

**Administrative Documents**  
**WATTS BAR EXAM 2002-301**

**50-390**  
**NOVEMBER 26 &**  
**DECEMBER 9 - 13, 2002**

1. ✓ Exam Preparation Checklist ..... ES-201-1
2. ✓ Exam Outline Quality Checklist ..... ES-201-2
3. ✓ Exam Security Agreement ..... ES-201-3 ✓
4. ✓ Administrative Topics Outline (Final) ..... ES-301-1 ✓
5. ✓ Control Room Systems and Facility Walk-through Test Outline  
(Final) ..... ES-301-2 ✓
6. ✓ Operating Test Quality Check Sheet ..... ES-301-3 ✓
7. ✓ Simulator Scenario Quality Check Sheet ..... ES-301-4 ✓
8. ✓ Transient and Event Checklist ..... ES-301-5 ✓
9. ✓ Competencies Checklist ..... ES-301-6 ✓
10. ✓ Written Exam Quality Check Sheet ..... ES-401-7 ✓
11. ✓ (Written Exam Review Worksheet) ..... ES-401-9
12. ✓ Written Exam Grading Quality Checklist ..... ES-403-1
13. ✓ Post-Exam Check Sheet ..... ES-501-1

Facility: _____		Date of Examination: _____
Examinations Developed by:      Facility / NRC (circle one)		
Target Date*	Task Description / Reference	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a & b)	LM
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	LM
-120	3. Facility contact briefed on security & other requirements (C.2.c)	LM
-120	4. Corporate notification letter sent (C.2.d)	LM
[-90]	[5. Reference material due (C.1.e; C.3.c)]	LM
-75	6. Integrated examination outline(s) due (C.1.e & f; C.3.d)	LM
-70	7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)	LM
-45	8. Proposed examinations, supporting documentation, and reference materials due (C.1.e, f, g & h; C.3.d)	LM
-30	9. Preliminary license applications due (C.1.i; C.2.g; ES-202)	LM
-14	10. Final license applications due and assignment sheet prepared (C.1.i; C.2.g; ES-202)	LM
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	LM
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f & h; C.3.g)	LM
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	LM
-7	14. Final applications reviewed; assignment sheet updated; waiver letters sent (C.2.g, ES-204)	LM
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee and authorization granted to give written exams (if applicable) (C.3.k)	LM
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	LM
<p>* Target dates are keyed to the examination date identified in the corporate notification letter. They are for planning purposes and may be adjusted on a case-by-case basis in coordination with the facility licensee.</p> <p>[ ] Applies only to examinations prepared by the NRC.</p>		

Facility:		Date of Examination:		
Item	Task Description	Initials		
		a	b*	c#
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model per ES-401.	RLM	NA	LM
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.	RLM	NA	LM
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	RLM	NA	LM
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	RLM	NA	LM
2. S I M	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, and major transients.	RLM	NA	LM
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity; ensure each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s)*, and scenarios will not be repeated over successive days.	RLM	NA	LM
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	RLM	NA	LM
3. W / T	a. Verify that: (1) the outline(s) contain(s) the required number of control room and in-plant tasks, (2) no more than 30% of the test material is repeated from the last NRC examination, (3)* no tasks are duplicated from the applicants' audit test(s), and (4) no more than 80% of any operating test is taken directly from the licensee's exam banks.	RLM	NA	LM
	b. Verify that: (1) the tasks are distributed among the safety function groupings as specified in ES-301, (2) one task is conducted in a low-power or shutdown condition, (3) 40% of the tasks require the applicant to implement an alternate path procedure, (4) one in-plant task tests the applicant's response to an emergency or abnormal condition, and (5) the in-plant walk-through requires the applicant to enter the RCA.	RLM	NA	LM
	c. Verify that the required administrative topics are covered, with emphasis on performance-based activities.	RLM	NA	LM
	d. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on successive days.	RLM	NA	LM
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	RLM	NA	LM
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	RLM	NA	LM
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	RLM	NA	LM
	d. Check for duplication and overlap among exam sections.	RLM	NA	LM
	e. Check the entire exam for balance of coverage.	RLM	NA	LM
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	RLM	NA	LM

	Printed Name / Signature		Date
a. Author	R. L. Monk/ <u>RL Monk / RL Monk</u>		11/25/02
b. Facility Reviewer (*)	N/A		
c. NRC Chief Examiner (#)	L. R. Miller <u>L. R. Miller / Roy R Miller</u>		11/25/02
d. NRC Supervisor	<u>C. T. Hopper / C. T. Hopper</u>		11/25/02

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 12/19/02 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC. Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 12/19/02. From the date that I entered into this security agreement until the completion of examination administration, I did not instruct, evaluate, or provide performance feedback to those applicants who were administered these licensing examinations, except as specifically noted below and authorized by the NRC.

PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATENOTE
George Pickar	RO/Instructor	<i>George Pickar</i>	5/23/02	<i>George Pickar</i>	12/13/02
Albert V. White	SRO Instructor	<i>Albert V. White</i>	10/18/02	<i>Albert V. White</i>	12/13/02
ANDREW H. EVANS	Operations Training Manager	<i>Andrew H. Evans</i>	11/1/02	<i>Andrew H. Evans</i>	12/13/02
JOHN B. RODEN	OPS Sup't	<i>John B. Roden</i>	11/14/02	<i>John B. Roden</i>	12/14/02
Kenneth D. Debar	Instructor	<i>Kenneth D. Debar</i>	11/04/02	<i>Kenneth D. Debar</i>	12/14/02
William C. Boffly	Simulator Services	<i>William C. Boffly</i>	11/09/02	<i>William C. Boffly</i>	12/14/02
Edward J. Knablanik	Sim SUCS	<i>Edward J. Knablanik</i>	11/15/02	<i>Edward J. Knablanik</i>	12/14/02
KEVIN D. GARRETT	Sim SUCS	<i>Kevin D. Garrett</i>	11/15/02	<i>Kevin D. Garrett</i>	12/13/02
James D. Knight	Sim SUCS	<i>James D. Knight</i>	11/17/02	<i>James D. Knight</i>	12/13/02
GRACE R. DAVIS	SRO Instructor	<i>Grace R. Davis</i>	11/17/02	<i>Grace R. Davis</i>	12/13/02
GRAIG S. FAULKNER	Reactor Eng	<i>Graig S. Faulkner</i>	11/17/02	<i>Graig S. Faulkner</i>	12/13/02
Gray L. Newman	SRO Instructor	<i>Gray L. Newman</i>	11/22/02	<i>Gray L. Newman</i>	12/13/02
William Brickman	SRO Instructor	<i>William Brickman</i>	11/26/02	<i>William Brickman</i>	12/13/02
HARRY J. VOYLES	SRO INSTRUCTOR	<i>Harry J. Voyles</i>	12/19/02	<i>Harry J. Voyles</i>	12/13/02
			12/19/02		12/13/02

NOTES:

Facility: <b>WATTS BAR</b>		Date of Examination: <b>11-9-13/02</b>
Examination Level (circle one): <b>RO / SRO</b>		Operating Test Number <b>1</b>
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations	a. Calculate Shutdown Margin (NEW)
		b. Complete Shift Turnover Checklist (NEW)
A.2	Equipment Control	Complete Shift Daily Surveillance Log Mode One and Evaluate Surveillance Log (NEW)
A.3	Radiation Control	Access a High Radiation Area (New)
A.4	<b><u>Emergency Procedures/Plan</u></b> Emergency Plan implementation	Classify the Event per the REP (Security Event) - SRO (NRC-JPM-NEW)
		Medical Emergency Response (RO)

Facility: <u>Watts Bar</u>		Date of Examination: <u>12/9-13/02</u>
Exam Level (circle one): <u>RO / SRO(I) / SRO(U)</u>		Operating Test No.: <u>1</u>
<b>B.1 Control Room Systems</b>		
System / JPM Title	Type Code*	Safety Function
a. Transfer a 6.9KV RCP Board (Alt to Normal) per SOI-202.01 (JPM #042) <u>3-OT-JPMR042</u>	DS	6
b. <b>Transfer ECCS to RHR Containment Sump per ES-1.3 (JPM #069)</b> <u>3-OT-JPMR069</u>	MAS	3
c. Depressurize the RCS Per ES-0.4 (JPM #126) 3-OT-JPMR126	DAS	2
d. <b>Respond to High Containment Pressure</b> <u>JPMR125A</u>	DS	5
e. Transfer Steam Dumps to Tavg Mode (NRC-JPM-New)	NS	4S
f. <b>Retrieve a Dropped Rod per AOI-2 (JPM #95A)</b> <u>JPMR095A</u>	DAS	1
g. Remove SRM N132 from Service (NRC-JPM-New)	NLS	7
<b>B.2 Facility Walk-Through</b>		
a. <b>Respond to Steam Binding of 1A-A AFW Pump per SOI-3.02 (3-OT-JPMA065)</b> <u>3-OT-JPMA065</u>	DR	4S
b. <b>Rolling 1B-B Diesel Generator for Water in Cylinders per SOI-82.02 (JPM #048)</b> <u>JPMA048</u>	D	6
c. Perform LOCAL restart of Control and Service Air Compressors per AOI-10 (3-OT-JPMA001C) <u>3-OT-JPMA001C</u>	DA	8
* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA Note: <b>Bold items designate SROU JPMs.</b>		

*FINAL*

Facility: Watts Bar		Date of Examination: 12/09-13		Operating Test Number: 1	
1. GENERAL CRITERIA		Initials			
		a	b*	c#	
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	LRM	N/A	GTH	
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	LRM	N/A	GTH	
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).	LRM	N/A	GTH	
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	LRM	N/A	GTH	
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	LRM	N/A	GTH	
2. WALK-THROUGH (CATEGORY A & B) CRITERIA		--	--	--	
a.	Each JPM includes the following, as applicable: <ul style="list-style-type: none"> <li>• initial conditions</li> <li>• initiating cues</li> <li>• references and tools, including associated procedures</li> <li>• reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee</li> <li>• specific performance criteria that include:                         <ul style="list-style-type: none"> <li>- detailed expected actions with exact criteria and nomenclature</li> <li>- system response and other examiner cues</li> <li>- statements describing important observations to be made by the applicant</li> <li>- criteria for successful completion of the task</li> <li>- identification of critical steps and their associated performance standards</li> <li>- restrictions on the sequence of steps, if applicable</li> </ul> </li> </ul>	LRM	N/A	GTH	
b.	The prescribed questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	N/A	N/A	N/A	
c.	Repetition from operating tests used during the previous licensing examination is within acceptable limits (30% for the walk-through) and do not compromise test integrity.	LRM	N/A	GTH	
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	LRM	N/A	GTH	
3. SIMULATOR (CATEGORY C) CRITERIA		--	--	--	
a.	The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached	LRM	N/A	GTH	

	Printed Name / Signature		Date
a. Author	<u>L.R. Miller</u>	<u><i>L.R. Miller</i></u>	<u>11/25/02</u>
b. Facility Reviewer(*)	<u>N/A</u>		
c. NRC Chief Examiner (#)	<u>B.T. Hopper</u>	<u><i>George J. Hopper</i></u>	<u>11/25/02</u>
d. NRC Supervisor	<u>MIKE ERNSTES</u>	<u><i>Mike Ernestes</i></u>	<u>11/25/02</u>

NOTE:        \* The facility signature is not applicable for NRC-developed tests.  
              # Independent NRC reviewer initial items in Column "c;" chief examiner concurrence required.

