

From: Harry Balian
To: Richard J Brooks
Date: 02-Nov-05 2:08:19 PM
Subject: !!!!!!!!!!!!!!! THINK EXAM SECURITY PLEASE !!!!!!!!!!!!!!!
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This is our third submission for the December 2005 ILO exam. These are 25 questions of a 75 question RO exam and a 100 question SRO exam. The 25 questions submitted hereunder are all considered SRO level examination questions. Questions 1 through 75 were previously submitted to SSES.

Your technical assistance is specifically required to ensure questions 90, 91, 93, 96, and 97 are appropriate.

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!!!!!!!!!!!!!! THINK EXAM SECURITY PLEASE !!!!!!!!!!!!!!!

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Subject: !!!!!!!!!!!!!!! **THINK EXAM SECURITY PLEASE !!!!!!!!!!!!!!!**

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From: Harry Balian

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Recipients	Action	Date & Time
nrc.gov kp1_po.KP_DO PM	Delivered	02-Nov-05 2:08:19
CJB1 CC (Cynthia Bixler) PM	Opened	02-Nov-05 2:08:32
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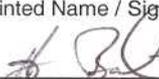
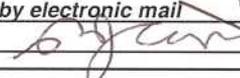
Files	Size	Date & Time
MESSAGE	2152	02-Nov-05 2:08:19 PM
ES-401-4.pdf	100544	02-Nov-05 1:53:40 PM
ES-401-6.pdf	230513	02-Nov-05 1:48:22 PM
SRO_ES-401-1.pdf	163890	02-Nov-05 1:52:38 PM
SRO_76-100.pdf	227919	02-Nov-05 2:05:44 PM

Options

Auto Delete: No
Expiration Date: None
Notify Recipients: Yes
Priority: Standard
Reply Requested: No
Return Notification: None

Concealed Subject: No
Security: Standard

To Be Delivered: Immediate
Status Tracking: All Information

Facility: Susquehanna Steam Electric Station				Date of Exam: 12 December 2005		Exam Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>		
Item Description				Initial				
				a	b*	c#		
1. Questions and answers are technically accurate and applicable to the facility.				HB	N/A	THF		
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.				HB	N/A	THF		
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401				HB	N/A	THF		
4. The sampling process was random and systematic (if more than 4 RO and 2 SRO questions are repeated from the last 2 NRC licensing exams, consult with NRR OL program office.)				2 RO repeats		THF		
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input checked="" type="checkbox"/> the audit exam was systematically and randomly developed; or <input type="checkbox"/> the audit exam was completed before the license exam was started; or <input checked="" type="checkbox"/> the examinations were developed independently; or <input type="checkbox"/> the licensee certifies that there is no duplication; or <input type="checkbox"/> other (explain)				HB	N/A	THF		
6. Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.		Bank	Modified	New	HB	N/A	THF	
		10	6	9				
7. Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.		Memory		C/A	HB	N/A	THF	
		4		21				
8. References/handouts provided do not give away answers or aid in the elimination of distractors.				HB	N/A	THF		
9. Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.				HB	N/A	THF		
10. Question psychometric quality and format meet the guidelines in ES Appendix B.				HB	N/A	THF		
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with the value on the cover sheet.				HB	N/A	THF		
				Printed Name / Signature		Date		
a. Author		Harry Balian / 				2 Nov 05		
b. Facility Reviewer (*)		* not applicable				n/a		
c. NRC Chief Examiner (#)		Todd H. Fish / //s// by electronic mail 				2 Nov 05		
d. NRC Regional Supervisor		Richard J. Conte / 				2 Nov 05		
Note: * The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.								

This is our third submission for the December 2005 ILO exam. These are 25 questions of a 75 question RO exam and a 100 question SRO exam. The 25 questions submitted hereunder are all considered SRO level examination questions. Questions 1 through 75 were previously submitted to SSES.

Your technical assistance is specifically required to ensure questions 90, 91, 93, 96, and 97 are appropriate.

Previous Susquehanna Exam questions

August 2002: None
August 2003: None

December 2003: None
August 2004: None

Tier / Group	Randomly Selected K/A	Reason for Rejection
	N/A	As per letter PLA005439 PLA14-13 from Jeff Helsel (PPL) to Alan Blamey (NRC) dated Feb. 4 th 2002 all K/As that are not applicable to SSES design were suppressed. A copy of this letter and the specific K/As involved is available upon request.
RO Tier 1 / Group 1	295004.2.2.1	Generic K/A to perform plant pre-startup or startup activities that could affect reactivity during a partial or full loss of DC power. This is not a reasonably foreseeable situation. Randomly selected 295004.2.2.5.
	295004.2.2.5	Generic K/A to demonstrate knowledge of making changes to the facility as described in the FSAR during a partial or full loss of DC power. These are unrelated such that writing an exam item that matches the K/A is probably not useful. Randomly selected 294004.2.2.6.
	295004.2.2.6	Generic K/A to demonstrate knowledge of making changes to the procedures as described in the FSAR during a partial or full loss of DC power. These are unrelated such that writing an exam item that matches the K/A is probably not useful. Randomly selected 294004.2.2.11.
	295004.2.2.11	Generic K/A to demonstrate knowledge of controlling temporary changes during a partial or full loss of DC power. These are unrelated such that writing an exam item that matches the K/A is probably not useful. Randomly selected 294004.2.2.30.
	295037.2.2.24	Generic K/A to demonstrate knowledge or ability during an ATWS while analyzing the affect of maintenance activities on LCO status. These are unrelated such that writing an exam item that matches the K/A is probably not useful. Randomly selected 295037.2.2.8.
	295037.2.2.8	Generic K/A to demonstrate knowledge or ability during an ATWS while determining if a proposed change, test, or experiment involves an un-reviewed safety question. These are unrelated such that writing an exam item that matches the K/A is probably not useful. Randomly selected 295037.2.2.2.
Question 21		Generic K/A to make accurate, clear and concise <u>verbal</u> reports. A written examination is not the optimum forum for testing this ability. Randomly selected 295008.2.2.20.
RO Tier 1 / Group 2		
295008.2.1.17		
Question 66		Generic K/A to operate the plant phone, paging system and two-way radio. A written examination is not the optimum forum for testing this ability. Randomly selected 2.1.21.
RO Tier 3		
2.1.16		

SRO Tier 1 / Group 1	Question 81	295030.2.2.32	EPE K/A concerning Low Suppression Pool Water Level and Generic K/A concerning effects of alteration on core configuration. These are unrelated topics such that writing an exam item that matches the K/A is probably not useful. Randomly selected 295030.2.2.33.
		295030.2.2.33	EPE K/A concerning Low Suppression Pool Water Level and Generic K/A concerning knowledge of control rod programming. These are unrelated topics such that writing an exam item that matches the K/A is probably not useful. Randomly selected 295030.2.2.4.
		295030.2.2.4	EPE K/A concerning Low Suppression Pool Water Level and Generic K/A concerning differences between units. According to Susquehanna Training Department, there are insignificant differences between the units. Therefore, it probably not possible to develop a meaningful exam item. Randomly selected 295030.2.2.25.
<p>The K/As above were rejected during written exam outline development. New K/As were selected using a random number generator available at http://www.random.org. K/As were selected from the same tier, group and "E/APE #/Name/Safety Function" to maintain outline fidelity to the maximum extent possible.</p>			
<p>Per telephone conversation with Susquehanna Steam Electric Station staff on Tuesday, 2 August 2005, the following corrections were made to the exam outline:</p> <ul style="list-style-type: none"> • RO Tier 1/Group 1, 295037.2.2.24 – as noted above, this K/A was replaced during sample selection. However, the original, deselected K/A was not replaced in the exam outline. Question 18. • RO Tier 2/Group 1, 205000.K2.02 – deleted "3.4-42" because this was a page number carried over from the original cut-n- paste from the K/A catalog. Corrected the K/A to read "Motor operated valves". Question 29. • RO Tier 2/Group 2, 201004.A3.05 – deleted "3.7-33" because this was a page number carried over from the original cut-n- paste from the K/A catalog. Question 56. • SRO Tier 1/Group 1, 295037.2.4.11 - deleted "4.1-24" because this was a page number carried over from the original cut-n-paste from the K/A catalog. Question 82. • SRO Tier 1/Group 2, 295035.EA2.02 – deleted "4.1-22" because this was a page number carried over from the original cut-n-paste from the K/A catalog. Question 85. • This form, 295008.2.2.17 – corrected the table above to correctly indicate that this K/A was sampled and rejected under RO Tier 1/Group 2 vice RO Tier 1/Group 1 as originally shown. Question 21. <p>Also found and corrected two K/As that were incorrectly copied from the original random sample generator to the examination outline:</p> <ul style="list-style-type: none"> • RO Tier 2/Group 1, 203000.K3.03 – Corrected the K/A to refer to RHR/LPCI. Question 28. • RO Tier 2/Group 1, 205000.K2.02 – Corrected the K/A to read "Motor operated valves". Question 29. 			
Question 44	<p>Changed "HIGH PRESSURE COOLANT INJECTION SYSTEM" to "REACTOR WATER LEVEL CONTROL SYSTEM". Changed "Suppression pool level control" to "Rod worth minimizer". This corrects typographical errors in the original outline that were incorrectly copied from the original random</p>		
RO Tier 2 / Group 1			

	259002.K3.03	sample generator to the examination outline. 15 September 2005
RO Tier 2 / Group 1	Question 45	Changed "Suppression pool level" to "TDRFP lockout reset: TDRFP". This corrects a typographical error in the original outline that was incorrectly copied from the original random sample generator to the examination outline.
	259002.A4.09	
	Question 46	Changed "MSIV LEAKAGE CONTROL SYSTEM" to "STANDY GAS TREATMENT SYSTEM". Changed "Main steam system: BWR-4,5,6(P-Spec)" to "Reactor building ventilation system". This corrects typographical errors in the original outline that were incorrectly copied from the original random sample generator to the examination outline.
	261000.K1.01	
	Question 47	Rejected K/A as too simplistic (GFE level knowledge). Unable to develop a discriminatory examination question. Used http://www.random.org to select another K/A from the 262001.A2 series. Selected 262001A2.03.
	262001.A2.08	
RO Tier 2 / Group 2	Question 59	Changed "K3. Knowledge of the effect that a loss or malfunction of the CONTROL ROD DRIVE HYDRAULIC SYSTEM will have on following: K3.01 Recirculation pumps: Plant-Specific" to "K3. Knowledge of the effect that a loss or malfunction of the RECIRCULATION FLOW CONTROL SYSTEM will have on following: K3.01 Core flow". This corrects a typographical error in the original outline that was incorrectly copied from the original random sample generator to the examination outline.
	202002.K3.01	
	Question 64	This K/A was rejected from the August 2004 ILO exam with the following statement: "This K/A is not directly applicable to Susquehanna and parallels system 241000 K/As. Susquehanna has no direct reheater controls, and reactor pressure is controlled by EHC (system 241 000)." Therefore, this K/A is rejected from this ILO exam as well. Used http://www.random.org to select another K/A from the 239001.A1 series. Selected 239001.A1.06.
	239001.A1.01	
Question 64	Rejected 239001.A1.06 because Susquehanna Steam Electric Station (SSES) does NOT have air ejector radiation monitors. Air Ejector effluent is directed to the Offgas processing system. Offgas effluent is monitored for radiation. However, this is too far removed from the Air Ejector system to justify a K/A	

