Verify that Train "A" Control Room HVAC is capable of being powered from an operable emergency power source."***

QUESTION # 8

This question is no longer valid because information it's based on no longer exists in the referenced procedure. Recommend the following as a replacement:

Unit 1 is in a refueling outage. The following conditions exist:

- A spent fuel assembly is being raised from its position in the storage pool for return to the reactor.
- Gas bubbles are coming to the surface of the pool.
- Radiation levels at the Spent Fuel Pool are increasing

Which ONE of the following actions is required per OPOP04-FH-0001, Fuel Handling Accident?

- a. Notify the Control Room to sound the Containment Evacuation Alarm.
- b. Check CRE HVAC operating in Emergency Mode
- c. Secure ALL trains of FHB HVAC.
- d. Ensure the Containment Carbon Filter Trains are in service

Correct answer is 'B'

*Wrote a new question to be consistent with Proc FH-0001. Felt that Answer B was too deep in the procedure (Step 21) for the SROs to know this. Please check question.*

QUESTION # 9

This question requires Fire Protection system operability information that is specific to both the system volume requirements and specified action times. Although it's expected an SRO would know entry conditions, it's not expected they would know action statements/times from memory. This question should have applicable references provided or replaced with the following:

Which ONE of the following identifies the minimum operability requirements for the Fire Protection Water Supply System?

	Storage Tank volume gallons – each	Pumps	Pump capacity gpm
A.	200,000	1	2500
B.	250,000	2	2000
C.	300,000	2	2500
D.	350,000	1	2000

Correct answer: 'C'

Also, the Technical Reference has a typo. 'OPGP0S...' should be 'OPGP03...'

*Modified this question slightly, but essentially used this same format.*

QUESTION # 10

This question was drawn from the Requal Exam Bank and was developed as an open reference question. The relevant procedure has 9 RCP operating criteria that are checked when the procedure is first entered. It's not expected for an operator to memorize these conditions and their corresponding limits. Recommend the question be changed as follows:

Unit 2 is in Mode 2 at approximately 4% power when the RCP 2C NO 1 SEAL LKF FLOW HI/LO annunciator alarms. The Reactor Operator reports the following:

RCP 2A No 1 Seal Leakoff – 3.2 gpm

RCP 2C No 1 Seal Leakoff – >6.0 gpm

RCP 2B No 1 Seal Leakoff – 3.5 gpm

RCP 2D No 1 Seal Leakoff – 3.4 gpm

Based on the above, the Unit Supervisor should:

- a. Enter Procedure 0POP04-RC-0002, Reactor Coolant Pump Off Normal, and begin a reactor shutdown; isolate RCP 2C seal leakoff, then stop RCP 2C.
- b. Enter Procedure 0POP04-RC-0003, Excessive RCS Leakage, and begin a reactor shutdown, isolate RCP 2C seal leakoff, then stop RCP 2C.
- c. Enter Procedure 0POP04-RC-0002, Reactor Coolant Pump Off Normal, and trip the reactor, trip RCP 2C, then close RCP 2C seal leakoff isolation valve within 3 to 5 minutes.
- d. Enter Procedure 0POP04-RC-0003, Excessive RCS Leakage, and trip the reactor, trip RCP 2C, then close RCP 2C seal leakoff isolation valve within 3 to 5 minutes..

NOTE: In all distracters the time item was changed because procedural requirements for closing the seal leakoff valve is timed based on when the RCP is stopped, not when seal leakoff flow goes >6 gpm. Also, the word 'immediately' was removed from all distracters because it's not referenced in the procedure.

***Modified the question, but changed Distractors C and D.***

## QUESTION # 11

Recommend this question be replaced. Licensed operators and Initial License candidates are trained on this procedure, however they do not actively use it. Maintenance of active licenses is tracked by a computer system. Station expectations are that an individual will check his/her quals before assuming the watch. To do this, the individual will access the computer program. The maintenance requirements are incorporated into the logic of the computer program used such that the individual will see that they are qualified or not, but not the details behind the result. Operations personnel off-shift track watchstanding hours based on Control Room logs, thus the process is transparent to a typical operator except for checking quals. Recommended replacement:

Given the following:

- Unit 2 is in Mode 6.
- Core reload is in progress.

Which ONE of the following describes the permissible work schedule for an individual assigned to the Reactor Operator (RO) position on Unit 2? (Assume NO Tech Spec Overtime Exceedance Request.)