DRAFT

Facility: Watts Bar		Date of Examination: 12/09-13		Operating Test Number: 1	
1. GENERAL CRITERIA			Initials		
			a	b*	c#
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	ⓐ LM			MM
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	ⓐ LM			MM
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).	ⓐ LM			MM
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	ⓐ LM			MM
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	ⓐ LM			MM
2. WALK-THROUGH (CATEGORY A & B) CRITERIA			--	--	--
a.	Each JPM includes the following, as applicable: <ul style="list-style-type: none"> <li>• initial conditions</li> <li>• initiating cues</li> <li>• references and tools, including associated procedures</li> <li>• reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee</li> <li>• specific performance criteria that include:                         <ul style="list-style-type: none"> <li>- detailed expected actions with exact criteria and nomenclature</li> <li>- system response and other examiner cues</li> <li>- statements describing important observations to be made by the applicant</li> <li>- criteria for successful completion of the task</li> <li>- identification of critical steps and their associated performance standards</li> <li>- restrictions on the sequence of steps, if applicable</li> </ul> </li> </ul>	LM			MM
b.	The prescribed questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	N/A			MM
c.	Repetition from operating tests used during the previous licensing examination is within acceptable limits (30% for the walk-through) and do not compromise test integrity.	LM			MM
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	LM			MM
3. SIMULATOR (CATEGORY C) CRITERIA			--	--	--
a.	The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.	ⓐ			MM
		Printed Name / Signature		Date	
a.	Author	<i>Lee Miller / Lee Miller</i>		10/31/02	
b.	Facility Reviewer(*)	_____		_____	
c.	NRC Chief Examiner (#)	<i>L. Williams / Ned Hyman</i>		10/31/02	
d.	NRC Supervisor	<i>Mike G. ...</i>		10/31/02	
NOTE: * The facility signature is not applicable for NRC-developed tests. # Independent NRC reviewer initial items in Column "c;" chief examiner concurrence required.					

*FINAL*

Facility:	Watt Bar	Date of Exam:	12/09/02	Scenario Numbers:	1 / 2 / 3	Operating Test No.:	1	
QUALITATIVE ATTRIBUTES						Initials		
						a	b*	c#
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.				RLM		LRM	
2.	The scenarios consist mostly of related events.				RLM		LRM	
3.	Each event description consists of · the point in the scenario when it is to be initiated · the malfunction(s) that are entered to initiate the event · the symptoms/cues that will be visible to the crew · the expected operator actions (by shift position) · the event termination point (if applicable)				RLM		LRM	
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.				RLM		LRM	
5.	The events are valid with regard to physics and thermodynamics.				RLM		LRM	
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.				RLM		LRM	
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.				RLM		LRM	
8.	The simulator modeling is not altered.				RLM		LRM	
9.	The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.				RLM		LRM	
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.4 of ES-301.				RLM		LRM	
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).				RLM		LRM	
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).				RLM		LRM	
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.				RLM		LRM	
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)					Actual Attributes	--	--	--
1.	Total malfunctions (5-8)				4/4	⊙		LRM
2.	Malfunctions after EOP entry (1-2)				2/2	⊙		LRM
3.	Abnormal events (2-4)				2/2	⊙		LRM
4.	Major transients (1-2)				1/1	⊙		LRM
5.	EOPs entered/requiring substantive actions (1-2)				1/1	⊙		LRM
6.	EOP contingencies requiring substantive actions (0-2)				0/1	⊙		LRM
7.	Critical tasks (2-3)				1/3	⊙		LRM

**DRAFT**

Facility:	Watt Bar	Date of Exam:	12/09/02	Scenario Numbers:	1 / 2 / 3	Operating Test No.:	
QUALITATIVE ATTRIBUTES						Initials	
						a	b*
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.	RL M			LM		
2.	The scenarios consist mostly of related events.	RL M			LM		
3.	Each event description consists of <ul style="list-style-type: none"> <li>· the point in the scenario when it is to be initiated</li> <li>· the malfunction(s) that are entered to initiate the event</li> <li>· the symptoms/cues that will be visible to the crew</li> <li>· the expected operator actions (by shift position)</li> <li>· the event termination point (if applicable)</li> </ul>	RL M			LM		
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.		Ⓟ		LM		
5.	The events are valid with regard to physics and thermodynamics.		Ⓟ		LM		
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	RL M			LM		
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.	RL M			LM		
8.	The simulator modeling is not altered.	RL M			LM		
9.	The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.		Ⓟ		LM		
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.4 of ES-301.	RL M			LM		
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	RL M			LM		
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).	RL M			LM		
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	RL M			LM		
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)		Actual Attributes		--	--	--	
1.	Total malfunctions (5-8)	4/4/4(4)		Ⓟ		LRM	
2.	Malfunctions after EOP entry (1-2)	2/1/1(2)		Ⓟ		LRM	
3.	Abnormal events (2-4)	1/4/1(2)		Ⓟ		LRM	
4.	Major transients (1-2)	1/1/1(1)		Ⓟ		LRM	
5.	EOPs entered/requiring substantive actions (1-2)	1/1/1(1)		Ⓟ		LRM	
6.	EOP contingencies requiring substantive actions (0-2)	0/1/0(0)		Ⓟ		LRM	
7.	Critical tasks (2-3)	1/1/2(2)		Ⓟ		LRM	

Watts Bar Nuclear Plant  
OPERATING TEST NO.: 1

FINAL

Applicant Type	Evolution Type	Minimum Number	Scenario Number								
			RO1BOP		RO2BOP		RO3BOP		RO4BOP		
RO	Reactivity	1	0		7						
	Normal	1		1		1					
	Instrument / Component	4	2,3	3,4,5	2,3,8	4,5,7					
	Major	1	6	6	9	9					

R<sub>1</sub> R<sub>2</sub> R<sub>2</sub> R<sub>1</sub>

As RO	Reactivity	1	0		7						
	Normal	0									
	Instrument / Component	2	2,3		2,3,8						
	Major	1	6		9						

SRO-I

I<sub>2,4</sub> I<sub>1,3</sub>

As SRO	Reactivity	0	0		7						
	Normal	1	1		4						
	Instrument / Component	2	2,3,4		2,3,4,5,7,8						
	Major	1	6		9						

I<sub>1,3</sub> I<sub>2,4</sub>

SRO-U	Reactivity	0	0		7						
	Normal	1	1		4						
	Instrument / Component	2	2,3,4,5		2,3,4,5,7,8						
	Major	1	6		9						

- Instructions:
- (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.
  - (2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.
  - (3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: Robert L. Monk, #1 & #2

NRC Reviewer: Lee R. Miller,

Watts Bar Nuclear Plant  
OPERATING TEST NO.: 1

DRAFT

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			RO1BOP	RO2BOP	RO3BOP	RO4BOP
RO	Reactivity	1	1	5		
	Normal	1	3	3		
	Instrument / Component	4	1,4	2,5	2,4	1,7
	Major	1	6	6	10	10

R1 R2 R2 R1

As RO	Reactivity	1	1	5	6			
	Normal	0	3	3	3			
	Instrument / Component	2	1,4	2,5	2,4	1,7	2,4	5,7
	Major	1	6	6	10	10	8	8
SRO-I	Reactivity	0	1	5	6			
	Normal	1	3	3	3			
	Instrument / Component	2	1,2,4,5	1,2,3,7	2,4,5,7			
	Major	1	6	10	8			

l<sub>2,5</sub> l<sub>3</sub> l<sub>1,4</sub> l<sub>2</sub> l<sub>3</sub> l<sub>1</sub>

SRO-U	Reactivity	0	1	5		
	Normal	1	3	3		
	Instrument / Component	2	1,2,4,5	1,2,3,7		
	Major	1	6	10		

- Instructions:
- (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.
  - (2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.
  - (3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: Robert L. Monk, #1, #2 & #3  
NRC Reviewer: Lee R. Miller

Competencies	Applicant I <sub>1,3</sub> RO/SRO-I/SRO-U				Applicant I <sub>2,4</sub> RO/SRO-I/SRO-U				Applicant RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	SRO 1	RO 2	3	4	RO 1	SRO 2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	2,3,4 .6	2,3,7 .8			2,3,6	2,3,4 .5,6, 7						
Diagnose Events and Conditions	2,3,4 .5,6	2,3,7 .8			2,3,6	2,3,4 .5,6, 7						
Understand Plant and System Response	0,1,2 .3,4, 5,6	2,3,7 .8			0,2,3 .6	0,1,2 .3,4, 5,6,7						
Comply With and Use Procedures (1)	0,1,3 .4,6	2,7,8			0,3,6	0,1,3 .4,6, 7						
Operate Control Boards (2)		2,3,7 .8			0,2,3 .6							
Communicate and Interact With the Crew	0,1,2 .3,4, 5,6	2,3,7 .8			0,2,3 .6	0,1,2 .3,4, 5,6,7						
Demonstrate Supervisory Ability (3)	0,1,2 .3,4, 5,6					0,1,2 .3,4, 5,6,7						
Comply With and Use Tech. Specs. (3)	3,4					2,4						

Notes:

- (1) Includes Technical Specification compliance for an RO.
- (2) Optional for an SRO-U.
- (3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: Robert L. Monk

NRC Reviewer: Lee R. Miller

Competencies	Applicant R <sub>1</sub> RO/SRO-I/SRO-U				Applicant R <sub>2</sub> RO/SRO-I/SRO-U				Applicant U RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	RO 1	BOP 2	3	4	BOP 1	RO 2	3	4	SRO 1	SRO 2	3	4
Understand and Interpret Annunciators and Alarms	2,3,6	4,5,7			3,4,6	2,3,7,8			2,3,4,6	2,3,4,5,6,7		
Diagnose Events and Conditions	2,3,6	4,5,7			3,4,5,6	2,3,7,8			2,3,4,5,6	2,3,4,5,6,7		
Understand Plant and System Response	0,2,3,6	1,4,5,7			1,3,4,5,6	2,3,7,8			0,1,2,3,4,5,6	0,1,2,3,4,5,6,7		
Comply With and Use Procedures (1)	0,3,6	1,4,7			1,3,4,6	2,7,8			0,1,3,4,6	0,1,3,4,6,7		
Operate Control Boards (2)	0,2,3,6	1,4,7			1,3,4,5,6	2,3,7,8						
Communicate and Interact With the Crew	0,2,3,6	1,4,5,6,7			1,3,4,5,6	2,3,7,8			0,1,2,3,4,5,6	0,1,2,3,4,5,6,7		
Demonstrate Supervisory Ability (3)									0,1,2,3,4,5,6	0,1,2,3,4,5,6,7		
Comply With and Use Tech. Specs. (3)									3,4	2,4		

Notes:

- (1) Includes Technical Specification compliance for an RO.
- (2) Optional for an SRO-U.
- (3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: Robert L. Monk

NRC Reviewer: Lee R. Miller

Watts Bar Nuclear Plant  
December 2002

**DRAFT**

Competencies	Applicant I <sub>1,4</sub> RO/SRO-I/SRO-U				Applicant I <sub>2,5</sub> RO/SRO-I/SRO-U				Applicant I <sub>3</sub> RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	SRO 1	RO 2	BOP 3	4	RO 1	BOP 2	SRO 3	4	BOP 1	SRO 2	RO 3	4
Understand and Interpret Annunciators and Alarms	1,2,6	2,4,5,6,9,10	5,6,7,8		1,6	6,7,8,10	2,4,5,6,7,8		2	2,4,6,7,8,9,10	2,4,8	
Diagnose Events and Conditions	1,2,4,5,6	2,4,5,6,9,10	5,6,7,8		1,4,6	1,6,7,8,10	2,4,5,6,7,8		2,5,6	1,2,4,5,6,7,8,9,10	2,4,8	
Understand Plant and System Response	1,2,4,5,6	2,4,5,9,10	3,5,6,7,8		1,4,6	1,7,8,10	2,3,4,5,6,7,8		2,5	1,2,4,5,7,8,9,10	2,4,8	
Comply With and Use Procedures (1)	1,3,6	2,4,5,6,9,10	3,6,8		1,6	3,6,7,10	2,3,4,6,8		3,6	2,3,4,5,6,9,10	2,4,8	
Operate Control Boards (2)		2,4,5,9,10	3,5,6,7,8		1,4	1,3,7,10			2,3,5		2,4,8	
Communicate and Interact With the Crew	1,2,3,4,5,6	2,4,5,6,8,9,10	3,5,6,7,8		1,4,6	1,3,6,7,8,10	2,3,4,5,6,7,8		1,2,3,5,6	1,2,3,4,5,6,8,9,10	2,4,8	
Demonstrate Supervisory Ability (3)	1,2,3,4,5,6						1,2,3,4,5,6,7,8			1,2,3,4,5,6,8,9,10		
Comply With and Use Tech. Specs. (3)	1						1			2,3,6,7		