	239001.A1.06	<p>match.</p> <p>Used http://www.random.org to select another K/A from the 239001.A1 series. Selected 239001.A1.10.</p> <p>22 September 2005</p>
Question 34		Rejected 211000.2.1.2 during Chief Examiner review because unable to develop question with LOD greater than 1.0.
RO Tier 2 / Group 1		Used http://www.random.org to select another K/A from the 211000.2.1 series. Selected 211000.2.1.33.
211000.2.1.2		30 September 2005
Question 47		Rejected 262001.A2.03 during Branch Chief review because unable to develop RO level question that meets this K/A. The requirement to “. . . use procedures to correct, control, or mitigate . . .” is an SRO level task.
RO Tier 2 / Group 1		Used http://www.random.org to select another K/A from the 262001.A2 series. Selected 262001.A2.05.
262001.A2.03		3 October 2005
Question 88		Rejected 262002.A2.02 because Uninterruptible Power Supplies were sampled and tested at the RO level (Question 48).
SRO Tier 2 / Group 1		Substituted the question originally developed for 262001.A2.03 in place for 262002.A2.02. This substitutes one A2 K/A for another A2 K/A; thereby preserving the breadth and diversity of the original sample plan.
262002.A2.02		5 October 2005.
Question 92		Rejected 216000.2.4.27 because I was unable to develop a plausible and discriminatory question after over eight hours of effort.
SRO Tier 2 / Group 1		Used http://www.random.org to select another K/A from the 216000.2. series (two random draws: first for the 4, second for the 22). Selected 216000.2.2.22.
216000.2.4.27		12 October 2005
Question 13		Rejected 295025.EA2.02 because during review it was determined to be similar to 295006.AA2.04 and because development of a suitable question proved difficult.
RO Tier 1 / Group 1		Used http://www.random.org to select another K/A from the 295025.EA2 series. Selected 295025.EA2.03
295025.EA2.02		17 October 2005
Question 14		Rejected 295026.EK1.01 because during review it was determined high Suppression Pool water temperature and Pump NPSH was not a limiting concern at SSES. Therefore, SSES advised that recommendations on this K/A would have little relevance.
RO Tier 1 / Group 1		Selected 295026.EK1.02 directly because there are only two K/As under the

295026.EK1.01	295026.EK1 series. 17 October 2005
Question 21	Rejected because this was incorrectly copied from original sample. See, 295008.2.1.17 above. This should have been 295008.2.1.20. 17 October 2005
RO Tier 1 / Group 1	
295008.2.2.20	
Question 51	Unable to adequately test both ability to predict and use procedures of this two part K/A. Per authority of NUREG 1021, ES401, Section D.2.a., second paragraph [<i>When selecting or writing questions for K/As that test coupled knowledge or abilities (e.g., the A.2 K/A statements in Tiers 1 and 2 and a number of generic K/A statements, such as 2.4.1, in Tier 3), try to test both aspects of the K/A statement. If that is not possible without expending an inordinate amount of resources, limit the scope of the question to that aspect of the K/A statement requiring the highest cognitive level (e.g., the (b) portion of the A.2 K/A statements) or substitute another randomly selected K/A.</i>], the test question tests the ability to predict the impact of an air dryer malfunction. 18 October 2005.
RO Tier 2 / Group 1	
300000.A2.01	
Question 53	Unable to adequately test both ability to predict and use procedures of this two part K/A. Per authority of NUREG 1021, ES401, Section D.2.a., second paragraph [<i>When selecting or writing questions for K/As that test coupled knowledge or abilities (e.g., the A.2 K/A statements in Tiers 1 and 2 and a number of generic K/A statements, such as 2.4.1, in Tier 3), try to test both aspects of the K/A statement. If that is not possible without expending an inordinate amount of resources, limit the scope of the question to that aspect of the K/A statement requiring the highest cognitive level (e.g., the (b) portion of the A.2 K/A statements) or substitute another randomly selected K/A.</i>], the test question tests the ability to predict the impact of an air dryer malfunction. 18 October 2005.
RO Tier 2 / Group 1	
400000.A2.02	
Question 57	This K/A requires a nexus between the RWM and refueling administrative requirements. The ROD TEST function is the only nexus I can find. Specifically, the RWM Bypass Keylock switch is ADMINISTRATIVELY prohibited under the conditions of the question. Therefore, this question is submitted as an adequate K/A match pursuant to the authority of of NUREG 1021, ES401, Section D.2.a., second paragraph [<i>When selecting or writing questions for K/As that test coupled knowledge or abilities (e.g., the A.2 K/A statements in Tiers 1 and 2 and a number of generic K/A statements, such as 2.4.1, in Tier 3), try to test both aspects of the K/A statement. If that is not possible without expending an inordinate amount of resources, limit the scope of the question to that aspect of the K/A statement requiring the highest cognitive level (e.g., the (b) portion of the A.2 K/A statements) or substitute another randomly selected K/A.</i>]. 18 October 2005
RO Tier 2 / Group 2	
201006.2.2.26	

Question 63	<p>Unable to adequately test both ability to predict and use procedures of this two part K/A. Per authority of NUREG 1021, ES401, Section D.2.a., second paragraph [<i>When selecting or writing questions for K/As that test coupled knowledge or abilities (e.g., the A.2 K/A statements in Tiers 1 and 2 and a number of generic K/A statements, such as 2.4.1, in Tier 3), try to test both aspects of the K/A statement. If that is not possible without expending an inordinate amount of resources, limit the scope of the question to that aspect of the K/A statement requiring the highest cognitive level (e.g., the (b) portion of the A.2 K/A statements) or substitute another randomly selected K/A.</i>], the test question tests the ability to predict the impact of an air dryer malfunction.</p> <p>18 October 2005.</p>
RO Tier 2 / Group 2	
226001.A2.03	
Question 100	<p>Rejected Gen.2.4.10 because I was unable to develop an SRO level question with Level of Difficulty greater than 1 and less than 5 based on knowledge of annunciator response procedures.</p> <p>Used http://www.random.org to select another K/A from the Gen2.4.10 series. Selected Gen.2.4.11.</p> <p>31 October 2005</p>
SRO Tier 3	
Generic 2.4.10	

Facility: Susquehanna Steam Electric Station

Date of Exam: 12 to 22 December 2005

Tier	Group	RO K/A Category Points												SRO-ONLY Points								
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	TOTAL	K	A	A2	G*	TOTAL				
1. Emergency & Abnormal Plant Evolutions	1													20			4	3	7			
	2													7			2	1	3			
	Tier Totals													27			6	4	10			
2. Plant Systems	1													26			3	2	5			
	2													12	0	1	1	1	3			
	Tier Totals													38	0	1	4	3	8			
3. Generic Knowledge and Abilities Categories		1				2				3				4				1	2	3	4	7
																		2	2	2	1	

- Note:
1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO outline (i.e., the "Tier Totals" in each K/A category shall not be less than two). Refer to Section D.1.c for additional guidance regarding SRO sampling.
 2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
 3. Select topics from many systems and evolutions; avoid selecting more than two K/A topics from a given system or evolution unless they relate to plant-specific priorities.
 4. Systems/evolutions within each group are identified on the associated outline.
 5. The shaded areas are not applicable to the category/tier.
 6. * The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. The SRO K/As must also be linked to 10 CFR 55.43 or an SRO-level learning objective.
 7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the applicable license level, and the point totals for each system and category. Enter the group and tier totals for each category in the table above; summarize all the SRO-only knowledge and non-A2 ability categories in the columns labeled "K" and "A." Use duplicate pages for RO and SRO-only exams.
 8. For Tier 3, enter the K/A numbers, descriptions, importance ratings, and point totals on Form ES-401-3.
 9. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 (SRO)

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
Question 76 295003 Partial or Complete Loss of A.C. Power						X	AA2. Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER : AA2.02 Reactor power / pressure / and level	4.3*	1
Question 77 295006 SCRAM						X	AA2. Ability to determine and/or interpret the following as they apply to SCRAM : AA2.06 Cause of reactor SCRAM	3.8	1
Question 78 295016 Control Room Abandonment						X	2.4.22 Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.	4.0	1
Question 79 295023 Refueling Accidents						X	AA2. Ability to determine and/or interpret the following as they apply to REFUELING ACCIDENTS: AA2.05 †Entry conditions of emergency plan	4.6*	1
Question 80 295028 High Drywell Temperature						X	EA2. Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE : EA2.04 Drywell pressure.	4.2	1
Question 81 295030 Low Suppression Pool Water Level						X	2.2.25 Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.8	1
Question 82 295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or unknown						X	2.4.11 Knowledge of abnormal condition procedures.	3.6	1
K/A Category Totals:					4	3	Group Point Total:	7	

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 (SRO)

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
Question 83 295002 Loss of Main Condenser Vacuum						X	AA2. Ability to determine and/or interpret the following as they apply to LOSS OF MAIN CONDENSER VACUUM : AA2.01 Condenser vacuum/absolute pressure	3.1	1
Question 84 295017 High Off-Site Release Rate						X	2.4.6 Knowledge symptom based EOP mitigation strategies.	4.0	1
Question 85 295035 Secondary Containment High Differential Pressure						X	EA2. Ability to determine and/or interpret the following as they apply to SECONDARY CONTAINMENT HIGH DIFFERENTIAL EA2.02 †Off-site release rate: Plant-Specific	4.1	1
K/A Category Point Totals:					2	1	Group Point Total:	3	

Plant Systems - Tier 2 / Group 1 (SRO)

System #	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
Question 86 215004 Source Range Monitor System								X				A2. Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.02 SRM inop condition	3.7	1
Question 87 261000 Standby Gas Treatment System								X				A2. Ability to (a) predict the impacts of the following on the STANDBY GAS TREATMENT SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.13 High secondary containment ventilation exhaust radiation	3.7	1
Question 88 262001 A.C. Electrical Distribution								X				A2. Ability to (a) predict the impacts of the following on the A.C. ELECTRICAL DISTRIBUTION; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.03 Loss of off-site power.	4.3	1
Question 89 263000 D.C. Electrical Distribution											X	2.4.5 Knowledge of the organization of the operating procedures network for normal / abnormal / and emergency evolutions.	3.6	1
Question 90 264000 Emergency Generators (Diesel/Jet)											X	2.1.32 Ability to explain and apply system limits and precautions.	3.8	1
K/A Category Point Totals:								3			2	Group Point Total:	5	