- a. Must receive at least 12 hours off after working a 16-hour shift.
- b. May work no more than 24 hours in a 48-hour period, excluding turnover time.
- c. May work no more than 14 hours straight, including turnover time.
- d. Must receive 2 consecutive days off after working 7 consecutive days.

Correct answer is 'B'

*Believe the question written as is, is ok. Even though the computer does the work, the operators should know the 10 CFR 55 requirement as well as what is required by the procedure. If I remember correctly, the computer system was implemented due to an error associated with a "memo." The computer requires accurate information input and if there was an input error, each SRO should know the requirement. Recommend leaving question as is.*

## QUESTION # 12

Containment Purge Permits no longer exist. Instead, a 'RCB Purge Notification Levels' form exists. Modifying the question accordingly, it would read as follows:

Unit 2 Containment Pressure is 0.4 psig and requires a purge. The following conditions exist:

- Mode 4
- Containment Rad Monitor RT-8011 is out of service.
- The 'RCB Purge Notification Levels' form has not been completed.

What is/are the action/s for the above plant conditions?

- a. Per Procedure 0POP02-HC-0003, Supplementary Containment Purge, a purge is allowed with Chemistry concurrence.
- b. Per Procedure 0POP02-HC-0003, Supplementary Containment Purge, conduct a Containment purge, then notify Chemistry to generate a RCB Purge Notification Levels form.
- c. Per Tech Spec 3.3.3.1, Radiation Monitoring for Plant Operations, obtain a RCB Purge Notification Levels form, then perform the purge.
- d. Per Tech Spec 3.3.3.1, Radiation Monitoring for Plant Operations, a Containment grab sample must be obtained and analyzed prior to performing a purge.

Correct answer is 'A'

*Made recommended changes.*

## QUESTION # 13

- This question is from the STP exam bank, but is keyed wrong. The correct answer is 'D'. Refer to 0POP01-ZA-0018, section 6.8
- The question explanation cites the wrong procedure. It should state 'Complete the step in progress in 0POP05-EO-FRZ1, Response to High Containment Pressure, then transition to...'

*Made recommended changes.*

#### QUESTION # 14

Disagree with answer. Per the bases for the Control Room Evac Emergency Classification Tables in 0ERP01-ZV-IN01 (pg. 100 of 104), the SAE classification is based on performance of step 12 specifically, not steps up to and including 12. The last statement of the bases says, "If the Emergency Director is not confident that adequate plant controls are functioning at the ASP, escalation to a Site Area Emergency is warranted." Step 12 transfers control of 'D' SG feed & steam controls to the ASP and is done at the ASP. This provides the ability to remove heat from the RCS which will enable operators to maintain Critical Safety Functions until other plant controls can be transferred.

The question can be left as is, but the correct answer should be 'B'. Additionally, the bases pages for the relevant Emergency Classification Tables should be included as they are necessary to evaluate the information provided.

Also, in the stem of the question, identify what steps 11 and 12 of 0POP04-ZO-0001 do.

Also, in the stem of the question, place a space between '1' and 'with'

*Agree with your assessment of the correct answer and will change answer key.*

#### QUESTION # 15

- In the stem, change '...step 16...' to '...step 17...'
- Distracter 'A': change 'concurrently' to 'at the same time'

*Made recommended changes.*

#### QUESTION # 16

- Distracter 'C' is correct. Per 0POP05-EO-EC00, Rev. 14, Addendum 4 does de-energize some 120 VAC non-1E loads (e.g. Reheat Control Panel). Recommend changing this distracter to 'Remain in 0POP05-EO-EC00 and per Addendum 4, lineup an E2A11 Battery Charger from the TSC Diesel Generator.'
- Answer 'D': change 'Attachment' to 'Addendum' to agree with procedural terminology.

*Made recommended changes.*

#### QUESTION # 17

- In the stem of the question change 'shift manager' to 'Shift Supervisor'
- In Distracters 'C' and 'D' recommend changing 'NRC Region IV' to 'NRC Site Resident' to make these more distinctive from 'NRC Operations Center' used in the other Distracters.