Notes:  
 (1) Includes Technical Specification compliance for an RO.  
 (2) Optional for an SRO-U.  
 (3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: Robert L. Monk

NRC Reviewer: Lee R. Miller

**DRAFT**

Competencies	Applicant R <sub>1</sub> RO/SRO-I/SRO-U				Applicant R <sub>2</sub> RO/SRO-I/SRO-U				Applicant U RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	RO 1	BOP 2	3	4	BOP 1	RO 2	3	4	SRO 1	SRO 2	3	4
Understand and Interpret Annunciators and Alarms	1,6	6,7,8 ,10			2	2,4,5 ,6,9, 10			1,2,6	2,4,6 ,7,8, 9,10		
Diagnose Events and Conditions	1,4,6	1,6,7 ,8,10			2,5,6	2,4,5 ,6,9, 10			1,2,4, 5,6	1,2,4 ,5,6, 7,8,9 ,10		
Understand Plant and System Response	1,4,6	1,7,8 ,10			2,5	2,4,5 ,9,10			1,2,4, 5,6	1,2,4 ,5,7, 8,9, 10		
Comply With and Use Procedures (1)	1,6	3,6,7 ,10			3,6	2,4,5 ,6,9, 10			1,3,6	2,3,4 ,5,6, 9,10		
Operate Control Boards (2)	1,4	1,3,7 ,10			2,3,5	2,4,5 ,9,10						
Communicate and Interact With the Crew	1,4,6	1,3,6 ,7,8, 10			1,2,3 ,5,6	2,4,5 ,6,8, 9,10			1,2,3, 4,5,6	1,2,3 ,4,5, 6,8,9 ,10		
Demonstrate Supervisory Ability (3)									1,2,3, 4,5,6	1,2,3 ,4,5, 6,8,9 ,10		
Comply With and Use Tech. Specs. (3)									1	2,3,6 ,7		

Notes:  
 (1) Includes Technical Specification compliance for an RO.  
 (2) Optional for an SRO-U.  
 (3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: Robert L. Monk

NRC Reviewer: Lee R. Miller

Final

Facility: Watts Bar		Date of Exam: 11/26/02		Exam Level: RO/SRO		
Item Description				Initial		
				a	b*	c#
1.	Questions and answers technically accurate and applicable to facility			RLM	N/A	LRM
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available			RLM	N/A	LRM
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401			RLM	N/A	LRM
1.	Question selection and duplication from the last two NRC licensing exams appears consistent with a systematic sampling process					LRM
5.	Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input 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)			RLM	N/A	LRM
6.	Bank use meets limits (no more than 75 percent from the bank at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank	Modified	New		
		56/52	12/10	32/38	RLM	N/A
7.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory		C/A		
		45/43		55/57	RLM	N/A
8.	References/handouts provided do not give away answers			RLM	N/A	LRM
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			RLM	N/A	LRM
10.	Question psychometric quality and format meet ES, Appendix B, guidelines			RLM	N/A	LRM
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet			RLM	N/A	LRM
				Printed Name / Signature		Date
a. Author	R.L. Monk		<i>R.L. Monk</i>		11/25/02	
b. Facility Reviewer (*)	N/A					
c. NRC Chief Examiner (#)	L. R. Miller		<i>L. R. Miller</i>		11/25/02	
d. NRC Regional Supervisor	M.E. Ernstes		<i>M. E. Ernstes</i>		11/25/02	
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.						

DRAFT

Facility: Watts Bar		Date of Exam: 11/26/02		Exam Level: RO/SRO		
Item Description				Initial		
				a	b*	c*
1.	Questions and answers technically accurate and applicable to facility	(P)	N/A	LM		
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available	(P)		LM		
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401	(P)		LM		
1.	Question selection and duplication from the last two NRC licensing exams appears consistent with a systematic sampling process			LM		
5.	Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input 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)	(P)		LM		
6.	Bank use meets limits (no more than 75 percent from the bank at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank 56/52 58/53	Modified 12 4/9/10	New 32/38	(P)	LM
7.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory 45/43	C/A 55/57	(P)	LM	
8.	References/handouts provided do not give away answers	(P)		LM		
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	(P)		LM		
10.	Question psychometric quality and format meet ES, Appendix B, guidelines	(P)		LM		
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet	(P)	N/A	LM		
		Printed Name / Signature			Date	
a. Author	<i>KL #ford</i>				10/21/02	
b. Facility Reviewer (*)	<i>L Miller</i>				10/31/02	
c. NRC Chief Examiner (#)	<i>M.E. Roberts</i>	<i>C. T. Hopper / A. D. Hopper</i>			11/25/02	
d. NRC Regional Supervisor					10/31/02	
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.						

## Written Exam Review Worksheet

Attached are the facilitie's marked exam questions. All comments were incorporated into the final exam.

## QUESTIONS REPORT

for WBfindraft

1. 001AK3.01 001/T1G2/T1G1//C/A (3.2/3.6)/B/WB02301/C/EL

Given the following plant conditions:

- Plant at 65% power.
- Impulse pressure transmitter, 1-PT-1-73, fails <sup>HIGH</sup> high causing rods to step at 72 steps per minute.
- Rods were placed in MANUAL causing rod motion to stop 14 steps from their original position.

Which ONE of the following describes the appropriate course of action?

- A. Ensure turbine load remains constant and dilute to restore original rod position.
- B. Reduce turbine load to compensate for the rise in reactor power.
- C. Withdraw rods manually to restore Tavg to program.
- D. Insert rods manually to drop Tavg to program.

The correct answer is

- a. Incorrect - Diluting would further increase the difference between Tavg and Tref if turbine load were held constant.
- b. Incorrect - Turbine load would need to be increased to offset the increase in T-avg due to rods stepping out from the NI failure.
- c. Incorrect - withdrawing rods would further increase the difference between Tavg and Tref.
- d. Correct - Tavg would be elevated due to the rods stepping out on the PT failure. Inserting rods manually to decrease Tavg to program is appropriate.

Common

**QUESTIONS REPORT**  
for WBfindraft

2. 001K1.05 001/T2G1/T2G1/NI FAILURE/C/A/N/WB02301/C/KFO

Given the following:

- Unit power is 66%
- Control Rods are in Automatic
- No operator actions

Which ONE of the following would cause rods move in, then remain at the new position with a reduced T-avg.

- A. Loop A Th fails low
- B. PT 1- 73 fails high
- C. Loop A Tc fails low
- D. <sup>PRM</sup> Pwr channel N-41 fails high

New, REF: 3-OT-SYS85A

- a. incorrect - rod control circuit uses auct High Tave - failing low does not make this the auct hi
- b. incorrect - this channel of turbine pressure inputs the control rod logic and the Tref program is topped out at 588.2
- c. incorrect - rod control circuit uses auct High Tave - failing low does not make this the auct hi
- d. correct - Rods move in until the power mismatch rate signal decays, then remain at the new position with a reduced T-avg.

QUESTIONS REPORT  
for WBfindraft

3. 002K5.10 001/T2G2/T2G2/TEMPERATURE MISMATCH/C/A 3.6/4.1/N/WB020301/C/RLM

GIVEN THE following:

- Unit 1 is at 94% power and ramping up. *216*
- Rods are in automatic with Bank D at 210 steps
- The operator has met all requirements to ~~increase~~ *raise* turbine load and has pressed the turbine control GO button
- Turbine control valves are opening and megawatts are ~~increasing~~ *rising*
- Tav<sub>g</sub> is ~~in~~ *on* program

Which ONE of the following describes Tav<sub>g</sub> behavior assuming no dilution by the operator *as the turbine load is raised to bring unit to 100%?*

- A. ~~Tav<sub>g</sub> and Tref will increase and continue to be matched until the control valves reach the limiter setting.~~ *Tref/ rise and continue to be matched*
- B. ~~Tref will increase until the control valves reach the limiter setting, but Tav<sub>g</sub> will remain constant.~~ *rise*
- C. ~~Tav<sub>g</sub> and Tref will remain constant and matched as the control valves reach the limiter setting.~~
- D. ~~Tref will increase and Tav<sub>g</sub> will initially increase, but then Tav<sub>g</sub> will decrease as the control valves reach the limiter setting.~~ *rise drop*

Ref: WB lesson plant 3-OT-SYS085A, obj 7 & 21

Distactor analysis:

D is correct because Bank D hits the C11 rod stop at 220 steps. As the governor valves continue to open, turbine power continues to rise along with Pimp (Tref). However, no more positive reactivity is added (no dilution per stem) and no rods due to C11, but power defect adds negative reactivity which drives Tav<sub>g</sub> down until Moderator temp coefficient balances at a lower Tav<sub>g</sub>.

A, B, and C are incorrect they have Tav<sub>g</sub> either rising or remaining constant.

*when with given conditions Tav<sub>g</sub> would have initially dropped  
revised Rodstep: Power to ensure not enough rods to reach 100%*

**QUESTIONS REPORT**  
for WBfindraft

4. 004K5.04.001/T2G1/T2G1/OXYGEN/M (2.8/3.2)/B/WB02301/C/KFO

Which ~~one~~<sup>ONE</sup> of the following is the primary reason for maintaining a hydrogen cover gas in the VCT during normal at power operations?

- A. to assure N-16 concentrations are ALARA
- B. to maintain RCS pH within TRM limits
- C. to maintain conductivity below .017 micro Mhos
- D. to maintain oxygen concentration below the TRM upper limit

Ref: NA 2002 - validated to WB Lesson plan 3-OT-SYS062A, TRM 3.4.4 Chemistry

- a. incorrect N-16 is a bi-product of the nuclear reaction not influenced by hydrogen cover gases
- b. incorrect RCS pH is controlled by primary chemistry not with cover gases
- c. incorrect conductivity is controlled by water quality efforts not cover gases
- d. correct Hydrogen cover gases "scavenge" oxygen, thus lowering the oxygen concentration

## QUESTIONS REPORT

for WBfindraft

5. 006A1.11 001/T2G2/T2G2//M (3.1/3.4)/B/WB02301/C/EL/KFO

Given the following plant conditions:

- A SGTR has occurred on SG #1.
- ES-3.1, "Post SGTR Cooldown Using Backfill", is in progress.
- Ruptured SG level is 25%.
- RCS is at 390°F.
- RCS is at 400 psig.
- Cooling down using steam dumps to condenser.
- RCP #4 in service.

ES-3.1 step 13 requires a return to step 3 if RCS temperature is greater than 200°F.

Step 3 requires the operator to ensure adequate shutdown margin.

Why is it necessary to reverify adequate shutdown margin at this point in the procedure?

- A. The RCS temperature change during cooldown will cause significant boron concentration changes due to PZR outsurge.
- B. Charging to maintain PZR level during cooldown will cause significant boron concentration changes.
- C. The secondary fluid in the ruptured SG will cause significant boron concentration changes.
- D. The auxiliary spray will cause significant boron concentration changes.

The correct answer is C

**QUESTIONS REPORT**  
for WBfindraft

6. 006K1.07 001/T2G2/T2G2//C/A (2.6/2.9)/B/WB02301/C/EL/KFO

Given the following conditions:

- The plant is operating at 100% power.
- Inadvertent Safety Injection occurred
- #1 SG level transmitter that controls MDAFW pump LCV failed low.
- #4 SG PORV opened momentarily after the reactor trip and developed a large packing leak.

Which ONE of the following would cause the initial main feedwater isolation during this transient?

- A. The #1 SG level reached 83%.
- B. The safety injection actuation signal.
- C. Tavg dropping to 564°F following the reactor trip.
- D. When the south valve vault level had risen to 4 inches due to the PORV packing leak.

The correct answer is B.

- a. Incorrect - level may reach 83% but FWI would already have been actuated by the SI.
- b. Correct - SI causes immediate FWI.
- c. Incorrect - would normally actuate FWI following a reactor trip however the SI initiated the FWI immediately.
- d. Incorrectly - PORV leak would cause increase in level in the vault room however FWI would have already been actuated by the SI.