Plant Systems - Tier 2 / Group 2 (SRO)

System #	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
Question 91 215002 Rod Block Monitor System								X				A2. Ability to (a) predict the impacts of the following on the ROD BLOCK MONITOR SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.03 Loss of associated reference APRM channel: BWR-3,4,5	3.3	1
Question 92 216000 Nuclear Boiler Instrumentation											X	2.2.22 Knowledge of limiting conditions for operations and safety limits.	3.4	1
Question 93 234000 Fuel Handling									X			A3. Ability to monitor automatic operations of the FUEL HANDLING EQUIPMENT including: A3.01 †Crane/refuel bridge movement: Plant-Specific .	3.6	1
K/A Category Point Totals:												Group Point Total:		3

Facility: Susquehanna Steam Electric StationDate of Exam: 12 to 22 December 2005

Category	<u>Question</u>	K/A#	Topic	RO		SRO Only	
				IR	#	IR	#
Conduct of Operations	<u>94</u>	2.1.7	Ability to evaluate plant performance and make operational judgments based on operating characteristics / reactor behavior / and instrument interpretation.			4.4	1
	<u>95</u>	2.1.12	Ability to apply technical specifications for a system.			4.0	1
	Subtotal						2
Equipment Control	<u>96</u>	2.2.7	Knowledge of the process for conducting tests or experiments not described in the safety analysis report.			3.2	1
	<u>97</u>	2.2.19	Knowledge of maintenance work order requirements			3.1	1
	Subtotal						2
Radiation Control	<u>98</u>	2.3.6	Knowledge of the requirements for reviewing and approving release permits.			3.1	1
	<u>99</u>	2.3.9	Knowledge of the process for performing a containment purge.			3.4	1
	Subtotal						2
Emergency Procedures / Plan	<u>100</u>	2.4.11	Knowledge of abnormal condition procedures.			3.6	1
	Subtotal						1
Tier 3 Point Total							7

Question Number: 76

76

RO

SRO

Question ID: 29708 Origin: Mod

Memory Level

Following a STATION BLACKOUT, which one of the following describes SSES's coping strategy and the instrumentation available to monitor the plant?

- A** RPV pressure is reduced by opening up to THREE SRVs at a time.
RCIC operates to control RPV level & supplement depressurization.
HPCI is SECURED to minimize DC electrical loads.
SPOTMOS & Accident Monitoring Instrumentation (purple ID labels) REMAIN energized.
- B** RPV pressure is reduced by opening ONE SRV at a time.
RCIC operates to control RPV level & supplement depressurization.
HPCI operates to control RPV level and supplement depressurization.
SPOTMOS & Accident Monitoring Instrumentation (purple ID labels) REMAIN energized.
- C** RPV pressure is reduced by opening ONE SRV at a time.
RCIC operates to control RPV level & supplement depressurization.
HPCI operates in CST-to-CST full flow test mode to supplement depressurization.
SPOTMOS & Accident Monitoring Instrumentation (purple ID labels) are MANUALLY reenergized.
- D** RPV pressure is reduced by opening up to THREE SRVs at a time.
RCIC operates in CST-to-CST full flow test mode to supplement depressurization.
HPCI operates to control RPV level & supplement depressurization.
SPOTMOS & Accident Monitoring Instrumentation (purple ID labels) are MANUALLY reenergized.

Question Number: 76

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - NO

WRONG: EO-000-102, RC/P-6 allows opening of only one SRV. SPOTMOS and Acc Mon Inst must be manually reenergized with HSE switches. HPCI is not secured.

VALID DISTRACTOR: All other conditions are correct.

CHOICE (B) - NO

WRONG: HPCI operation would flood the RPV and cause HPCI & RCIC turbines to trip. SRMs remain energized continuously from 24-VDC

VALID DISTRACTOR: All other conditions are correct.

CHOICE (C) - YES

CHOICE (D) - NO

WRONG: EO-000-102, RC/P-6 allows opening of only one SRV. EO-100/200-030 uses RCIC for Inventory and puts HPCI in CST-to-CST mode.

VALID DISTRACTOR: All other conditions are correct.

References

SSES Bank Question

EO-100-003

TM-OP-017

EO-000-102

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Gil 10/16/05 - Did not see SRM operation or SPOTMOS in references.

R: SRM operation is protected DC power. SPOTMOS is Suppression Pool Temperature Monitoring System. Could not confirm technical detail.

NRC K/A System/E/A

System 2950 Partial or Complete Loss of A.C. Power
03

Number AA2.02 **RO** 4.2 **SRO** 4.3 **CFR Link** (CFR: 41.10 / 43.5 / 45.13)

Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER : Reactor power / pressure / and level

NRC K/A Generic

System

Number

RO

SRO

CFR Link

Question Number: 77

77

RO

SRO

Question ID: 29652 Origin: Mod

Memory Level

Both units are operating at 90% of full rated power. SSES Unit 2 Main Steam Isolation Valves (MSIV) on the "D" steam line (B21-F022D and B21-F028D) inadvertently close. All systems, structures and components (SSC) operate as expected.

Which ONE of the following

- (1) correctly describes the plant response and
- (2) the required Operator response?

- A** (1) The reactor MAY scram on APRM high flux or Main Steam line high flow.
(2) Reduce power per GO-200-012, POWER MANEUVERS.
- B** (1) The reactor MAY scram on RPV low level or Main Steam line high flow.
(2) Recover the plant per ON-284-001, MAIN STEAM LINE ISOLATION AND QUICK RECOVERY
- C** (1) The reactor WILL scram on APRM high flux or RPV high pressure.
(2) Enter EO-200-102, RPV CONTROL.
- D** (1) The reactor WILL scram on MSIV closure or RPV low level.
(2) Perform ON-200-100, SCRAM, SCRAM INNIMENT.

Question Number: 77

Answers:

A

B

C

D

References Provided to Applicant:

Justification

Question is slightly modified to include whether the scram is possible or certain.

CHOICE (A) - NO

WRONG: The reactor WILL scram but not on MSL high flow (MSL high flow may cause other MSIVs to close though - not a direct cause)

VALID DISTRACTOR: Rx will scram, high APRM flux is correct, MSIVs may close (indirectly causing scram on MSIV closure)

CHOICE (B) - NO

WRONG: The Rx WILL scram but NOT on low level or high MSL flow.

VALID DISTRACTOR: Scram, high MSL flow may close all MSIVs, Pressure rise will shrink level.

CHOICE (C) - Yes

CHOICE (D) - NO

WRONG: Rx scram is not directly caused by MSIV closure and not expected on low level.

VALID DISTRACTOR: WILL scram, MSIV closure may happen and indirectly cause scram. Level will shrink.

References

SSES Bank

FSAR 15.2.4.1.2.2 and 15.2.4.4.2

TS Basis 3.3.1.1

Comments and Question Modification History

CXJ

THF

RJC

SSES

10 CFR 55.43 (b) (5) & (6)

Gil 10/16/05 - Appears to be a system-level question, not SRO level. "D" may also be correct if MSIVs close at 133% flow or less. If this is the case, may "fix" by having power 90%

R - reduced initial power to 90%.

Rich/Todd 10/31/05 - system level RO question.

R - added procedural requirement to question to adhere to 10 CFR 55.43 (b)(5)

NRC K/A System/E/A

System 2950 SCRAM
06

Number AA2.06

RO 3.5

SRO 3.8

CFR Link (CFR: 41.10 / 43.5 / 45.13)

Ability to determine and/or interpret the following as they apply to SCRAM : Cause of reactor SCRAM

NRC K/A Generic

System

Number

RO

SRO

CFR Link

Question Number: 78

78

RO

SRO

Question ID: 29653 Origin: New

Memory Level

The control room has been evacuated and, as Unit Supervisor, you are directing SSES Unit 2 operations from the Remote Shutdown Panel. The following conditions exist:

- Suppression Pool temperature is 96 degrees Fahrenheit and steady.
- Residual Heat Removal (RHR) pump 2P202A is running
- RHR is operating in the Suppression Pool Cooling (SPC) and Suppression Pool Spray (SPS) mode.
- The Drywell is being vented through the Standby Gas Treatment System (SGTS).
- Drywell Pressure is 1.7 psig and lowering.
- Reactor Pressure Vessel (RPV) pressure is 90 psig and slowly lowering.
- Reactor Pressure Vessel (RPV) water level is 60 inches and rising.
- You have directed the PCO to establish RPV water level above 90 inches and below 100 inches.

Which ONE of the following correctly describes your priorities?

- A** Reconfigure RHR loop "A" to the Drywell Spray mode.
- B** Maintain Suppression Pool Cooling and Spray using either RHR loop.
- C** Reconfigure RHR loop "A" to the Shutdown Cooling mode using RHR pump 2P202A only.
- D** Locally start RHR pump 2P202C and use RHR loop "A" to provide SPC, SPS & Shutdown Cooling concurrently.

Question Number: 78

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - NO

WRONG: Drywell spray is not necessary because DW pressure is lowering via SGTS

VALID DISTRACTOR: PC/P-7 requires DW spray if needed to reduce DW press and if RHR not needed for core cooling.

CHOICE (B) - YES

EO-200-113 takes precedence over ON-200-009. SP/T-2 requires that RHR be used to maintain SP temps below 90.

ON-200-009 directs user to align RHR for SDC. The EOP has priority over the ON.

CHOICE (C) - NO

WRONG: EO-200-113 takes precedence over ON-200-009. SP/T-2 requires that RHR be used to maintain SP temps below 90. ON-200-009 directs user to align RHR for SDC. The EOP has priority over the ON.

VALID DISTRACTOR: ON-200-009 directs the user to establish SDC.

CHOICE (D) - NO

WRONG: Not possible because even with operation shifted to RSD, F004A and F006A are interlocked to prevent concurrent opening. Also, this would cross-connect the RPV with the SP through the RHR suction lines. Consequently, there is no procedure that directs this activity.

VALID DISTRACTOR: Plausible if the Applicant sees the conflict between establishing SDC and maintaining SPC/SPS but forgets the design of the RHR system.

References

EO-100-113

ON-100-009

TM-OP-049

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Gil 10/16/05 - none

NRC K/A System/E/A

System 2950
16

Number RO SRO CFR Link

NRC K/A Generic

System 2.4 Emergency Procedures /Plan

Number 2.4.22 RO 3.0 SRO 4.0 CFR Link (CFR: 43.5 / 45.12)

Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.