*Made recommended changes.*

#### QUESTION # 19

- The stem conditions are the same as that submitted for RO question # 56. Comments were made to change the stem of this question to make it more concise.
- This is an STP bank question that has been modified. The original has no correct answer based on the current revision of 0POP04-RS-0001 and the Tech Specs, thus this version doesn't either. Per 0POP04-RS-0001, Rev. 14, step 13 RNO, the correct response would be to commence a load reduction to place the unit in Hot Standby within 3 hr. Per Tech Specs, the plant must be in Hot Standby within 6 hr. Some of the information given is not representative for the power level and

some is not relevant (see comments on RO question # 56). Recommend changing this question as follows:

The following conditions exist on Unit 1:

Reactor power is 100%  
Control Bank 'D' position is 249 steps  
Rod Control is in automatic

A rapid load reduction is performed due to a feedwater system transient. Control Bank 'D' is now at 235 steps. The RO reports rods C8 and D4 in Control Bank 'D' have not moved from their original position. I&C is called to investigate and reports the stationary and moveable grippers and the lift coils are properly energized with the correct currents and in the proper sequence.

Which ONE of the following indicates the correct action to be taken by the Control Room Staff?

- a. Per procedure 0POP04-RS-0001, Control Rod Malfunction, trip the reactor and go to 0POP05-EO-EO00, Reactor Trip or Safety Injection.
- b. Per Tech Spec 3.1.3.1, Moveable Control Assemblies, trip the reactor and go to 0POP05-EO-EO00, Reactor Trip or Safety Injection.
- c. Per procedure 0POP04-RS-0001, Control Rod Malfunction, borate Control Bank 'D' outward until it is within 12 steps of rods C8 and D4.
- d. Per Tech Spec 3.1.3.1, Moveable Control Assemblies, Power Operation may continue providing the remainder of the rods are aligned to within 12 steps of the inoperable rods within 1 hr.

Correct Answer is 'A'

**Made recommended changes. Changed answer C to:** "Per Procedure 0POP04-RS-0001, "Control Rod Malfunction," commence a load reduction per Procedure 0POP03-ZG-0006, "Plant Shutdown from 100% to Hot Standby," to Mode 3."

#### QUESTION # 20

This question is based on required Tech Spec actions for the specified condition. The question comes from the requal exam bank that is an open-reference bank. As such, the applicable Tech Spec section should be provided with this question. Otherwise this question is beyond the scope of knowledge an SRO is expected to have from memory.

**Made recommended changes.**

#### QUESTION # 23

Change Distracter 'D' to read 'Vice President of Generation' to agree with current station titles.

**Made recommended changes.**

#### QUESTION # 24

- In the stem of the question, at the end of the last sentence, add '...but will be returned to it's original design once the valve is repaired in the outage.'
- In Distracter 'A', add 'be' in between 'will' and 'service'

- In the stem of the question, ‘backleakage’ is misspelled.

*Made recommended changes.*

#### QUESTION # 25

This question is taken from the requal exam bank which is an open-reference bank. For the student to answer this question from memory he/she would have to know the details of the appropriate Off-normal procedure and Tech Specs to a level beyond that normally required of an SRO (e.g. one distracter entails loss of a specific load which is not memory information for these low voltage panels, two other distracters entail actions with specified times which are not memory information). Other issues are:

- The keyed answer is a partial truth as the requirement to re-energize the bus within 2 hr. is a Tech Spec requirement, not one in OPOP04-VA-0001.
- The ‘AC Bus DP 1202 UV’ alarm cited in the stem is Bistable Monitoring Panel alarm which does not have an alarm response. The appropriate Control Room Annunciator would be 120 VAC CH II DIST PNL 1202 TRBL.

Recommend changing the question as follows:

Unit 1 is operating at 100% power when 120 VAC Distribution Panel DP-1202 becomes de-energized. The plant remains at 100% power with the following annunciators alarming (in addition to others) due to failed instrumentation:

- OT DT RX PRETRP
- PRZR LVL LO B/U HTRS OFF LETDN ISOL
- SG 1C LEVEL DEV HI/LO
- T AVG/AUCT T AVG DEV

Based on the information provided, which of the following should be the FIRST action taken?

- a. Immediately trip the reactor and enter OPOP05-EO-EO00, Reactor Trip or Safety Injection since the plant should have tripped due to loss of DP-1202.
- b. Enter OPOP04-FW-0001, Loss of Steam Generator Level Control, to stabilize SG levels to prevent an unnecessary Reactor Trip on SG level.
- c. Enter OPOP04-CV-0004, Loss of Normal Letdown, to establish Excess Letdown to prevent an unnecessary Reactor Trip on Pressurizer Level.
- d. Enter OPOP04-RP-0004, Failure of RCS Loop RTD Protection, to stabilize RCS temperature to prevent an unnecessary Reactor Trip on OPDT.

Correct answer: ‘B’

*Made recommended changes.*