QUESTIONS REPORT  
for WBfindraft

7. 008AK1.01 001/T1G2/T1G2//C/A (3.2/3.7)/B/WB02301/C/KFO

Given the following:

- Unit 1 is stable at 100% power
- A pressurizer safety valve opens and fails to reseal and the Unit trips

<sup>ONE</sup> Which of the following indications would the operator expect to see as a result of this event over the next 30 min?

- A. Safety tailpipe temperature would increase to greater than 600 F and then slowly decrease.
- B. Safety tailpipe temperature would increase to greater than 600 F and then slowly increase.
- C. Safety tailpipe temperature would increase to between 220 F and ~~340~~<sup>330</sup> F and then slowly decrease and stabilize.
- D. Safety tailpipe temperature would increase to between 220 F and ~~340~~<sup>330</sup> F and then slowly increase and stabilize.

Ref- Farley 2000, validated for WB -

- a. incorrect - the temperature is correct for pressures of 2240
- b. incorrect - the temperature is correct for pressures of 2240
- c. correct - since it relieves to the PRT, the pressure will increase until the rupture disc relieves (100 psig) and then the pressure (and temperature ) will decrease and eventually stabilize
- d. incorrect - will not continue to increase once the PRT rupture disc relieves.

85

**QUESTIONS REPORT**  
for WBfindraft

8. 010K3.01 001/T2G2/T2G2/PRESS CONTROL/C/A 3.8/3.9/B/WB020301/C/RLM

Given the following:

- Pressurizer pressure is 2230 psig and rising.
- The variable heaters are energized.
- The spray valves are closed.
- The Master Pressure Controller, 1-PIC-68-340A, fails to a constant output equivalent to 2230 psig.

Which ONE of the following describes the response of the pressure control system if the operator takes no further action?

- A. Pressure will rise until PORV's PCV-68-334 and PCV-68-340A open to control pressure.
- B. Pressure will rise until relief valve PCV-68-334 opens to control pressure.
- C. Pressure will rise until the spray valves open to control pressure.
- D. Pressure will cycle on the variable heaters at a higher setpoint.

Ref: WB lesson plan 3-OT-SYS068C

Distractor analysis:

A is incorrect because PORV continues to receive a constant input and therefore remains closed.

B is correct because PORV 334 receives input from PT 323 which is seeing the actual pressure rise.

C is incorrect because the spray valves remain closed because their input is not changing from the master controller and is spray open setpoint.

D is incorrect because the input to the variable heaters is constant at a value less than their shutoff point.

QUESTIONS REPORT  
for WBfindraft

9. 011A3.03 001/T2G2/T2G2/PZR LEVEL/C/A 3.2/3.3/B/WB020301/C/EL/RLM  
Given the following:

- Unit is at 50% power.
- All automatic control systems are in their normal lineup.
- ~~Controlling~~ <sup>level program</sup> pressurizer program level fails to an output corresponding to 50% load.
- Assume no operator action is taken.

<sup>ONE</sup> Which of the following describes the effect on charging flow and PZR level as the plant load is increased to 100%?

- A. Charging flow <sup>raises to maintain</sup> increases and actual PZR level ~~remains~~ constant.
- B. Charging flow <sup>drops</sup> decreases and actual PZR level <sup>drops</sup> decreases.
- C. Charging flow <sup>drops to maintain</sup> decreases and actual PZR level <sup>remains constant</sup> increases.
- D. Charging flow remains constant and actual PZR level <sup>rises</sup> increases.

Reference: WB Lesson Plan 3-OT-SYS068C Obj. #14

Distractor analysis:

A is incorrect because T<sub>av</sub> increases as power increases which will make PZR actual level increase.

B is incorrect, same reason as A

C is correct because as PZR level rises with coolant expansion due to T<sub>av</sub> increase, with LT-339 output at 50%, an error is generated that PZR level is too high, causing charging flow to decrease.

D is incorrect, same as A for PZR level, charging flow increases, see C.

Note, WB exam bank had answer C as "Charging flow rises and actual PZR level rises." Need to check this with them.

*clarified wording in stem*

*revised "C" PZR level to make correct*

*IF third bullet is Controlling PZR level channel <sup>failed</sup> then correct answer would be charging flow rises and PZR level rises.*

*\*This is not a failure of the Controlling PZR Level channel.*

## QUESTIONS REPORT

for WBfindraft

10. 011EA1.04 001/T1G2/T1G1//C/A (4.4/4.4)/B/WB02301/C/EL

Given the following plant conditions:

- Unit 1 tripped due to a Large Break LOCA.
- Containment pressure = 12.5 psid.
- RWST level = 20%.
- Containment Emergency Sump level = 15%.
- RHR Swapover to the Containment Sump could not be performed.
- The operating crew has transitioned to ECA - 1.1, "Loss of RHR Sump Recirculation."
- The crew is performing step 3 of ECA - 1.1, "Loss of RHR Sump Recirculation", to determine the proper Containment Spray pump alignment and operation.

Which ONE of the following actions will result in the Containment Spray pumps being in the proper alignment under the existing plant conditions?

- A. Leave both Containment Spray pumps running until RWST level drops to 8%.
- B. Stop both Containment Spray pumps and place handswitches in "pull-to-lock."
- C.  Stop one Containment Spray pump and allow the remaining pump to take suction from the RWST.
- D. Stop both Containment Spray pumps, until suction can be aligned to the Containment Sump, then restart one pump.

## QUESTIONS REPORT

for WBfindraft

11. 011EK2.02 001/T1G2/T1G1//C/A (2.6/2.7)/B/WB02301/C/EL

Given the following conditions:

- A large break LOCA occurred
- Operators have just completed swapover to Containment Sump
- A loss of offsite power occurs

Which ONE of the following describes the actions required for this condition?

- A. Pull to lock SI pumps and CCPs until the RHR pumps have been restarted after the shutdown boards are reenergized.
- B. ✓ Pull to lock the CCPs until the RHR pumps are restarted after the shutdown boards are reenergized.
- C. Ensure both RHR pumps are started by the blackout sequencer after the diesel generators reenergize the shutdown boards then restart the SI pumps.
- D. Ensure all ECCS pumps are started by the blackout sequencer when the diesel generators reenergize the shutdown boards.

The correct answer is B

**QUESTIONS REPORT**  
for WBfindraft

12. 012K6.10 001/T2G2/T2T2/P-7/M3.3/3.5/N/WB020301/C/RLM

**GIVEN THE FOLLOWING:**

- Unit 1 is at 100% power
- Permissive 70-D, P-7 LO POWER TRIPS BLOCKED illuminates

Which ONE of the following describes the effects on RPS?

- A. The reactor will not trip on Pressurizer High Pressure.
- B. The reactor will not trip on Pressurizer Low Water Level.
- C. The reactor will not trip on Pressurizer Low Pressure.
- D. The reactor will not trip on Loss of Flow in one loop.

Ref: WB Lesson Plan 3-OT-SYS099A, obj. 17

Distractor analysis:

- A is incorrect because P-7 is not an input to the trip.
- B is incorrect because PZR Lo Water Level is not a trip.
- C is correct, because P-7 blocks it when P-7 is off (light on).
- D is incorrect because P-8 is unaffected and trips Rx on 1/4 logic.

## QUESTIONS REPORT

for WBfindraft

13. 013K2.01 001/T2G1/T2G1/PUMP TRIP LOGIC/M (3.6/3.8)/B/WB02301/C/KFO

Given the following:

- 1A-A and 1B-B SI pump breakers are "racked in"
- A fuse blows in the NORMAL DC Trip Circuit for the 1A-A SI pump
- A safety injection (SI) acutation occurs

Which <sup>ONE</sup> of the following describes the response of the SI pumps to the SI signal?

- A. 1B-B SI pump will start, but 1A-A SI pump will not auto start until the control power supply is transferred.
- B. 1B-B SI pump will start, but 1A-A SI pump will not auto start and must be started from MCR handswitch.
- C. Both SI pumps will auto start, but the 1A-A SI pump can not be stopped from the MCR.
- D. Both SI pumps will auto start, but the 1A-A SI pump can not be stopped ~~from the~~ mechanically at the breaker.

Watts Bar exam bank - NEED CONFIRMATION ON BREAKER LOGIC

**QUESTIONS REPORT**  
for WBfindraft

14. 014A4.01 001/T2G2/T2G1/STARTUP/C/A (3.3/3.4)/B/WB02301/C/KFO

Given the following:

- All* Operators are preparing for a reactor startup  
~~Both~~ shutdown banks were withdrawn
- All control banks are ~~still~~ fully inserted
  - The rod control startup reset switch is manipulated in error

*ONE*  
Which of the following describes the required actions to proceed with the startup?

- A. Restore the P/A converter to 230 steps
- B. Restore the shutdown group step counters to 230 steps
- C. Restore the bank overlap unit to 230 steps
- D. Reinsert all shutdown banks

INPO bank - validated for WB lesson plan 3-OT-SYS85A

- a. incorrect - P/A converter does not need to be reset because the control banks are fully inserted
- b. correct - all group step counters are reset to 0 by the reset switch
- c. incorrect - bank overlap counters are at 0 because the control rods are fully inserted
- d. the shutdown group counters can be manually reset - reinsertion is not required

## QUESTIONS REPORT

for WBfindraft

15. 015K4.06 001/T2G1/T2G1//M/B/WB02301/C/KFO

While operating at 90% power, one power range channel of nuclear instrumentation Power Range High Flux Reactor Trip is placed in bypass. *has been removed from service, which resulted in the OTAT trip bistable placed in bypass.*

What is the coincidence for a NIS reactor trip?

<sup>A</sup>  
OTAT

A. 2 out of 4

B. <sup>2</sup>  
~~1~~ out of 3

C. <sup>1</sup>  
~~2~~ out of 4

D. 1 out of 3

INPO bank

- a. incorrect - coincidence changes to 1 out of three when in bypass
- b. correct - coincidence changes to <sup>2</sup>~~1~~ out of 3
- c. incorrect - wrong logic and bypass limited to 4 hours
- d. incorrect - bypass status limited to 4 hours

**QUESTIONS REPORT**  
for WBfindraft

16. 017AK1.04 001/T1G1/T1G1/LOSS OF FLOW/C/A (3.7/4.1)/B/WB02301/C/RLM  
Given the following plant conditions:

- Unit is operating at 30% power.
- All control systems are in *AUTO*.
- Loop 3 Reactor Coolant Pump has just tripped.

Which ONE of the following is the overall plant response?

- A. Reactor trips on HIGH steam generator level when the #3 steam generator level "swells".
- B. ✓ Unit power remains the same with steam flow rising on the other steam generators.
- C. Unit power is reduced to approximately 22% power (3/4 of original power level).
- D. The reactor trips on a Low RCS Flow condition.

WB bank

**QUESTIONS REPORT**  
for WBfindraft

17. 017K3.01 001/T2G1/T2G1/FAILED CORE EXIT/M/B/WB02301/C/KFO

If all core-exit thermocouples are inoperable during an event in which the RCPs were tripped, what indication(s) may be used to verify that natural circulation cooling is occurring?

- A. RCS hot leg temperatures only
- B. RCS cold leg temperatures only
- C. Both RCS cold leg and hot leg temperatures
- D. There are no direct indications to verify natural circulation for this condition.

Bank (NA'02) - validated for Watts Bar, ES-01, "Reactor Trip Response

- a. incorrect - insufficient information
- b. incorrect - insufficient information
- c. correct - the difference in temperatures will be adequate to determine if natural circulation has been established
- d. incorrect, using both hot and cold legs is adequate

**QUESTIONS REPORT**  
for WBfindraft

18. 022AG2.1.32 001/TIG1/TIG1/LOW PRESSURE LETDOWN/M 3.4/3.8/N/WB020301/C/RLM

During water Solid operations with letdown from RHR, SOI-62.01 requires that FCV-62-83, RHR LETDOWN FLOW CONTROL be full open. <sup>1-</sup>

Which ONE of the following describes the basis for this precaution?