Question Number: 79

79

RO

SRO

Question ID: 29654 Origin: Bank

Memory Level

A spent fuel bundle just removed from the Reactor Vessel has been dropped into the Fuel Pool. Health Physics reports that general area dose rates on the Refuel Floor are 1,200 millirem (1.2 Rem) to 1,400 millirem (1.4 Rem) per hour.

The "B" channel of the Refuel Floor High Exhaust duct monitor and the Refuel Floor Wall Exhaust duct monitors do NOT respond to the increased radiation levels.

- (1) The radioactive release caused by the dropped fuel bundle will be . . .
(2) What is the minimum initial emergency classification level?

A (1) . . . less than 10 CFR 100 (REACTOR SITE CRITERIA) limits.
(2) ALERT.

B (1) . . . greater than Updated Final Safety Analysis Report (UFSAR) values.
(2) UNUSUAL EVENT.

C (1) . . . less than 10 CFR 20 (STANDARDS FOR PROTECTION AGAINST RADIATION) limits.
(2) ALERT.

D (1) . . . less than 10 CFR 50.72 (IMMEDIATE NOTIFICATION REQUIREMENTS FOR OPERATING NUCLEAR POWER REACTORS) limits.
(2) UNUSUAL EVENT.

Question Number: 79

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - YES

CHOICE (B) - NO

WRONG: Wrong EAL and TS basis is 10 CFR 100

VALID DISTRACTOR: One channel still works to limit values. UFSAR describes expected consequences.

CHOICE (C) - NO

WRONG: Rad Monitors not designed to 10 CFR 20 limits.

VALID DISTRACTOR: correct EAL

CHOICE (D) - NO

WRONG: Rad Monitors not designed to 10 CFR 50.72 limits.

VALID DISTRACTOR: This may be a REPORTABLE event.

References

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(4)

Gil 10/16/05 - "C" also appears correct. With 1200 mr release it should be >10CFR20 limits

R - changed from > to < per the original Bank question.

Todd/Rich 10/31/05 - deleted sentence referring to fuel bundle dropped onto another recently removed bundle.

NRC K/A System/E/A

System 2950 Refueling Accidents
23

Number AA2.05 **RO** 3.2 **SRO** 4.6 **CFR Link** (CFR: 41.10 / 43.5 / 45.13)

Ability to determine and/or interpret the following as they apply to REFUELING ACCIDENTS : †Entry conditions of emergency plan

NRC K/A Generic

System

Number **RO** **SRO** **CFR Link**

Question Number: 80

80

RO

SRO

Question ID: 29665 Origin: Bank

Memory Level

A seismic event has occurred and the following conditions exist on SSES Unit 1:

- Complete loss of offsite power (LOOP).
- Steam leak inside the drywell.
- ESS bus1C (1A203) is deenergized due to a fault.
- All ON-100-101 (SCRAM, SCRAM IMMINENT) actions are complete.
- Reactor Pressure Vessel (RPV) LEVEL is 27 inches and lowering at 2 inches per minute.
- Reactor Pressure Vessel (RPV) PRESSURE is 720 psig and lowering.
- Drywell (DW) TEMPERATURE is 255 degrees Fahrenheit and rising at 5 degrees per minute.
- Drywell (DW) PRESSURE is 9 psig and rising.
- Suppression Pool (SP) TEMPERATURE is 104 degrees Fahrenheit.
- Suppression Pool (SP) PRESSURE is 8 psig and rising.

Which ONE of the following describes the next required action?

- A** RHR Pumps will be continuously needed for Adequate Core Cooling.
- B** Perform a Rapid Depressurization
- C** Initiate Suppression Pool (SP) Cooling.
- D** Initiate Drywell (DW) Spray.

Question Number: 80

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - NO

WRONG: Core Cooling is assured by core submergence. With level at 27 inches and dropping by 2 ipm, it will take 78 minutes to reach L1 (-129) where LPCI will be needed.

VALID DISTRACTOR: Core cooling is a plausible alternative given the dropping pressure - especially if the Applicant sees a need to Depressurize.

CHOICE (B) - NO

WRONG: Rapid Depressurization would be required if HCTL limits of Figure 2 or PSL limits of Figure 4 were threatened. The given conditions do NOT provide justification for depressurization.

VALID DISTRACTOR: SBLOCA could cause Applicant to depressurize and utilize low pressure ECCS injection sources.

CHOICE (C) - NO

WRONG: DW spray lineup would be complicated by SPC and DW spray takes priority.

VALID DISTRACTOR: Temperature is above 90 deg F.

CHOICE (D) - YES

Loss of 1A203 causes loss of RHR Pp 1C, CS Pp 1C, RHR SW Pp 1A, 1B230.

Loss of 1B230 causes loss of 1B236 which causes loss of "C" RHR valves.

The "A" loop s/b available with one pump.

Therefore, this condition complicates the Applicant's analysis but has no effect on the result.

References

NM1 Exam of October 2002 (Question ID 22128)
EO-000-103

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Gil 10/16/05 - Did not have Figures 2 and 4 to complete technical review. Could not verify distractors A, B and C wrong.

Todd/Rich 10/31/05 - OK

NRC K/A System/E/A

System 2950 High Drywell Temperature
28

Number EA2.04 **RO** 4.1 **SRO** 4.2 **CFR Link** (CFR 41.10, 43.5, 45.13)

Ability to determine and/or interpret Drywell pressure as it applies to HIGH DRYWELL TEMPERATURE

NRC K/A Generic

System

Number **RO** **SRO** **CFR Link**

Question Number: 81

81

RO

SRO

Question ID: 29667 Origin: New

Memory Level

Which ONE of the following is a basis for the Technical Specification limits on Suppression Pool water level?

- A** The LOW level limit ensures peak containment pressure is maintained below the maximum allowable pressure for containment.
- B** The LOW level limit protects the ability to quench a LOCA before down comer openings become uncovered.
- C** The HIGH level limit ensures that HPCI and RCIC turbine exhaust lines do not fill with water and cause a high backpressure trip.
- D** The HIGH level limit ensure the Suppression Pool to Drywell Vacuum Breakers do not become water sealed.

Question Number: 81

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A): YES

CHOICE (B) - NO

WRONG: This is not the TS basis for the TS low level limit of 22 feet.

VALID DISTRACTOR: This is the basis for Rapid RPV Depressurization if SP level lowers to 12 feet.

CHOICE (C) - NO

WRONG: The TS high level limit is 24 feet and is based on SRV clearing loads and excessive pool swells.

VALID DISTRACTOR: This is the EOP basis for starting HPCI and RCIC if level approaches 25 feet.

CHOICE (D) - NO

WRONG: Not a stated basis for SP water level and would not expect them to seal because they would pass higher SP level into the tailpipe to maintain same level in both the SP and the Down comer.

VALID DISTRACTOR: Water above the check valves could cause sealing if the down comer level were greater than the SP level.

References

TS 3.6.2.2.

EOP-000-103

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(2)

Gil 10/16/05 - OK.

Todd/Rich 10/31/05 - OK

NRC K/A System/E/A

System 2950
30

Number

RO

SRO

CFR Link

NRC K/A Generic

System 2.2 Equipment Control

Number 2.2.25

RO 2.5

SRO 3.7

CFR Link (CFR: 43.2)

Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.

Question Number: 82

82

RO

SRO

Question ID: 29668 Origin: New

Memory Level

Instrumentation and Controls (I&C) is performing a Technical Specification Surveillance on Reactor Protection System (RPS) train "B" (Division II).

1. RPS train "B" is currently deenergized (half-scam) pursuant to the aforementioned surveillance.
2. Average Power Range Monitor (APRM) "E" is mistakenly taken out of OPERATE.
3. RPS train "A" remains energized.
4. The plant remains at full power.

As Unit Supervisor, you must . . .

- A** . . . enter ON-100-101, SCRAM, SCRAM IMMINENT at step 3.1.
- B** . . . enter EO-103-113 SH2, CONTROL ROD INSERTION at step CR-1.
- C** . . . enter EO-100-113 SH1, LEVEL/POWER CONTROL at step LQ-1.
- D** . . . enter EO-100-102, RPV CONTROL, at step RC-1.

Question Number: 82

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - NO

WRONG: the EOP has priority over an ON. A scram condition exists and a scram did not ensue.

VALID DISTRACTOR: Applicant may elect to pursue a misperceived imminent scram.

CHOICE (B) - NO

WRONG: the entry condition is EXISTING SCRAM CONDITION AND POWER > 5%.

VALID DISTRACTOR: Applicant will get to this eventually if attempts to scram rods fail.

CHOICE (C) - NO

WRONG: the entry condition is EXISTING SCRAM CONDITION AND POWER > 5%.

VALID DISTRACTOR: Applicant will get to this almost immediately. However, the correct path is through EO-100-102

CHOICE (D) - YES

References

EOPs

OP-AD-001, Section 6.2.1

Comments and Question Modification History

CXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Gil 10/16/05 - If "E" APRM is "A" RPS channel, then there IS a Scram condition. Looks like "C" is correct, not "D"

R - EO-100-113 has NO entry conditions. The only way to get there is through EO-100-102.

Todd/Rich 10/31/05 - change "should" to "must".

NRC K/A System/E/A

System 2950
37

Number **RO** **SRO** **CFR Link**

NRC K/A Generic

System 2.4 Emergency Procedures /Plan

Number 2.4.11 **RO** 3.4 **SRO** 3.6 **CFR Link** (CFR: 41.10 / 43.5 / 45.13)

Knowledge of abnormal condition procedures.

Question Number: 83

83

RO

SRO

Question ID: 29707 Origin: Bank

Memory Level

SSES Unit 2 is at 40% of rated power. Main Condenser back-pressure readings over the next ten minutes are as follows:

- 1 Minute 4 in HG absolute
- 2 Minutes 8 in HG absolute
- 4 Minutes 10 in HG absolute
- 6 Minutes 12 in HG absolute
- 8 Minutes 14 in HG absolute
- 10 Minutes 23 in HG absolute

When and why should the Unit Supervisor direct the Primary Control Operator to manually scram the Reactor?

- A** AFTER the Main Turbine trips to prevent opening of Turbine Bypass Valves.
- B** AFTER the Main Turbine trips ONLY IF the Reactor fails to scram automatically.
- C** BEFORE the Main Turbine trips to prevent forcing an automatic protective action.
- D** BEFORE the Main Turbine trips because an automatic reactor scram will not occur at this power level.

Question Number: 83

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - NO

WRONG: Manual scram should precede the Turbine trip

VALID DISTRACTOR: sequence of events is correct.

CHOICE (B) - NO

WRONG: Manual scram should precede the Turbine trip. Sequence of events is wrong.

VALID DISTRACTOR: Reactor will automatically scram from above 30% if Turbine trips.

CHOICE (C) - YES

CHOICE (D) - NO

WRONG: Sequence of events is wrong. Auto scram will occur cause >30%.

VALID DISTRACTOR: Correct to scram before Turbine trips. (Stop heat generation BEFORE removing the heat sink).

References

Clinton June 200 exam (Question ID 18955)

Cooper 1 August 2002 exam (Question ID 23963)

ON-143-001

ON-100-101

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Tough K/A match. Alternative may be to present sequence of events and ask what could have caused it.

Gil 10/16/05 - Question is about what happens with decreasing vacuum. NOT a match to K/A. Suggest a table of absolute pressure readings with time and ask when the various things will happen. In any event, RX will Scram on Turbine Trip >30% power.

R - This was an acceptable K/A match on another NRC exam. I see no difference between asking for the correct sequence of events and the suggested fix. Agree that the Rx will scram upon Turbine Trip. Question is asking if the Applicant recognizes that the heat sink is about to be lost and, therefore, it is best to preemptively stop the heat source - without reliance on automatic action.

Gil 10/17/05 - per phone conversation, add table of values to test Applicant's ability to interpret the indication.

R - done.

Todd/Rich 10/31/05 - Saved original as 832 and deleted first part of the question.

NRC K/A System/E/A

System 2950 Loss of Main Condenser Vacuum
02

Number AA2.01 **RO** 2.9 **SRO** 3.1 **CFR Link** (CFR: 41.10 / 43.5 / 45.13)

Ability to determine and/or interpret the following as they apply to LOSS OF MAIN CONDENSER VACUUM : Condenser vacuum/absolute pressure

NRC K/A Generic

System

Number **RO** **SRO** **CFR Link**

Question Number: 84

84

RO

SRO

Question ID: 29670 Origin: New

Memory Level

SSES Unit 1 is at full rated power. SSES Unit 2 is in Mode 5 for an unplanned refueling outage. You are the Unit 2 Unit Supervisor and are responding to a Standby Gas Treatment System (SGTS) Exhaust Ventilation Hi-Hi alarm per ON-070-001, ABNORMAL GASEOUS RADIATION RELEASE/CAM ALARMS.

The Shift Manager has just declared an ALERT based on RA1.

As Unit Supervisor, you . . .

- A** . . . stop implementation of ON-070-001, ABNORMAL GASEOUS RADIATION RELEASE/CAM ALARMS and enter EO-200-105, RADIOACTIVITY RELEASE CONTROL .
- B** . . . remain in ON-070-001, ABNORMAL GASEOUS RADIATION RELEASE/CAM ALARMS and enter EO-200-105, RADIOACTIVITY RELEASE CONTROL .
- C** . . . stop implementation of ON-070-001, ABNORMAL GASEOUS RADIATION RELEASE/CAM ALARMS and enter EO-200-103, PRIMARY CONTAINMENT CONTROL.
- D** . . . remain in ON-070-001, ABNORMAL GASEOUS RADIATION RELEASE/CAM ALARMS and enter EO-200-103, PRIMARY CONTAINMENT CONTROL.

Question Number: 84

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - NO

WRONG: Not necessary to leave ON-070-001. Rather, concurrent performance of ON-070-001 is desirable because it provides more specific direction.

VALID DISTRACTOR: Required to enter EO-200-105 at the ALERT level.

CHOICE (B) - YES

CHOICE (C) - NO

WRONG: other EOP entry is SECONDARY CTMT control, not PRIMARY.

VALID DISTRACTOR: Applicant could confuse CTMT control EOPs.

CHOICE (D) - NO

WRONG: other EOP entry is SECONDARY CTMT control, not PRIMARY.

VALID DISTRACTOR: Applicant could confuse CTMT control EOPs.

References

EP-TP-1

ON-070---1

EO-100-112

EO-100-105

EO-100-102

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(4).

Gil 10/16/05 - Should NOT be in EO-200-105 with given stem conditions. Must have SGTS off to have unmonitored release.

R: The entry condition for EO-200-105 is "OFFSITE RAD RELEASE RATE ABOVE ALERT ANTICIPATED". If the Shift Manager has declared an ALERT in response to the offsite release rate, you should enter the EOP.

Todd/Rich 10/31/05 - editorial changes and "C" and "D" are implausible.

C - Scram the reactor and enter EO-200-112, RAPID DEPRESSURIZATION.

D - Scram the reactor and enter EO-200-102, RPV CONTROL.

changed distractors.

NRC K/A System/E/A

System 2950
17

Number **RO** **SRO** **CFR Link**

NRC K/A Generic

System 2.4 Emergency Procedures /Plan

Number 2.4.6 **RO** 3.1 **SRO** 4.0 **CFR Link** (CFR: 41.10 / 43.5 / 45.13)

Knowledge symptom based EOP mitigation strategies.

Question Number: 85

85

RO

SRO

Question ID: 29671 Origin: Bank

Memory Level

OSCAR has been dispatched as a result of an unisolable primary to secondary containment leak on SSES Unit 1. A cool down is in progress with the MSIVs closed. Standby Gas Treatment System is in service with the following parameters:

- Secondary Containment differential pressure is -0.31 inches WG.
- SGTS SPING Noble Gas is 1.0E06 (1,000,000) micro curies per minute.
- OSCAR whole body dose readings are 0.05 millirem per hour.

A siding panel fails on the Refuel Floor. Secondary Containment differential pressure now indicates 0 inches WG.

- (1) How do SPING readings relate to the offsite release rate and
- (2) How will OSCAR whole body dose readings respond to the panel failure?

- A** (1) SBGT SPING Noble Gas is NOT representative of the Total Offsite Release.
(2) OSCAR whole body dose readings will increase.
- B** (1) SBGT SPING Noble Gas is NOT representative of the Total Offsite Release.
(2) OSCAR whole body dose readings will NOT change.
- C** (1) SBGT SPING Noble Gas IS representative of the Total Offsite Release.
(2) OSCAR whole body dose readings will increase.
- D** (1) SBGT SPING Noble Gas IS representative of the Total Offsite Release.
(2) OSCAR whole body dose readings will NOT change.

Question Number: 85

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - YES

CHOICE (B) - NO

WRONG: OSCAR readings as release rate increases. Release rate increases through the siding failure.

VALID DISTRACTOR: Applicant may misunderstand how OSCAR works and think it sees the increased release. SBT part is correct.

CHOICE (C) - NO

WRONG: The panel failure cause bypass of SBT.

VALID DISTRACTOR: OSCAR does see increase

CHOICE (D) - NO

WRONG: The panel failure causes bypass of SBT

VALID DISTRACTOR: Applicant may misunderstand how OSCAR works and think it sees the increased release. Mirror imaging.

References

SSES Bank
TM-OP-070

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(4).

Gil 10/16/05 - No K/A statement with question. Looks like a system-level, not SRO level (no choice of procedures).

How does OSCAR "see" the release?

R - K/A statement added. OSCAR is an Off-site Rad Monitoring team.

Gil 10/17/05 - K/A match is acceptable. Accepts SRO under (b)(4).

Todd/Rich 10/31/05 - editorial changes.

NRC K/A System/E/A

System 2950 Secondary Containment High Differential Pressure
35

Number EA2.02 **RO** 2.8 **SRO** 4.1 **CFR Link** (CFR 41.8 to 41.10)

Ability to determine and/or interpret the following as they apply to SECONDARY CONTAINMENT HIGH DIFFERENTIAL PRESSURE: Off-site release rate: Plant-Specific.

NRC K/A Generic

System

Number

RO

SRO

CFR Link

Question Number: 86

86

RO

SRO

Question ID: 29674 Origin: Mod

Memory Level

SSES Unit 2 is in Mode 2. The following conditions exist:

- all Intermediate Range Monitors (IRM) read approximately 65 on Range 2.
- Source Range Monitor (SRM) "A" reads 1.9E5 (190,000) counts per second (cps).
- Source Range Monitor (SRM) "B" is BYPASSED
- Source Range Monitor (SRM) "C" reads 2.0E5 (200,000) counts per second (cps).
- Source Range Monitor (SRM) "D" reads 2.1E5 (210,000) counts per second (cps).
- Reactor Period on all four SRMs is approximately 400 seconds.
- Reactor Engineering requests additional control rod withdrawal to continue raising Reactor power.

Which ONE of the following is correct?

- A** Control Rods may be withdrawn when ALL Division I IRMs are on Range 3. Technical Specification requirements for SRMs are satisfied.
- B** Control Rods can be withdrawn when ANY Division I IRM is on Range 3. Suspend Control Rod withdrawal immediately.
- C** Control Rods may be withdrawn when ALL Division II IRMs are on Range 3. Technical Specification requirements for SRMs are satisfied.
- D** Control Rods can be withdrawn when ANY Division II IRM is on Range 3. Suspend Control Rod withdrawal immediately.

Question Number: 86

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No

WRONG: SRM "D" > 2E5 causes RMCS rod block. Block is auto byp when associated IRMs go to R3.

VALID DISTRACTOR: Applicant may confuse Divisional assignments.

CHOICE (B) -

WRONG: SRM "D" > 2E5 causes RMCS rod block. Block is auto byp when associated IRMs go to R3 - ALL of them.

VALID DISTRACTOR: Applicant may confuse Divisional assignments. Applicant may overreact to TS issue.

CHOICE (C) - YES

CHOICE (D) - No

WRONG: must have all four associated IRMs on R3 to auto byp.

VALID DISTRACTOR: Applicant could misunderstand system operation. Applicant may overreact to TS issue.

References

Grand Gulf exam of April 2000

AR-104-B06

TM-OP078A

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(2)

Gil 10/16/05 - Looks like a system-level question, not SRO. Distractors do not appear to address "plant status"

R - Grand Gulf exam at the SRO level. Could add period requirements (300 to 100).

Gil 10/17/05 - version given to Gil included question for current plant status.

R - added Tech Spec issues to raise to SRO level.

NRC K/A System/E/A

System 2150 Source Range Monitor (SRM) System
04

Number A2.02 **RO** 3.4 **SRO** 3.7 **CFR Link** (CFR 41.5 / 45.6)

Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: SRM inop condition.

NRC K/A Generic

System

Number **RO** **SRO** **CFR Link**

Question Number: 87

87

RO

SRO

Question ID: 29675 Origin: New

Memory Level

Both Units are at full rated power. The Control Room receives the following alarm:

- RAILROAD ACCESS HI HI RADIATION (AR-016-001, F12)

The CRO reports that Zone 3 Exh Railroad Access Shaft Radiation Monitor (RR-D12-1R608) reads 5.2 millirem per hour and is slowly trending up. Operators report from the Upper and Lower Relay Rooms that RISHH-D12-1K616A read 5.4 and 5.3 millirem per hour respectively. Maintenance is staging equipment in the Railroad Access Shaft and Reactor Building Zone 3 is open to the Railroad Access Shaft. Control Room Operators are NOT able to establish communication with personnel working in the Railroad Access Shaft.