- A. To ensure maximum letdown flow rate for purification.
- B. To ensure VCT level can be maintained under all charging flow conditions.
- C. To ensure <sup>1-</sup> PCV-62-81, Letdown Pressure Control can control pressure transients.
- D. To ensure RCS to RHR ~~Supply Line~~ <sup>Suction</sup> Relief Valve (74-505) isn't challenged. <sup>1-~~RFV~~</sup>  
<sub>1-RFV-74-505</sub>

No specific learning objective found.

Distractor analysis:

Answer A is incorrect because charging flow controls letdown flow.

Answer B is incorrect because balancing charging and letdown controls VCT level.

Answer C is correct because with FCV-62-83 less than full open, it can in effect limit flow and prevent pressure reduction when PCV-62-81 fully opens in response to a high pressure transient.

Answer D is incorrect because the suction relief can be challenged by other factors (eg. pump starts) even with FCV-62-83 full open.

**QUESTIONS REPORT**  
for WBfindraft

19. 022G2.1.10 001/T2G1/T2G1/CTMT AIR TEMP/M 2.7/3.9/M/WB020301/C/RLM

Which ONE of the following correctly identifies the minimum and maximum allowable temperatures per Tech Spec for the Containment upper compartment temperature in Mode 2.

- A. Between 85°F and 120°F.
- B. Between 60°F and 110°F.
- C. Between 60°F and 120°F.
- D. Between 85°F and 110°F.

Ref: WB lesson plan 3-OT-SYS030C, obj 3

WB TS 3.6.5

Modified from WB exam bank which asked MODE 1 limits.

Distractor analysis:

See attached TS

**QUESTIONS REPORT**  
for WBfindraft

20. 024AK2.01 001/T1G1/T1G1//M (2.7/2.7)/B/WB02301/C/EL

A condition has occurred which warrants entry into AOI-34, "Immediate Boration". While attempting to borate ~~using the immediate emergency boration flowpath~~, the aligned boric acid pump ~~fails to start~~.  
*TRIPS*

Which ONE of the following Immediate Boration flowpaths should be used in this condition?

- A. To the suction of the CCPs through Emergency Borate valve 1-FCV-62-138 after re-aligning the boric acid pump on tank recirc.
- B. To the suction of the CCPs through Manual Boration valve 1-ISV-62-929 after re-aligning the boric acid pump on tank recirc.
- C. To the suction of the CCPs through 1-FCV-62-135 and 136 using the RWST as the boration source.
- D. *From* To the discharge of the CCPs through 1-FCV-63-~~1~~25 and ~~1~~26 using the BIT as the boration source.

The correct answer is C

*Boric acid pump is normally running*

**QUESTIONS REPORT**  
for WBfindraft

21. 025A3.02 001/T2G1/T2G1//C/A/B/WB02301/C/KFO

Given the following:

- Large Break LOCA has occurred causing a Reactor Trip and Safety Injection
- OAC observes annunciator "Glycol Exp Tank Level HI/HI-Hi" is lit

*ONE*

Which of the following describes the most likely reason the annunciator is illuminated?

- A. Phase A closes the glycol containment isolation valves; glycol inside containment heats up and relief valves on the auxiliary building side of the isolation valves relieve glycol into the glycol expansion tank.
- B. Phase A closes the glycol containment isolation valves; glycol inside containment heats up and expands into the glycol expansion tank.
- C. Phase B closes the glycol containment isolation valves; glycol inside containment heats up and relief valves on the auxiliary building side of the isolation valves relieve glycol into the glycol expansion tank.
- D. Phase B closes the glycol containment isolation valves; glycol inside containment heats up and expands into the glycol expansion tank.

Bank, lesson plan OT-SYS061A, drawing 1-47-814-2

In the event of a LOCA, the glycol heats up from approximately -5 F to the containment accident temperature and expands harmlessly into the expansion tank. The liquid trapped between a pair of isolation valves is relieved around the inner isolation valve through a bypass line via a small check valve. The bypass line also contains test connections for periodic leak testing of the isolation valves and check valve.

- a. incorrect - no relief valves feedback to the expansion tank
- b. correct
- c. incorrect - no relief valves feedback to the expansion tank
- d. incorrect - phase B does not close the these valves

**QUESTIONS REPORT**  
for WBfindraft

22. 025AA2.07 001/T1G2/T1G2/MIDLOOP/C/A (3.2/3.2)/B/WB02301/C/KFO  
Given the following:

- RCS temperature is 118 F
- Reactor Vessel head is removed
- Reactor Upper Internals are installed in the reactor vessel
- Refueling Level is ~~746.8~~ ft. **718'6"**
- RCS draining is in process at 10 gpm
- RHR pump A is running with indicated flow of ~~2200~~ <sup>2700</sup> gpm
- RHR pump A begins to exhibit indications of cavitation

The cavitation and subsequent loss of RHR heat removal is occurring due to .....

- A. draining with the upper internals in place, which reduced the RHR suction pressure.
- B. steam binding of the RHR pump, caused by low recirculation flow.
- C.  air entrapment at the RHR suction inlet, caused by the high flow conditions.
- D. draining with the upper internals in place, which reduced the RHR discharge pressure.

Ref. Bank - WB verification: SOI-74.01, AOI-14, GO.10

- a. incorrect, upper internal installation will not effect RHR suction pressure.
- b. incorrect, recirculation flow valve shuts at ~~1400~~ <sup>1400</sup> gpm
- c. correct, air entrapment occurs at higher flow rates, normal midloop flow rate is 2000
- d. incorrect, upper internals installed will not effect RHR discharge pressure to this extent

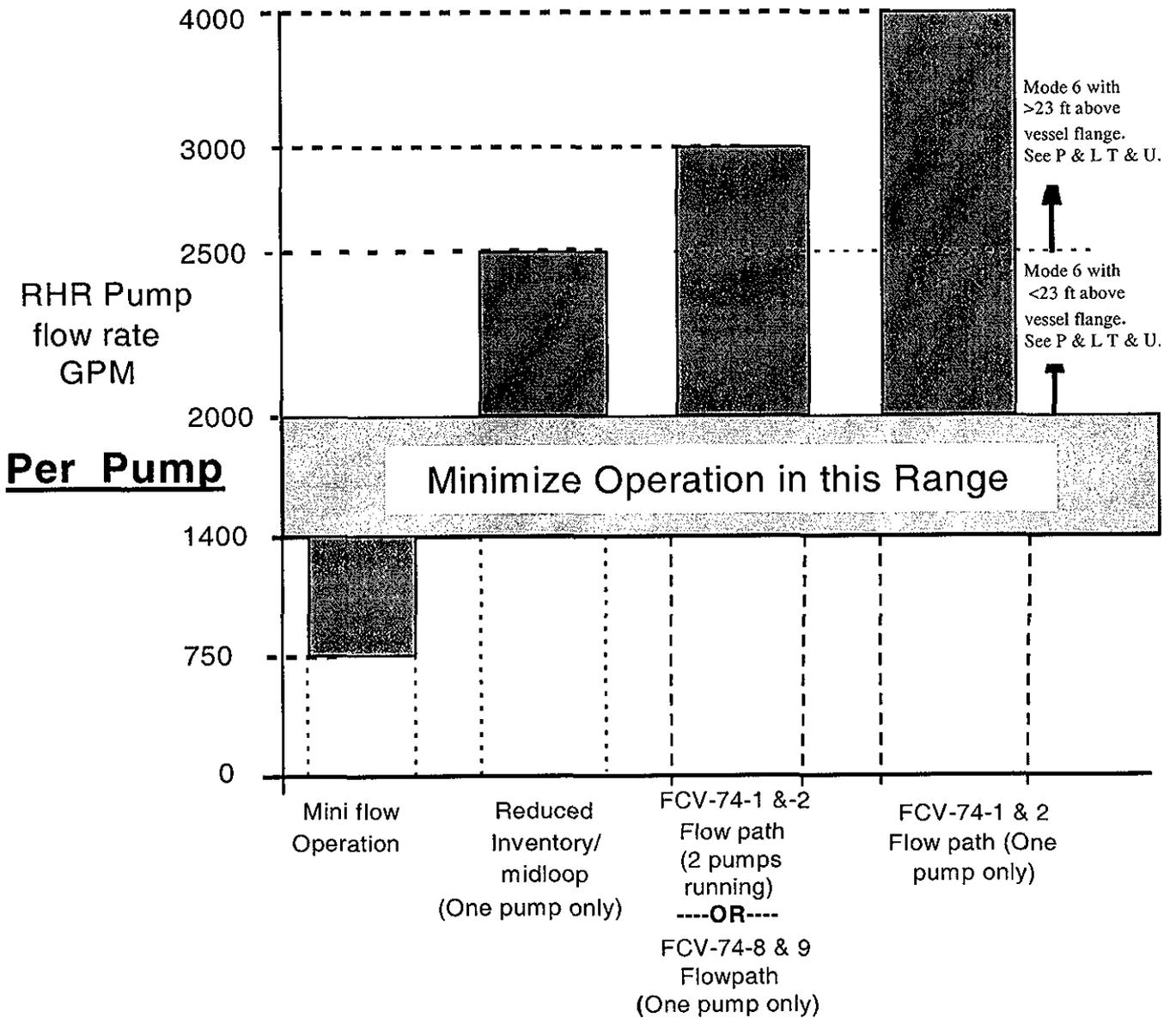
normal midloop level 718'6" to 719'

normal flow 2000-2500 gpm

APPENDIX A

Page 1 of 1

RHR PUMP OPERATING FLOW LIMITS



**QUESTIONS REPORT**  
for WBfindraft

23. 025G2.1.27 001/T2G1/T2G1/PURPOSE OF ICE COND/M 2.8/2.9/M/WB020301/C/RLM

Which ONE of the following is a purpose of the Ice Condenser System?

- A. Helps limit peak clad temperature of the fuel by maintaining a minimum back pressure on the RCS during blowdown phase.
- B. Uses sodium tetraborate to remove elemental hydrogen from the containment atmosphere.
- C. Absorbs (thermal) energy released during LOCA to control the peak pressure in containment.
- D. Uses sodium hydroxide to remove elemental iodine from the containment atmosphere.

Ref: WB lesson plan 3-OT-SYS061A, obj 2

Distractor analysis:

## QUESTIONS REPORT

*Given the following*

for WBfindraft

24. 026A1.01 001/T2G2/T2G1/DESIGN/C/A/M/WB02301/C/RLM

~~A large break LOCA has occurred~~ *A Rxtrip Safety Injection has occurred due to a large break*

- Containment Pressure is 1.6 psig and rising
- One High Containment Pressure bistable has illuminated

Which ONE of the following describes the correct operator response to prevent Containment Pressure from exceeding design limits?

- A. Continue to closely monitor Containment Pressure and the High Containment Pressure bistable status.
- B. Manually actuate HS-30-64A, Phase B Actuation Switch on M-6, and HS-30-68A, Phase B Actuation Switch on M-5, simultaneously.
- C. Manually start and align Train A and Train B Containment Spray Systems.
- D. Manually actuate HS-30-64A, Phase B Actuation Switch on M-6, and HS-30-64B, Phase B Actuation Switch on M-6, simultaneously.

WB bank-modified

*A is correct for High Contat Pressure conditions (RO#22)*

## QUESTIONS REPORT

for WBfindraft

25. 026AK3.03 001/T1G1/TIG1/AOI 15/C/A (4.0/4.2)/B/WB02301/C/RLM

Given the following:

- Unit is at 100% power.
- "A" Train CCS Surge tank level is dropping due to a leak.
- US has entered AOI-15, Loss of Component Cooling Water.

Which ONE of the following describes required actions in the event "A" Train CCS surge tank level cannot be maintained.

- A. Transfer "A" Train CCS suction to the "B" Train side of the surge tank, isolate non ESF header.
- B. Shift Thermal Barrier Booster pump suction to "B" train, shutdown affected "A" Train components, start "B" Train components as necessary.
- C. Stop the thermal barrier booster pumps, trip the Reactor and stop all RCPs.
- D. Shutdown running "A" Train components and place in auto, start "B" Train components as necessary.

WB Bank

## QUESTIONS REPORT

for WBfindraft

*Given the Following:*

26. 027AK3.03 001/T1G1/T1G2/PORV/C/A 3.7/4.1/N/WB020301/C/RLM

- Unit 1 is at 100% power.
- Annunciator 89A, PZR PORV LINE TEMP HI, illuminates.
- Both PORV's indicate closed.
- Pressurizer pressure is normal.