As Shift Manager, you must direct the Unit Supervisor to __ (1) __ for the purpose of __ (2) __:

- A** (1) Enter EO-100-104 and ES-070-001,
(2) Isolating Zone 1 Reactor Building HVAC and initiating SGTS.
- B** (1) Enter EO-100-104 and ES-070-001,
(2) Isolating Zone 3 Reactor Building HVAC and initiating SGTS.
- C** (1) Enter EO-100-104 and ON-159-002,
(2) Isolating Zone 3 Reactor Building HVAC and initiating SGTS.
- D** (1) Enter EO-100-104 and ON-134-003
(2) Isolate the Railroad Access Shaft by restoring HVAC to normal.

Question Number: 87

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No
WRONG: Need to isolate Zone 3.
VALID DISTRACTOR: Correct procedures.

CHOICE (B) - YES

CHOICE (C) - No
WRONG: EO-100-104 directs the user to the ON to confirm ISO/INIT and to the ES if the ISO/INIT did NOT auto occur.
VALID DISTRACTOR: Correct EO, correct strategy and the ON can direct the user to ISO/INIT.

CHOICE (D) - No
WRONG: Wrong strategy. Goal is to ISO RB HVAC.
VALID DISTRACTOR: Correct EO and goal is to isolate the radiation.

References

ES-070-001
TM-OP-034, 079E
ON-159-002
ON-070-001
AR-016-F12

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(4)

Gil 10/16/05 - The RAILROAD ACCESS is an area rad monitor, not exhaust monitor (does not match K/A). Looks like "B" is wrong and "C" is correct.

R - "C" is not correct because there has been no AUTO initiation of Zone III isolation and SGTS. Uncertain about K/A match. The RB HVAC system responds to the RR access area monitor to prevent a release. Per SSES materials, the initiators are EXHAUST ducts.

Todd/Rich 10/31/05 - editorial changes

NRC K/A System/E/A

System 2610 Standby Gas Treatment System
00

Number A2.13 **RO** 3.4 **SRO** 3.7 **CFR Link** (CFR 41.5 / 45.6)

Ability to (a) predict the impacts of the following on the STANDBY GAS TREATMENT SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High secondary containment ventilation exhaust radiation.

NRC K/A Generic

System

Number **RO** **SRO** **CFR Link**

Question Number: 88

88

RO

SRO

Question ID: 29623 Origin: Bank

Memory Level

SSES experienced a seismic event. Consequently, a loss of offsite power (LOOP) occurred. Both units have established Reactor Pressure and Inventory control using Reactor Core Isolation Cooling (RCIC). All 4.16 kVAC and 480 VAC ESS buses are energized within 10 seconds.

One hour later, the Control Room Operators are investigating a slow rise in Drywell Pressure on SSES Unit 1. Conditions rapidly deteriorate and the following conditions develop:

- Emergency Service Water (ESW) pumps 0P504 B, C, D are running.

On SSES Unit 1:

- Drywell Pressure is 2.1 psig.
- Reactor Pressure Vessel pressure is 395 psig.
- Residual Heat Removal (RHR) pumps 1P202 B, C, D are running.
- Core Spray (CS) pumps 1P206 B, C, D are running.

On SSES Unit 2:

- Control Rod Drive (CRD) pump 2P132A is running.
- Reactor Building Chiller 2K206A is running.

Which ONE of the following describes the cause of these conditions and the required actions?

- A** Emergency Diesel Generator (EDG) Supply Breaker (1A20104) OPENED and RECLOSED for LOAD SEQUENCING.
Perform ON-104-201, LOSS OF 4KV BUS 1A (1A201) or ON-204-201, LOSS OF 4KV BUS 2A (2A201) to energize either buss.
- B** Emergency Diesel Generator (EDG) "A" Output Breaker tripped open.
Perform ON-104-201, LOSS OF 4KV BUS 1A (1A201) and ON-204-201, LOSS OF 4KV BUS 2A (2A201) to energize both busses.
- C** Emergency Diesel Generator (EDG) "A" tripped.
Perform ON-024-001, DIESEL GENERATOR TRIP.
- D** Emergency Diesel Generator (EDG) Supply Breaker (1A20104) tripped OPEN.
Perform ON-104-201, LOSS OF 4KV BUS 1A (1A201).

Question Number: 88

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No

WRONG: 2A201 is ENERGIZED because Unit 2 CRD and RB Chillers are running.

VALID DISTRACTOR: Failure to start would cause 1A201 loss

CHOICE (B) - No

WRONG: 2A201 is ENERGIZED because Unit 2 CRD and RB Chillers are running.

VALID DISTRACTOR: Buss lockout can prevent buss reenergization.

CHOICE (C) - No

WRONG: 2A201 is ENERGIZED because Unit 2 CRD and RB Chillers are running.

VALID DISTRACTOR: Similar to (A) - loss of EDG would dEnergize 1A201.

CHOICE (A) - YES

Plausible that the EDG feeder tripped when RHR or CS pumps started in response to the SSES Unit 1 LOCA.

References

INPO Bank: Fermi July 2003 exam (Question ID)
TM-OP-004

Comments and Question Modification History

GXJ

THF

RJC

SSES

Gil 09/26/05 - Distracter "D" is shortest (problem?). Also change 2A2014 to 1A2014.

R: change 2A2014 to 1A2014. Not sure how to remedy potential psychometric flaw without reducing plausibility of the distracters. lengthened A and C by changing "and" to "or" and adding reason. May better hide the psychometric clue.

Gil & Harry phone discussion: run it past Todd. Possible remedy, delete second procedure in "A".

Todd 09/30/05 - deleted " due to a bus lockout." from distracter "B".

10/05/05 - substitute this for SRO Tier 2 / Group 1 because UPS was sampled in the RO portion of the exam.

Gil 10/16/05 - ...buses are energized within 10 seconds A. "A" ran out of fuel (implausible as written if all buses were, originally, energized

R - changed "A" and "B" to better conceal the error of "A".

Gil 10/17/05 - added ". . . within 10 seconds" to stem. Changed "A" to "ran out of fuel"

NRC K/A System/E/A

System 2620 A.C. Electrical Distribution
01

Number A2.03 **RO** 3.9 **SRO** 4.3 **CFR Link** (CFR 41.5 / 45.6)

Ability to (a) predict the impacts of Loss of off-site power on the A.C. ELECTRICAL DISTRIBUTION ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations

NRC K/A Generic

System

Number **RO** **SRO** **CFR Link**

Question Number: 89

89

RO

SRO

Question ID: 29678 Origin: New

Memory Level

Both units are at full power with an Equalizing Battery charge in progress on 1D610. The feeder breaker to 1D614 trips open and 1D614 is deenergized. Choose from the list of procedures below, the ORDER in which these procedures will be implemented.

- a. AR-106-001, 125V DC PANEL 1L610 SYSTEM TROUBLE (A12).
- b. ON-102-610, LOSS OF 125V DC BUS 1D610.
- c. LA-1L610-001, 125 VDC Panel 1L610.
- d. EO-100-102, RPV CONTROL.

A b - d - a - d

B a - c - b - d

C c - a - b - d

D d - b - a - c

Question Number: 89

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No

VALID DISTRACTOR: Applicant may recognize entry conditions for the ON, then go to the EO.

CHOICE (B) - No

VALID DISTRACTOR: Applicant may select the AR because it is the first indication.

CHOICE (C) - No

VALID DISTRACTOR: Exact opposite of correct answer.

CHOICE (D) - YES

On loss of 1D610, both RRP's trip because the closed indication for RPT breakers is lost. ON-164-002 requires the user to scram the Rx if both RRP's trip. Per SSES, a scram from high power will cause RPV level to go below +13 inches - an entry condition for EO-100-102.

References

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Gil 10/16/05 - OK.

Todd/Rich 10/31/05 - changed "should" to "will" in stem.

NRC K/A System/E/A

System 2630
00

Number **RO** **SRO** **CFR Link**

NRC K/A Generic

System 2.4 Emergency Procedures /Plan

Number 2.4.5 **RO** 2.9 **SRO** 3.6 **CFR Link** (CFR: 41.10 / 43.5 / 45.13)

"Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions."

Question Number: 90

90

RO

SRO

Question ID: 29676 Origin: Mod

Memory Level

During the Monthly Diesel Generator Operability Test of EDG "B" per SO-024-001, a minor oil leak from the Woodward Governor was discovered. The plan to repair this leak is to run EDG "B" unloaded per OP-024-001 while Maintenance evaluates and repairs the leaky fitting under a minor maintenance activity. According to Engineering, the leak rate is independent of generator load. After two hours and ten minutes, the repair is successful.

Which ONE of the following describes the actions, if any, required before stopping and returning EDG "B" to standby status?

- A** Immediately shutdown EDG "B". Loading is NOT required because the EDG ran unloaded for less than 6 hours.
- B** Immediately shutdown EDG "B" to minimize causes of accelerated component wear.
- C** Load EDG "B" to greater than 3,000 KW for 30 minutes as post maintenance testing.
- D** Load EDG "B" to greater than 3,000 KW for 30 minutes to minimize causes of accelerated component wear.

Question Number: 90

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No

WRONG: Loading to >75% is required for 15 minutes per hour of unloaded run time.

VALID DISTRACTOR: The TSS requires loaded operation for 30 mins if unloaded for 6 hours. Applicant will choose incorrectly if applying the wrong procedure.

CHOICE (B) - No

WRONG: Loaded operation is required.

VALID DISTRACTOR: correct reason.

CHOICE (C) - No

WRONG: PMT not required because Engineering stated the leak rate is independent of generator load.

VALID DISTRACTOR: correct load and time.

CHOICE (D) - YES

References

Perry 1 Exam of March 2002

OP-024-001

SO-024-001

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

QUESTION FOR SSES - why are the SO and OP requirements different?

Gil 10/16/05 - OK.

Todd/Rich 10/31/05 - keep as is but give Applicants copies of both procedures.

NRC K/A System/E/A

System 2640
00

Number

RO

SRO

CFR Link

NRC K/A Generic

System 2.1 Conduct of Operations

Number 2.1.32

RO 3.4

SRO 3.8

CFR Link (CFR: 41.10 / 43.2 / 45.12)

Ability to explain and apply all system limits and precautions

Question Number: 91

91

RO

SRO

Question ID: 29677 Origin: New

Memory Level

SSES Unit 2 is at full rated power with Average Power Range Monitor (APRM) "E" bypassed. APRM "D" fails DOWNSCALE.

Which ONE of the following is the LEAST limiting response with respect to Limiting Conditions for Operation (LCO) and permissible under Technical Specifications?

- A** Bypass APRM "D" to restore Rod Block Monitoring (RBM) OPERABILITY.
- B** Bypass Rod Block Monitoring (RBM) "B" and enter a 5 day time clock per LCO 3.3.2.1.A
- C** Operators should direct I&C to place Rod Block Monitoring (RBM) "B" in TRIP within 48 hours per LCO 3.3.2.1.B
- D** Operator action is not required because the failed APRM automatically bypasses the associated Rod Block Monitor (RBM).

Question Number: 91

Answers: A B C D

References Provided to Applicant:

Justification

CHOICE (A) - YES

CHOICE (B) - No

WRONG: Bypassing the RBM and entering a 5 day LCO is acceptable but bypassing the APRM restores full OPERABILITY

VALID DISTRACTOR: This works.

CHOICE (C) - No

WRONG: Not necessary to trip the RBM

VALID DISTRACTOR: Correct LCO action if 3.3.2.1.A not complied with.

CHOICE (D) - No

WRONG: Violated TS requirements.

VALID DISTRACTOR: the failed APRM does bypass the associated RBM channel.

References

AR-103-C06
TM-OP-078K

Comments and Question Modification History

GXJ THF RJC SSES

10 CFR 55.23 (b)(2)

Gil 10/16/05 - Does the TS require two RBMs operable? If NOT, then answer may be wrong.

R - uncertain of interpretation but MY interpretation of TS Table 3.3.2-1 is that 2 channels of RBM are REQUIRED.

Todd/Rich 10/31/05 - improve call of the question.

R - will ask SSES for assistance.

Todd 10/31/05 - TS provided for question 92 may assist with this question.

R - correct but not a problem. Applicant must understand the APRM-RBM association and RBM response to failure or bypassing of associated APRM.

NRC K/A System/E/A

System 2150 Rod Block Monitor System
02

Number A2.03 **RO** 3.1 **SRO** 3.3 **CFR Link** (CFR 41.5 / 45.5)

Ability to (a) predict the impacts of the following on the ROD BLOCK MONITOR SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of associated reference APRM channel: BWR-3,4,5.

NRC K/A Generic

System

Number **RO** **SRO** **CFR Link**

Question Number: 92

92

RO

SRO

Question ID: 29688 Origin: Bank

Memory Level

SSES Unit 1 is at 30% of rated power. Instrumentation and Controls (I&C) reports that Reactor Pressure Vessel (RPV) water level detector LIS-B21-1N025A failed a sensor calibration and must be replaced.

As Unit Supervisor, you must declare the associated channel INOPERABLE and . . .

- A** . . . place the channel in trip or place the associated trip system in trip within 12 hours.
- B** . . . declare RCIC inoperable within 1 hour and place the channel in trip within 24 hours.
- C** . . . isolate RWCU AND be in Mode 3 within 12 hours & be in Mode 4 within 36 hours.
- D** . . . restore the channel to OPERABLE status or place the channel in trip within 14 days.

Question Number: 92

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No
WRONG: This is the RPS LCO (3.3.1.1)
VALID DISTRACTOR: correct for LIS-B21-1N024A

CHOICE (B) - No
WRONG: This is the RCIC Low Water Level Initiation LCO (3.3.5.2)
VALID DISTRACTOR: correct for LIS-B21-1N031A.

CHOICE (C) - No
WRONG: This is the Primary CTMT Instrumentation LCO (3.3.6.1)
VALID DISTRACTOR: correct for LITS-B21-1N026A

CHOICE (D) - YES
TS 3.3.4.2.A

References

TS 3.3
TM-OP-080
Dwg M1-B31-275

Comments and Question Modification History

GXJ **THF** **RJC** **SSES**

10 CFR 55.43.(b)(2)

NOTE:
Applicant will need Drawings and Technical Specification section 3.3 to determine the answer.
Consider full set of ECCS, RPS prints.

Gil 10/16/05 - OK.
Todd/Rich 10/31/05 - OK

NRC K/A System/E/A

System 2160
00

Number RO SRO CFR Link

NRC K/A Generic

System 2.2 Equipment Control

Number 2.2.22 RO 3.4 SRO 4.1 CFR Link (CFR: 43.2 / 45.2)

Knowledge of limiting conditions for operations and safety limits

Question Number: 93

93

RO

SRO

Question ID: 29680 Origin: Bank

Memory Level

Which ONE of the following correctly describes a HOIST TUBE HANG UP?

- A** The PLC compares speed to the required zone speed; if a slow down does NOT occur in a Transition Zone, a HOIST TUBE HANG UP occurs.
- B** The PLC monitors J-Hook position and load; if the hoist is LOADED with J-Hooks OPEN, a HOIST TUBE HANG UP occurs.
- C** The PLC compares the weight when entering a transition zone through and to the next transition zone; if weight exceeds the set point, a HOIST TUBE HANG UP occurs.
- D** The PLC counts the number of sections that are extended; if too many sections are extended for a known location, a HOIST TUBE HANG UP occurs.

Question Number: 93

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No
WRONG: Not an accurate description
VALID DISTRACTOR: technically feasible and there are speed interlocks.

CHOICE (B) - No
WRONG: Not an accurate description.
VALID DISTRACTOR: this is an OPEN GRAPPLE INTERLOCK.

CHOICE (C) - YES

CHOICE (D) - No
WRONG: Not an accurate description
VALID DISTRACTOR:

References

TM-OP-081A
OP-181-001

Comments and Question Modification History

CXJ **THF** **RJC** **SSES**

10 CFR 55.43 (b)(7)

Gil 10/16/05 - I believe you need to specify the system is in "Automatic Mode"
R - uncertain. Does not appear in the procedure definition. Also - question merely asks for a definition.

!!!!!! Ask SSES if AUTO mode makes a difference or not !!!!!!!

Todd/Rich 10/31/05 - OK

NRC K/A System/E/A

System 2340 Fuel Handling Equipment
00

Number A3.01 **RO** 2.6 **SRO** 3.6 **CFR Link** (CFR 41.7 / 45.7)

Ability to monitor automatic operations of the FUEL HANDLING EQUIPMENT including Crane/refuel bridge movement (Plant-Specific)

NRC K/A Generic

System

Number **RO** **SRO** **CFR Link**

Question Number: 94

94

RO

SRO

Question ID: 29681 Origin: Bank

Memory Level

SSES Unit 2 is performing a Control Rod Sequence swap. The PCO reselects and confirms the previous FOUR rod moves. Rod 14-27, the second of the last four rods moved, is at Position 02 instead of its required Position 00.

What is the status of Control Rod 14-27 and what action is required?

- A** Control Rod 14-27 is NOT mispositioned. Enter ON-255-001, CONTROL ROD PROBLEMS, for guidance on repositioning the control rod to 00.
- B** Control Rod 14-27 is NOT mispositioned. Shift Supervision will direct the control rod be moved to 00 and an AR written.
- C** Control Rod 14-27 IS mispositioned. Enter ON-255-001, CONTROL ROD PROBLEMS, for guidance on repositioning the control rod to 00.
- D** Control Rod 14-27 IS mispositioned. Shift Supervision will direct the control rod be moved to 00 and an AR written.

Question Number: 94

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No

WRONG: ON-255-001 is NOT required.

VALID DISTRACTOR: Rod is not in its required position and is NOT mis-positioned.

CHOICE (B) - YES

CHOICE (C) - No

WRONG: Per NDAP-QA-0338, Section 5.5, this is not mis-positioned because it was discovered during required checks.

VALID DISTRACTOR: Rod is not where it belongs. Therefore, the ON becomes enticing.

CHOICE (D) - No

WRONG: Per NDAP-QA-0338, Section 5.5, this is not mis-positioned because it was discovered during required checks.

VALID DISTRACTOR: Rod is not where it should be. However, movement can be made without the ON.

References

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Gil 10/16/05 - OK

Todd/Rich 10/31/05 - OK

NRC K/A System/E/A

System

Number

RO

SRO

CFR Link

NRC K/A Generic

System 2.1 Conduct of Operations

Number 2.1.7

RO 3.7

SRO 4.4

CFR Link (CFR: 43.5 / 45.12 / 45.13)

"Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation."

Question Number: 95

95

RO

SRO

Question ID: 29682 Origin: Mod

Memory Level

The time is 19:00.

SSES Unit 1 is operating at FULL rated power.

SSES Unit 2 was required to shutdown pursuant to Technical Specification 3.0.3. SSES Unit 2 entered MODE 3 earlier this same day at 06:00 and is continuing to cool down. The current RPV pressure is 85 psig.

The Outside NPO reports that Spray Pond level is 678 feet.

If Spray Pond level remains at 678 feet, how much time does each unit have to reach mode 4?

- A** SSES Unit 1: 48 hours.
SSES Unit 2: 24 hours.
- B** SSES Unit 1: 24 hours.
SSES Unit 2: 24 hours.
- C** SSES Unit 1: 36 hours.
SSES Unit 2: 36 hours.
- D** SSES Unit 1: 36 hours.
SSES Unit 2: 24 hours.

Question Number: 96

96

RO

SRO

Question ID: 29709 Origin: Bank

Memory Level

SSES Unit 1 is at full rated power.

During performance of SO-151-B02, QUARTERLY CORE SPRAY FLOW VERIFICATION DIVISION II, a System Engineer has asked that Core Spray Pump 1P206B be started with its discharge (CORE SPRAY LOOP B TEST TO SUPP POOL HV-152-F015B) path Manually throttled to 75% open instead of full closed. This is not described in any approved procedure.

What approval is required to perform this test?

Operators may perform the test . . .

- A** . . . with an approved Safety Evaluation only.
- B** . . . with approval from ISI/IST Engineering only.
- C** . . . with approval of the Manager - Nuclear Operations only.
- D** . . . with approval of the Vice President - Nuclear Operations only.

Question Number: 96

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - YES

CHOICE (B) - No

WRONG: a Safety Evaluation is required.

VALID DISTRACTOR: SSES' screening process includes a break out for ISI/IST stuff.

CHOICE (C) - No

WRONG: not true

VALID DISTRACTOR: some stations permit pen and ink changes or "n/a" with concurrence of two SROs.

CHOICE (D) - No

WRONG: not true

VALID DISTRACTOR: Shift Manager does have authority to direct activities outside the scope of existing procedures if necessary to protect the PH&S.

References

10 CFR 55.43 (b)(3)

NDAP-QA-0726

LaSalle exam of November 2000 (Question ID 19300)

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(3)

Gil 10/16/05 - Add "With the plant at 100% power..." ...path Manually throttled...Delete after described in and replace with "any approved procedure" (too many "buzz" words that cue the applicant) Is there a manual valve that can be throttled? Would make a better case for outside UFSAR without cuing excessively

R - all done except Manual valve because there is no manual valve (no Pp discharge isolation).

Gil 10/17/05 - deleted " nor in SSES's Safety Analysis Report" from end of stem to eliminate another cue.

R - done.