*b, Small Reactor Coolant System Leak*

In accordance with AOI-18, ~~Malfunction of Pressurizer Pressure Control System~~, which ONE of the following is the correct action and reason?

- A. Close the associated block valve because a vapor-space leak causes PZR level to increase.
- B. Close both block valves because a vapor-space leak causes PZR level to increase.
- C. Close the associated block valve because the PRT will rupture.
- D. Close both block valves and remove power because the PRT will rupture.

Ref: WB lesson plan 3-OT-AOI1800, obj. 1 & 5  
WB procedures AOI-18, AOI-6, ARI 89-A

Disaster analysis:

Answer A and B are incorrect because PZR level rise is only associated with large leaks that affect PZR pressure.

Answer C is correct because it follows the ARI guidance and small leaks can raise PRT pressure to the rupture disc setpoint.

Answer D is incorrect because power should not be removed.

*AOI-18 requires pressure to be dropping to isolate the PORV.*

*009/ EK 3.21 (4.2/4.5) Actions contained in EOP's for small break LOCA/Leak*

## QUESTIONS REPORT

for WBfindraft

27. 029EA1.13 001/T1G2/T1G1/TURBINE TRIP/M 4.1/3.9/B/WB020301/C/RLM

Which ONE of the following is the NEXT action the operator is required to take if the main turbine does NOT trip automatically and CANNOT be tripped from the MCR: per FR-S.1, "RESPONSE TO NUCLEAR POWER GENERATION/ATWS"?

- A. Place both EHC pumps control switches in P-T-L.
- B. Trip the turbine locally at the front standard.
- C. Manually RUNBACK the turbine.
- D. Shut the MSIV's.

WB lesson plan 3-OT-FRS-0001, Obj. 3

WB exam bank

Distractor analysis:

A is incorrect because it is a followup action later in the procedure, step 9 RNO.

B is incorrect because it is a local action if MCR actions fail, step 9 RNO.

C is correct per RNO step 2

D is also in RNO step 2, but only occurs if runback doesn't work.

**QUESTIONS REPORT**  
for WBfindraft

28. 029K1.02 001/T2G2/T2G2/RAD MONITOR/M 3.3/3.6/N/WB020301/C/RLM

Which ONE of the following describes the sample path of RE-90-130, Contmt Purge Exhaust, and effect of the alarm exceeding the alarm setpoint?

- A. RE-90-130 samples the Contmt Purge Exhaust discharge and initiates a Containment ~~Purge~~ <sup>BA Isolation</sup> trip upon alarm.
- B. RE-90-130 samples the Contmt Purge Exhaust suction and initiates a Containment Vent Isolation upon alarm.
- C. RE-90-130 samples the Contmt Purge Exhaust discharge and initiates a Containment Vent Isolation upon alarm.
- D. RE-90-130 samples the Contmt Purge Exhaust suction and initiates a Containment ~~Purge~~ <sup>BA Isolation</sup> trip upon alarm.

Ref: WB Lesson Plan 3-OT-SYS030C, obj. 10  
WB Lesson Plan 3-OT-SYS090A, pp. 63  
SOI 88.1, Checklist #3  
Dwg. 1-47W866-1

*There is NO Contmt Purge trip signal*

**QUESTIONS REPORT**  
for WBfindraft

29. 032AK1.01 001/T1G2/T1G2/POWER FAILURE/C/A/M/WB02301/C/KFO

Given the following conditions:

- Reactor Startup in progress
- Shutdown Banks withdrawn
- Control Bank withdrawal is imminent
- SRM N132 indicates approximately 1000 cps
- SRM N131 is in bypass

Which ONE of the following will occur if the control power fuse for SRM N131 blows?

- A. Lose indication for SRM N131 on Main Control Board and NIS cabinets
- B. Both SRM drawers deenergizes and "non-operate" alarm acuates
- C. ✓ Reactor Trips
- D. Rod withdrawal is blocked

Modified from WB bank - rewrote question stem and changed distractor. Validated in Lesson Plan SYS092A

- a. incorrect-not all indicatipon lost since instrument power is available
- b. incorrect-SRM N132 unaffected by loss of control power to SRM N131
- c. correct- loss of control power deenergizes bistables and initiates trip signal (1/2 logic)
- d. incorrect - Source range low does not initiate rod stop

**QUESTIONS REPORT**  
for WBfindraft

30. 034K4.01 001/T2G3/T2G2/LOSS OF AIR/M (2.6/3.4)/B/WB02301/C/KFO

Which ~~one~~<sup>ONE</sup> of the following describes a feature of the Refueling Machine designed to prevent the accidental release of a fuel assembly?

- A. The Gripper is mechanically engaged and disengaged by a remote operating handle on the bridge and requires no power or air to operate.
- B.✓ The gripper requires air to disengage, however, a mechanical latch prevents gripper release under load even if air is supplied.
- C. The gripper disengages upon loss of air, however, a mechanical latch prevents gripper release under load even if air is removed.
- D. When the gripper is engaged, operators mechanically lock gripper in place with extension shaft which must be unlocked before the gripper can release.

Ref: lesson 3-OT-SYS079 (LO 11)

- a. *incorrect - air required to disengage*
- b. *correct - mechanical latch on gripper works under load*
- c. *incorrect - engages on loss of air*
- d. *incorrect - no operator action required for gripper mechanical latch to operate*

**QUESTIONS REPORT**  
for WBfindraft

31. 035K1.09 001/T2G2/T2G2/TRANSIENT RESPONSE/C/A 3.8/4.0/B/WB020301/C/EL/RLM

Given the following plant conditions:

- The reactor is operating at 50% power.
- Rod control is in MANUAL.
- Turbine control is in IMP-IN.
- #3 S/G PORV fails OPEN.

Which ONE of the following describes the resulting steady-state conditions?  
(Assume no reactor trip or operator action and turbine power remains constant)

- A. Final  $T_{avg} < \text{initial } T_{avg}$  and final power  $>$  initial power.
- B. Final  $T_{avg} < \text{initial } T_{avg}$  and final power  $=$  initial power.
- C. Final  $T_{avg} = \text{initial } T_{avg}$  and final power  $>$  initial power.
- D. Final  $T_{avg} = \text{initial } T_{avg}$  and final power  $=$  initial power.

Reference: TAA011, General theory section

Distractor analysis:

A is correct steam loss through PORV causes  $T_{avg}$  decrease which adds positive reactivity which causes power to rise.  $T_{avg}$  will remain less than initial  $T_{avg}$  because some of the reactivity is used to overcome power defect associated with power rise.

B, C, and D are incorrect because they conflict with the above correct answer.

Note: Since IMP-IN is given, do we need to tell them that turbine power remains constant?

## QUESTIONS REPORT

for WBfindraft

32. 037AK3.07 001/T1G2/T1G2/TUBE LEAK/M 4.2/4.4/B/WB020301/C/RLM

Given the following:

- A SG tube leak of approximately 30 gpm has been identified on SG #3.
- The operating crew has entered AOI-33, Steam Generator Tube Leak.
- Operators have completed Step 21 of the AOI and have isolated feed flow to ~~the~~ SG #3 after verifying level greater than 10%.

Which ONE of the following is a basis for ensuring the affected SG level greater than 10%?

- A. To ensure that the pressure and temperature limits of the SG shell are maintained.
- B. To prevent the RCS cooldown from causing depressurization of the affected SG.
- C. To prevent SG overfill.
- D. To prevent thermal shock to the tubes during RCS cooldown.

Ref: WB Lesson Plan 3-OT-AOI3300, obj. 8

A is incorrect in that these limits apply to CSD conditions

B is correct because the insulating layer of water above the tubesheet helps trap pressure in the S/G and minimize tube d/p during cooldown.

C is incorrect because level control is not an issue.

D is incorrect because there is no sudden introduction of cold water after the level is attained.

## QUESTIONS REPORT

for WBfindraft

33. 039A1.03 001/T2G2/T2G2/MS WARMUP/C/A 2.6/2.7/B/WB020301/C/EL/RLM

Given the following plant conditions:

- Startup in progress.
- Operators are warming the main steam lines using the MSIV bypasses.
- The OAC observes that the RCS has cooled down 108°F in the past hour.
- The CRO observes that the main steam lines have heated up 102°F in the past hour.

Which ONE of the following indicates the actions that should be taken by the operators and why?

- A.  Close the MSIV bypass valves; RCS cooldown limit was exceeded.
- B. Close the MSIV bypass valves; main steam line heat-up limit was exceeded.
- C. Close the MSIV bypass valves; both RCS and main steam line limits were exceeded.
- D. Leave MSIV bypass valves open; NO RCS or main steam line limits were exceeded.

Ref: WB Exam Bank

WB Lesson Plan 3-OT-SYS001A , obj 24

- a. Correct - RCS cooldown limit of 100°F/hr was exceeded; main steam line limit of 200°F/hr was NOT exceeded. Closing the bypass valves would terminate the cooldown
- b. Incorrect - main steam line limit was not exceeded. Examinee could confuse the RCS and main steam line limits.
- c. Incorrect - only the RCS cooldown limit was exceeded. Examinee may believe the limits were the same. Closing the bypass valve would terminate the cooldown.
- d. Incorrect - examinee could confuse the limits and believe that neither limit was exceeded, however the RCS cooldown limit was exceeded and closing the bypass valve would terminate the cooldown.

**QUESTIONS REPORT**  
for WBfindraft

34. 040AG2.4.6 001/T1G1/T1G1//C/A (4.0/4.3)/B/WB02301/C/EL

Given the following plant conditions:

- Unit was at 100% power.
- A main steam line break occurred in the Turbine Building.
- Operators were unable to close the MSIVs and transitioned to ECA-2.1, Uncontrolled Depressurization of All Steam Generators.
- SI termination steps are in progress.
- Loop 3 MSIV is closed locally.
- The CRO observes the #3 SG pressure rising slowly.

Which ONE of the following actions should be performed?

- A. Transition to E-2, "Faulted SG Isolation".
- B. Transition to ES-1.1, "SI Termination".
- C. Remain in ECA-2.1 until RHR is in service.
- D. ✓ Remain in ECA-2.1 until SI is terminated.

The correct answer is D

**QUESTIONS REPORT**  
for WBfindraft

35. 041K3.04 001/T2G3/T2G3/STEAM DUMP RX POWER/C/A3.5/3.4/B/WB020301/C/EL/RLM

Given the following conditions:

- Unit at 100% power, EOL conditions.
- Turbine operating in IMP OUT.
- A steam dump valve inadvertently comes full open.
- All other control systems normal.

Which ONE of the following correctly describes the plant conditions, when plant stabilizes, and assuming NO operator action?

- A. Megawatts electrical same as initial; reactor power rises.
- B. Megawatts electrical same as initial; reactor power drops.
- C. Megawatts electrical drops; reactor power rises.
- D. Megawatts electrical drops; reactor power drops.

Ref: WB Exam Bank

WB Lesson Plan 3-OT-SYS001B, obj 27

WB Lesson Plan 3-OT-SYS001B, pp. 24

**QUESTIONS REPORT**  
for WBfindraft

36. 045A3.05 001/T2G3/T2G3/GOVERNOR VALVE/C/A3.5/3.6/B/WB020301/C/EL/RLM  
Given the following plant conditions:

- Plant operating at 100% power.
- All systems aligned normal.
- Turbine EHC control is in IMP OUT.

Which ONE of the following describes turbine governor valve operation while in IMP OUT mode?

- A. Governor valve position is adjusted to maintain generator load constant and will NOT respond to changes in system frequency.
- B. Governor valve position is adjusted to maintain generator load constant and will respond to changes in system frequency.
- C. Maintains governor valves at a set reference position and will NOT respond to changes in system frequency.
- D. Maintains governor valves at a set reference position but will respond to changes in system frequency.

Ref: WB Exam Bank  
WB Lesson Plan OT-3- SYS047A Obj. 2  
Lesson plan pp. 12 and 18

Info on pp. 12 and 18 seem to conflict, need to follow up w/ site.

- a. Incorrect - in the IMP OUT mode governor valves adjust to maintain load and system frequency.
- b. Incorrect - in the IMP OUT mode governor valves adjust to maintain load and system frequency.
- c. Incorrect - governor valves are set at a reference set in by the operator, but WILL change in response to system frequency changes
- d. Correct - governor valves are set at a reference set in by the operator and WILL change in response to system frequency changes.

## QUESTIONS REPORT

for WBfindraft

37. 054AG2.4.48 001/T1G2/T1G2/SG LEVEL/C/A 3.5/3.8/N/WB020301/C/RLM

*Given the Following:*

- Unit 1 is at 100% power.
- Annunciator 63-F, SG LEVEL DEVIATION, alarms and the operator notices S/G #1 level rising along with MFP speed and the remaining S/G levels constant.

Which ONE of the follow<sup>ing</sup> describes the (1) cause, (2) required action and (3) consequence of no operator action?

- A. (1) #1 S/G FRV is opening, (2) return #1 S/G level to program, (3) Auto Turbine Runback initiated
- B. (1) #1 S/G FRV is opening, (2) return #1 S/G level to program, (3) Feedwater Isolation initiated
- C. (1) MFP master controller failing high, (2) control MFP speed using manual, (3) Auto Turbine Trip initiated
- D. (1) MFP master controller failing high, (2) manually trip turbine, (3) Feedwater Isolation initiated

Ref: WB 3-AOI-1600

Note: electronic copy of AOI 16 corrupt

*Distractor analysis:*

A is incorrect because the consequence is a P-14, Hi-Hi SG level which initiates a FW isolation.  
B is correct because only one SG is rising, hence a FRV is the cause, action is from AOI-16 for FRV failure and FW isolation occurs with no operator action at P-14.  
C is incorrect because a problem with the MFP controller would affect all SG's the same.  
D is incorrect same as C.

## QUESTIONS REPORT

for WBfindraft

38. 055EK3.02 001/T1G1/T1G1//M (4.3/4.6)/B/WB02301/C/EL/KFO

Which ONE of the following is a purpose for depressurizing all intact SGs to 300 psig during the performance of ECA-0.0, "Loss of Shutdown Power"?

- A. Reduces DP across SG U-tubes to minimize possibility of tube rupture.
- B. Reduces DP across RCP seals to minimize leakage and loss of RCS inventory.
- C. Maximizes Natural Circulation flow before Reflux cooling begins as the RCS becomes saturated.
- D. Maximizes Natural Circulation flow to allow reactor vessel head to cool since CRDM are unavailable.

WB bank, validated with ECA-0.0

## QUESTIONS REPORT

for WBfindraft

39. 055K3.01 001/T2G2/T2G2/VACUUM PUMP/C/A 2.5/2.7/B/WB020301/C/RLM

Given the following conditions:

- Reactor power is steady-state at 100%.
- Rod control is in automatic.
- Condenser Vacuum Pumps 1A and 1B are running with 1C pump out of service for maintenance.

Which ONE of the following conditions could result if NO operator action is taken in response to a COND VACUUM PUMP 1B SEAL WTR PRESS LOW alarm?

- A. Rising megawatt output and rising steam seal header pressure.
- B. Rising megawatt output and rising condenser hotwell level.
- C. Dropping megawatt output and dropping condensate temperature.
- D. Dropping megawatt output and rising condensate temperature.

WB Lesson plan 3-OT-SYS1100, obj 4

Distractor analysis:

Degraded vacuum causes megawatt output to decrease due to reduce delta H. Therefore, A and B are incorrect.

Condenser is a saturated system, so higher  $P_{sat}$  means higher  $T_{sat}$ . Therefore D is correct and C is incorrect.

QUESTIONS REPORT  
for WBfindraft

40. 056K1.03 001/T2G1/T2G1/FEED PUMP TRIP/C/A 2.6/2.6/N/WB020301/C/RLM

Given the following:

Unit 1 is at 72% power. A control problem causes <sup>1</sup>FCV-210, Condensate Inlet to 1A MFPT Condenser, to close.

Which ONE of the following describes the effect on continued plant operation?

- A. ~~1A MFPT rolls to idle~~, the Standby MFP starts and Rx power ~~can remain 72%~~ <sup>must be reduced</sup>
- B. ~~1A MFPT trips~~, the Standby MFP starts and Rx power can remain 72%.
- C. ~~1A MFPT trips~~, the Standby MFP does not start and Rx power must be reduced.
- D. ~~1A MFPT rolls to idle~~, the Standby MFP does not start and Rx power ~~must be reduced~~ <sup>can remain at 72%</sup>

Ref: 3-OT-SYS002A, obj. 15  
3-OT-SYS003A, obj. 5 & 7

Distractor analysis:

A and D are incorrect, because the 1A MFP trips on low condenser vacuum

C is incorrect because the standby feed pump auto starts

B is correct, because the standby feed pump starts and is able to carry ~15% turbine power and the 1B MFP can carry 67%, the sum of which is above 72%.

Given the following:

- Unit 1 is at 72% power
- Both MFPTs in service
- A control problem causes 1-FCV-2-210, Condensate Inlet to 1A MFPT Condenser, to close.

"rolls to idle" is not an operationally valid term.

## QUESTIONS REPORT

for WBfindraft

*GIVEN THE Following:*

41. 059AA1.01 001/T1G2/T1G1/RAD FLUID LEAKAGE/M 3.5/3.5/N/WB020301/C/RLM  
-Unit 1 is operating at 50% power  
-Annunciator 178-A, SG BLDN 1-RM-120/121 LIQ RAD HI alarms

Which ONE of the following correctly describes plant response and the actions of the control room operators?

- A. No automatic action and operators verify alarm validity.
- B. ✓ Operators verify SG Blowdown is isolated to Cooling Tower Blowdown and aligned to Condensate Demin.
- C. Operators verify Auxiliary Bldg Rad Waste discharge header is isolated from the blowdown line.
- D. Operators verify Cooling Tower blowdown flow is bypassed to the 35 acre pond.

Ref: WB Lesson Plan 3-OT-AOI31000, obj. 2 & 3  
ARI 178-A

Distractor analysis:

A is incorrect because RM 120/121 have auto actions

B is correct base on ARI 178-A

C is incorrect the Aux Bldg in not involved in SGBD stream

D is incorrect because this action would not prevent an offsite release.

**QUESTIONS REPORT**  
for WBfindraft

42. 059K6.09 001/T2G1/T2G1/SPEED CONTROL/C/A 2.4/2.6/N/WB020301/C/RLM

Unit 1 is at 60% power with both 1A and 1B MFP's operating in AUTO.

~~1~~ PT-1-33, Steam Header Pressure, output begins to slowly drift <sup>Low</sup> ~~low~~.  
Assume no operator action.

Which ONE of the following describes the effect on the Main Feed Water System?

- A. Feed Water Reg valves begin to close and then both MFP's discharge pressure begins to increase. ~~rise~~ <sup>space</sup>
- B. Both MFP's discharge pressure begins to increase <sup>rise</sup> and all ~~then~~ Feed Water Reg valves begin to open.
- C.  Both MFP's discharge pressure begins to decrease <sup>drop</sup> and all ~~then~~ Feed Water Reg valves begin to open.
- D. Feed Water Reg valves begin to close and then both MFP's discharge pressure begins to decrease. <sup>drop</sup>

Ref: WB Lesson Plan 3-OT-SYS0003A, obj. 6  
WB Dwg. 47W611-03-02

Distractor analysis:

C is correct because input from d/p program remains constant because steam flow remains constant. However, PT-1-33 failing low, causes the d/p actual (as sensed) to increase above program. This in turn causes the speed summer to decrease its output to the speed control station which will reduce feedpump speed and its discharge pressure. Flow rate will decrease and the FRV's will open to increase flow to the S/G's.

All other answer's are incorrect because they are variations of the answer with one parameter going in the wrong direction.

**QUESTIONS REPORT**  
for WBfindraft

43. 061A1.04 001/T2G1/T2G1/CST/C/A/M/WB02301/C/KFO

Which ONE of the following describes the base assumptions for minimum CST volume for a Loss of Offsite Power?

- A. 2 hours in Mode 3 followed by 50 °F/hr cooldown rate to Mode 5.
- B. Immediately cooldown at 50 °F/hr cooldown rate to Mode 4 .
- C. 2 hours in Mode 3 followed by a 50 °F/hr cooldown rate to Mode 4.
- D. Immediately cooldown at 50 °F/hr cooldown rate to Mode 5.

Modified from Byron - validated from WB AFW System description N3-3B-4002

- a. incorrect - capacity is for a 2 hour hold then cool to mode 4
- b. incorrect - capacity for 2 hours and then cool to mode 4
- c. correct - stand pipe in CST ensures 2 hours hold and then 50 F/hr cooldown to mode 4
- d. incorrect - capacity to hold for 2 hours with 50 F/hr cooldown to mode 4

**QUESTIONS REPORT**  
for WBfindraft

44. 061AA1.01 001/T1G2/T1G2//M/N/WB02301/C/KFO

Which ONE of the following area radiation monitors initiate a Containment Ventilation Isolation?

- A. Waste Disposal System Gas Effluent Monitor, 0-RM-90-118
- B.  Containment Purge Rad Monitor, <sup>1-RM-90-130</sup>1RM-90-130
- C. Fuel Pool Area Monitor, 0-RM-90-102
- D. Personnel Access Area Monitor, <sup>1-</sup>RM-90-2

New - Lesson plan SYS90A -

- a. incorrect - hi rad closes the vent header isol
- b. correct
- c. incorrect - isolates the aux building, does not generate an ABI
- d. incorrect - no auto actions

**QUESTIONS REPORT**  
for WBfindraft

45. 062A3.05 001/T2G2/T2G2/LOSP LOOP/C/A 3.5/3.6/B/WB020301/C/RLM

Given that the following occurred in sequence:

- A small break LOCA occurred which resulted in a reactor trip and SI.
- The SI signal was reset during the performance of E-1, "Loss of Reactor or Secondary Coolant."
- A loss of offsite power (LOOP) occurred and the diesel generators loaded as designed.

Assuming no operator actions, which ONE of the following would be the status of the loads on the 6.9kV SD boards?

- A. All equipment powered from the SD boards with the control board switch in automatic will be restarted.
- B. No 6.9kV SD board loads are automatically restarted.
- C. Equipment normally started during a ~~LOSP~~<sup>LOSP</sup> will be automatically restarted; SI and RHR pumps remain OFF.
- D. All equipment that was operating prior to the ~~LOSP~~<sup>LOSP</sup> will be automatically restarted; All running ESF equipment will be reenergized

Reference: WB Exam Bank (inadequate info to verify, missing lesson plans on EDG loading.)

**QUESTIONS REPORT**  
for WBfindraft

46. 062AG2.4.24.001/T1G1/T1G1//M/B/WB02301/C/EL/KFO

Which <sup>ONE</sup> of the following correctly identifies the emergency cooling water supply to the control and station service air compressors, per AOI-13 "Loss of ERCW", if normal ERCW supply is lost?

- A.  Raw Cooling Water header
- B.  Raw Service Water header
- C.  Unit 1 Primary Water header
- D.  Demin Water header

Ref - AOI-13, 47w850-1, 47w845-5

- a. incorrect - RCW does not support the compressors
- b. correct - RSW / Fire header connection in emergency
- c. incorrect - no ERCW connection to support compressors
- d. incorrect -

QUESTIONS REPORT  
for WBfindraft

47. 063K3.02 001/T2G2/T2G1/CONTROL POWER/C/A 3.5/3.7/N/WB020301/C/RLM

*Given the following*

- Unit 1 was at 100% power, *when a reactor trip occurred due to 10-to 5/6 level*
- *1A-A* DG1A was running parallel to the 6.9kV Shutdown Board for surveillance.
- In addition to the expected post trip annunciators, the operator notes annunciators:
  - 17-A 125 DC VITAL CHGR/BATT I ABNORMAL
  - 17-B 125 DC VITAL BATT BD I ABNORMAL CKTS ISOLATED

Which ONE of the following describes the response to this event by <sup>1A-A</sup> DG1A?