Todd/Rich 10/31/05 - get SSES to beef up "C" and "D".

```
*****
*
*           SSES - can you make "C" and "D" more plausible?
*
*****
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NRC K/A System/E/A

System

Number

RO

SRO

CFR Link

NRC K/A Generic

System 2.2 Equipment Control

Number 2.2.7

RO 2.0

SRO 3.2

CFR Link (CFR: 43.3 / 45.13)

Knowledge of the process for conducting tests or experiments not described in the safety analysis report.

Question Number: 97

97

RO

SRO

Question ID: 29684 Origin: New

Memory Level

A failure of transmitter TT-11305 has forced the Control Room to take manual control of Service Water Temperature Control Valve TV11028 at Temperature Controller TIC-11028 on panel 1C668. With this configuration, Operators are able to maintain RBCCW Heat Exchanger outlet temperature at the normal value of 90 degrees Fahrenheit. Adjustments are generally infrequent and predictable. Auxiliary Operators report RBCCW heat exchanger outlet temperature hourly from local indicators TI-11307A/B because the failed transmitter also causes the Control Room to lose RBCCW HX DISCH TEMP TI-11305 indication and disables RBCCW HEADER HI TEMP alarm (AR-123-E05).

As Unit Supervisor, you are reviewing the AR to repair TT-11305. What is the CLASSIFICATION and PRIORITY of this work?

- A** Classification is Corrective Maintenance (A)
Priority is 1, work that should be scheduled and started within 24 hours.
- B** Classification is Corrective Maintenance (A)
Priority is 2, schedule at earliest opportunity within four weeks (short cycle)
- C** Classification is Elective Maintenance (B)
Priority is 3, schedule at next available system window.
- D** Classification is Elective Maintenance (B)
Priority is 4, schedule as resources allow within the normal 13-week schedule process.

Question Number: 97

Answers:

A

B

C

D

References Provided to Applicant:

Justification

Provide Applicants with NDAP-QA-1901 and M-113

CHOICE (A) - No

WRONG: Priority 1 - not TS, Safety Related, Reactivity Mgmt, Risk Significant or risk to generation. No inop system.
VALID DISTRACTOR: correct Classification.

CHOICE (B) - YES

Component is unavailable but the system is available. It is a work around and Significant Control Room deficiency. Transmitter is removed from service and adversely affects controls or processes in a manner that impairs Operator ability to perform.

CHOICE (C) - No

WRONG: Not EM

VALID DISTRACTOR: Pri 3 is an EM priority

NOTE: stayed away from CM-3 because it c/b arguable a second correct answer per Attachment B of NDAP-QA-1901 (Operator Burden, Minor CR Deficiency).

CHOICE (D) - No

WRONG: Not EM

VALID DISTRACTOR: Pri 4 is an EM priority.

References

NDAP-QA-1901 and M-113
TM-OP-014

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(5)

Gil 10/16/05 - Probably need procedure to answer (Minutia) If the stem condition impacts a TS LCO, then it would be "Level 1" and "A" would be correct

R - Agreed. Procedure is to be supplied. No TS LCO impacted.

!!!!!! Confirm with SSES that RBCCW is NOT TS system !!!!!!!

NRC K/A System/E/A

System

Number

RO

SRO

CFR Link

NRC K/A Generic

System

2.2 Equipment Control

Number

2.2.19

RO 2.1

SRO 3.1

CFR Link (CFR: 43.5 / 45.13)

Knowledge of maintenance work order requirements.

Question Number: 98

98

RO

SRO

Question ID: 29685 Origin: Mod

Memory Level

While conducting a radioactive liquid release, SSES Unit 2 receives a RADWASTE EFFLUENT MON DNSCALE/INOP (AR-107-F06) alarm. Investigation finds that RITS-06433, LIQUID RADWASTE RADIATION, is malfunctioning and can NOT be repaired quickly.

Regarding the radioactive liquid release, which ONE of the following is correct?

- A** The release must be MANUALLY terminated and may recommence with a new release permit with Plant Effluent Radiation Monitor Inoperable requirements satisfied.
- B** The release must be MANUALLY terminated and may recommence at one-half the original release rate under the original release permit.
- C** The release is AUTOMATICALLY terminated and may recommence at one-half the original release rate under the original release permit.
- D** The release is AUTOMATICALLY terminated and may recommence with a new release permit with Plant Effluent Radiation Monitor Inoperable requirements satisfied.

Question Number: 98

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No
WRONG: automatically terminates.
VALID DISTRACTOR: correct permit requirements

CHOICE (B) - No
WRONG: automatically terminates.
VALID DISTRACTOR: half the release rate c/b reasonable.

CHOICE (C) - No
WRONG: half the release rate is not the answer.
VALID DISTRACTOR: correct in that it is an auto termination.

CHOICE (D) - YES.

References

ON-069-001
SSES Exam Bank

Comments and Question Modification History

CXJ

THF

RJC

SSES

10 CFR 55.43 (b)(4)

Gil 10/16/05 - OK

Todd/Rich 10/31/05 - OK

NRC K/A System/E/A

System

Number

RO

SRO

CFR Link

NRC K/A Generic

System 2.3 Radiation Control

Number 2.3.6 **RO** 2.1 **SRO** 3.1 **CFR Link** (CFR: 43.4 / 45.10)

Knowledge of the requirements for reviewing and approving release permits.

Question Number: 99

99

RO

SRO

Question ID: 29687 Origin: New

Memory Level

SSES Unit 1 is at 28% and shutting down for a planned refueling outage. De-inerting and purging of the Suppression Chamber is in progress per OP-173-001, CONTAINMENT ATMOSPHERE CONTROL SYSTEM. Standby Gas Treatment System (SGTS) Train "A" is operating. While at 100% power, SSES Unit 2 develops a steam leak and Drywell pressure begins slowly rising.

Which ONE of the following is the correct course of action?

- A** Secure the Suppression Chamber purge on Unit 1, Enter EO-100-103 and vent the Unit 2 Drywell per OP-173-003, PRIMARY CONTAINMENT NITROGEN MAKEUP AND VENTING.
- B** Enter EO-100-103 and vent the Unit 2 Drywell per OP-173-003, PRIMARY CONTAINMENT NITROGEN MAKEUP AND VENTING. It is NOT necessary to stop purging the Unit 1 Suppression Chamber while venting the Unit 2 Drywell.
- C** Enter EO-100-103 and initiate Suppression Chamber spray per OP-149-004, RHR CONTAINMENT COOLING. It is NOT necessary to stop purging the Unit 1 Suppression Chamber.
- D** Enter EO-100-103, start SGTS Train "B" per OP-070-001, STANDBY GAS TREATMENT SYSTEM, and vent the Unit 2 Drywell per OP-173-003, PRIMARY CONTAINMENT NITROGEN MAKEUP AND VENTING.

Question Number: 99

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - YES

CHOICE (B) - No

WRONG: OP-173-001 prohibits cross-connecting Unit 1 and Unit 2 containments through SGTS. NDAP-QA-0309 prohibits cross-connecting the Drywell with the Suppression Chamber.

VALID DISTRACTOR: physically possible.

CHOICE (C) - No

WRONG: The EOP has higher priority. Must use SGTS if possible. SPS is required if unable to maintain CTMT pressure <1.72.

VALID DISTRACTOR: Applicant could assume SGTS is not available for venting.

CHOICE (D) - No

WRONG: OP-173-001 prohibits cross-connecting Unit 1 and Unit 2 containments through SGTS. NDAP-QA-0309 prohibits cross-connecting the Drywell with the Suppression Chamber.

VALID DISTRACTOR: physically possible.

References

OP-173-001, 003
NDAP-QA-0309

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(2), (4), (5).

Gil 10/16/05 - While at 100 % power SSES Unit 2... Delete second sentence of Distractor "B" (cues)

R - added SSES Unit 2 power level. Did NOT delete 2nd sentence of "B" because it would then become arguably correct.

Todd/Rich 10/31/05 - OK

NRC K/A System/E/A

System

Number

RO

SRO

CFR Link

NRC K/A Generic

System 2.3 Radiation Control

Number 2.3.9

RO 2.5

SRO 3.4

CFR Link (CFR: 43.4 / 45.10)

Knowledge of the process for performing a containment purge.

Question Number: 100

100

RO

SRO

Question ID: 29686 Origin: Bank

Memory Level

A reactor startup is in progress on SSES Unit 2 when the following conditions develop:

- Reactor Pressure Vessel (RPV) is 45 psig.
- CRD PUMP A TRIP (AR-107-001, D01) annunciates.
- CRD ACCUMULATOR TROUBLE (AR-107-001, H06) annunciates.
- CRD 32-21 Accumulator Trouble Light on the Full Core Display illuminates.
- An Auxiliary Operator reports that Accumulator 32-21 pressure is 930 psig and slowly lowering.
- CRD 32-21 is at notch position 32.

The required action to IMMEDIATELY __ (1) __ is based on inadequate pressure available to ensure __ (2) __.

- A** (1) Start CRD pump 1P132B; then fully insert control rod 32-21 and declare it INOPERABLE
(2) that the control rod would insert following a scram.
- B** (1) Start CRD pump 1P132B; then fully insert control rod 32-21 and declare it INOPERABLE
(2) that the control rod can be driven.
- C** (1) Scram the Reactor per ON-155-007, LOSS OF CRD SYSTEM FLOW and ON-100-101, SCRAM, SCRAM IMMINENT.
(2) that the control rod would insert following a scram.
- D** (1) Scram the Reactor per ON-155-007, LOSS OF CRD SYSTEM FLOW and ON-100-101, SCRAM, SCRAM IMMINENT.
(2) that the control rod can be driven.

Question Number: 100

Answers:

A

B

C

D

References Provided to Applicant:

Justification

CHOICE (A) - No
WRONG: must scram
VALID DISTRACTOR: these are the TS required actions.

CHOICE (B) - No
WRONG: must scram and wrong reason
VALID DISTRACTOR: mirror image

CHOICE (C) - YES

CHOICE (D) - No
WRONG: wrong reason
VALID DISTRACTOR: correct response.

References

Clinton Exam of August 2002 (Question ID 21762)
ON-155-007
TM-OP-055
TS Basis for 3.1.5

Comments and Question Modification History

GXJ

THF

RJC

SSES

10 CFR 55.43 (b)(2), (5), (6)

Gil 10/16/05 - "A" implausible with rod fully inserted
R - yes but that is the REASON for inserting the rod to begin with.

Gil 10/17/05 - o.k. possibly misread.

NRC K/A System/E/A

System

Number

RO

SRO

CFR Link

NRC K/A Generic

System 2.4 Emergency Procedures /Plan

Number 2.4.11

RO 3.4

SRO 3.6

CFR Link (CFR: 41.10 / 43.5 / 45.13)

Knowledge of abnormal condition procedures.