- <sup>1A-A</sup> A. ~~DG1A~~ trips and its output breaker opens
- <sup>1A-A</sup> B. DG1A continues to run and its output breaker opens
- <sup>1A-A</sup> C. ~~DG1A~~ trips and its output breaker remains closed
- <sup>1A-A</sup> D. ~~DG1A~~ continues to run and its output breaker remains closed

Ref: WB lesson plan 3-OT-AOI2100, obj. 1 & 2  
3-OT-SYS057P, obj. 8

WB Dwg's  
1-45W724-1  
1-45W727  
1-45W760-82-2  
1-45W760-211-4

Distractor analysis:

- A is incorrect because the DG can run using its own DC control power, but the output breaker has not control power to trip.
- B is incorrect because the output breaker has no control power to trip.
- C is incorrect because the DG does no trip
- D is correct because the DG has its own control power and the output breaker remains closed due to no control power.

**QUESTIONS REPORT**  
for WBfindraft

48. 064K2.03 001/T2G2/T2G2/D/G CONTROL POWER/M 3.2/3.6/N/WB020301/C/RLM

Unit 1 is at 100% power

All Diesel Generators are in standby

Annunciator 281-A, DG CONTROL POWER FAILURE for <sup>1A-A</sup> ~~DG1A~~

Which ONE of the following describes the status of the Diesel Generator(s) AFTER the annunciator alarms?

<sup>1A-A</sup>  
A. ~~DG1A~~ starts and is operable.

<sup>1A-A</sup>  
B. ~~DG1A~~ does not start and is inoperable.

C. All four diesel generators start and are operable.

D. All four diesel generators do not start and are inoperable.

Ref: WB lesson plan 3-OT-SYS082B, obj. 10

ARI 281-A

Dwg 1-45W727

1-45W760-82-2

1-45W760-82-4

1-45W760-82-6

Distractor analysis:

A is incorrect because the starting air solenoids need power from the Diesel 125V DC Distribution Panel 1-DPL-82-A-A which is deenergized as evidenced by the annunciator 281-A.

B is correct because the starting air solenoids have no power and cannot respond to an auto start signal

C and D are incorrect because they continue to have control power and all 125V vital battery boards are still energized.

## QUESTIONS REPORT

GIVEN THE FOLLOWING:

for WBfindraft

49. 065AA1.01 001/T1G3/T1G2//C/A/N/WB02301/C/RLM

- Unit 1 is at 100% power <sup>F</sup>
- Annunciator 42~~D~~, C&SS AIR COMPR SEQUENCER UNDERVOLTAGE
- Control Air pressure is slowly decreasing

Which ONE of the following describes actions for locally controlling air pressure?

- A. Take manual control of the Foxboro 43AP pneumatic controller
- B. Shift AC control power
- C. Start and stop Control Air Compressors
- D. Take manual control at the local control station using the solenoid manual valve

New - ref: Watts Bar ARI 42-E and lesson plan 3-OT-SYS032A, obj 11

Distractor analysis:

A incorrect because controller has no power

B incorrect because control power is DC, but shifting control power takes precedence over taking manual control of unloader

C is incorrect due to no procedural guidance and undesirable from equipment standpoint

D is correct IAW ARI

QUESTIONS REPORT  
for WBfindraft

50. 067AK1.02 001/T1G1/T1G1/FIRE FIGHTING/M (3.1/3.9)/M/WB02301/C/EL

Which <sup>ONE</sup> of the following is the most effective method of fire fighting in the ~~5th DG Oil~~ <sup>Computer</sup> ~~Pump Room?~~ <sup>Security backup</sup>

~~Diesel Generator~~

- A. ~~Auto actuation of sprinkler system~~
- B. ~~Auto actuation of fog system~~
- C. ~~Auto actuation of foam system~~
- D. ~~Auto actuation of CO2 system~~

REF: Modified from Watts Bar Exam Bank SYS026A.21

5th D/G foam tank is isolated

QUESTIONS REPORT  
for WBfindraft

51. 068AK3.18 001/T1G1/T1G1/EVACUATION/M/N/WB02301/C/KFO

Evacuation of the Control Room is required due to a control room fire. The actions of AOI-30.2, "~~Main Control Room Inaccessibility~~", prior to evacuating the control room include which of the following? *FIRE SAFE Shutdown*

- A. *Manual trip of All MFD's*  
Tripping the feedwater pumps
- B. *at the*  
Deenergizing the RCP start busses ~~and~~ Electrical Control Board
- C. *manual Safety Injection*  
Initiating ~~main steam isolation~~
- D. *Manual trip of any unloaded D/G*  
Tripping ~~unrequired~~ diesel generators

Ref: AOI-30.2 Fire Safe Shutdown, appendix C steps 1 - 8,

- a. incorrect, feedwater pump status is not addressed prior to evacuation
- c. incorrect, ensure the MSIVs are closed but does not direct initiating a main steam isolation signal
- d. incorrect, addresses ensuring the 6.9 bus energized but does not address tripping any unnecessary DGs

*There is no manual Main Steam Isolation signal -*

QUESTIONS REPORT  
for WBfindraft

52. 068K1.07 001/T2G1/T2G1/RAD WASTE/M 2.7/2.9/N/WB020301/C/RLM

Which <sup>ONE</sup> ~~one~~ of the following describe how Incore Intrumentation Seal Table leakage enters the Liquid Radwaste System?

- A. Drains to the Reactor Coolant Drain Tank <sup>then</sup> and pumped to the Tritiated Drain Collector Tank.
- B. <sup>then</sup> Drains to the Reactor Building Floor and Equipment Drain Pocket Sump <sup>ed</sup> and pumps to the Reactor Building Floor and <sup>then</sup> pumped ~~via Reactor Building Floor and Equipment Drain Sump~~ to the Tritiated Drain Collector Tank.
- C. Drains to the Containment Pit Sump <sup>then</sup> and pumped <sup>to</sup> ~~via~~ the Reactor Building Floor and Equipment Drain Sump to the Floor Drain Collector Tank.
- D. Drains to the Reactor Building Floor and Equipment Drain Sump <sup>then</sup> and pumped to the Floor Drain Collector Tank.

Ref: WB lesson plan 3-OT-SYS077A, obj.  
Dwg. 1-47W851-1

Distractor analysis:

See attached drawing

Note: From the drawing, it appears that the Reactor Building Floor and Equipment Drain Pocket Sump has its own pumps, but can overflow into the Reactor Building Floor and Equipment Drain Sump. If this becomes and issue, we can substitute the Passive Sump for distractor D.

**QUESTIONS REPORT**  
for WBfindraft

53, 069AK2.03 001/T1G1/T1G1/CTMT INTEGRITY/C/A 2.8/2.9/N/WB020301/C/RLM

*Given the following:*

Unit 1 is at 100% power.

Annunciator 158-A, UPR CNTMT AIRLOCK INNER/OUTER alarmed for no apparent reason on the previous shift. Maintenance personnel have been dispatched to investigate the alarm. They report that they have opened the outer door and found the inner door ajar.

Which ONE of the following describes the correct actions required by AOI 12, "Loss of Containment Integrity?"

- A. Verify the outer door closed within one hour and restore the air lock to operable status within 24 hours.
- B. Repair the inner door within one hour and lock the outer door within 24 hours.
- C. Close the outer door within one hour and lock the outer door within 24 hours.
- D. Commence plant shutdown within one hour and be in Mode 5 within 24 hours.

Ref: WB 3-OT-AOI1200 , obj. 4

WB 3-OT-AOI1200, pp. 5

WB Tech Specs

Distractor analysis:

A is incorrect because the air lock is not inoperable because the outer door is operable. These actions are for an inoperable air lock.

B is incorrect because there is no requirement to repair the inner door within one hour.

C is correct per Tech Specs 6.2 condition A.

D is incorrect because there is no requirement per AOI 12 to commence shutdown within 1 hour.

*T/S Bases (RD)*

*see attached*

## Common 53

Given the following:

- Unit 1 is at 100% power
- Personnel report that they are working in upper containment and can not get the inner door personnel access door closed due to damage

Which ONE of the following describes the correct actions for Tech Specs and access to repair the door?

- Declare Upper Airlock Inoperable, preferred access to repair <sup>the inner</sup> Door is via the Upper ~~Containment~~ Airlock outer door
- Declare the Upper Airlock Inoperable, preferred access to repair the inner door is via the Lower Airlock; Contmt Divider Barrier hatch.
- Upper airlock remains operable, preferred access to repair the inner door is via the upper airlock outer door
- Upper airlock remains operable, preferred access to repair the inner door is via the lower airlock and contmt divider barrier hatch.

**QUESTIONS REPORT**  
for WBfindraft

54. 071K3.05 001/T2G1/T2G1/ARM PRM/C/A 3.2/3.2/M/WB020301/C/RLM  
Given the following plant conditions:

- A Gas Decay Tank is being released to the atmosphere using the normal release path.
- The tank being released has HIGH gaseous activity.
- PCV-77-117, Plant Vent Pressure Control Valve fails toward the open position.

Which ONE of the following radiation monitor pairs will alarm to alert the operators and secure the release, respectively?

- A. Shield Building Ventilation Monitor <sup>1-</sup>[RE-90-400] and Aux Building Vent Monitor <sup>0-</sup>[0-RE-90-101].
- B. Auxiliary Building Ventilation Monitor <sup>0-</sup>[RE-90-101A] and Shield Building Ventilation Monitor <sup>1-</sup>[RE-90-400].
- C.  Shield Building Ventilation Monitor <sup>1-</sup>[RE-90-400] and WDS Gas Effluent Monitor <sup>0-</sup>[0-RE-90-118].
- D. Auxiliary Building Ventilation Monitor <sup>0-</sup>[RE-90-101A] and WDS Gas Effluent Monitor <sup>1-</sup>[0-RE-90-118].

Ref: WB lesson plan 3-OT-SYS077B, obj. 9 and 3-OT-SYS090A, obj. 7  
r analysis  
Distracto

A is incorrect because the AB monitor is unrelated to WDS release

B is incorrect same as A

C is correct because the Shield Bldg monitor will upscale and the WDS effluent monitor will trip FCV-77-119 shut and secure release.

D is incorrect same as B

QUESTIONS REPORT  
for WBfindraft

GIVEN THE Following

55. 072G2.4.31 001/T2G1/T2G1/ARI RESPONSE/M 3.3/3.4/N/WB020301/C/RLM

-Unit 1 is in Mode 6

-Fuel Movement is in progress

-Annunciator 186-B MCR AREA 0-RM-135 RAD HI alarms

90-135

90 - 135

Which ONE of the following correctly describes the actions of the control room operators?

- A. Verify Control Building Isolation occurs.
- B. Notify fuel handling crew to stop all fuel movement.
- C. Notify RADCON to investigate the alarm.
- D. Verify emergency control building air cleanup and pressurizing fans RUNNING.

Ref: WB Lesson Plan 3-OT-090A, obj. 9  
ARI 186-B

Distractor analysis:

A and D are incorrect because they are auto actions which occur if the MCR Intake rad monitors 125 or 126 alarm

B is incorrect because there would be no relation between Control Room area rad monitor and refueling operations (and no other rad monitor alarms are in)

C is correct per ARI guidance

## QUESTIONS REPORT

for WBfindraft

56. 075A4.01 001/T2G2/T2G2//M (3.2/3.2)/B/WB02301/C/KFO

Given the following:

- Reactor trip and Safety Injection occurred while the plant was operating at 100% power
- Four ERCW pumps were running in their normal alignment before the ~~SI~~ occurred.

Which of the following identifies ERCW pump status after the SI and the effect it has on the Condenser Circulating Water (CCW) system make-up?

- A. Four ERCW pumps running; CCW make-up is provided only from ERCW since RCW bypass strainer is isolated. *by the SI signal.*
- B. Four ERCW pumps running; CCW make-up is provided only from ERCW since RCW bypass strainer is routed through the overflow structure.
- C.  Four ERCW pumps running; CCW make-up is provided from both ERCW and RCW.
- D. Four ERCW pumps running; CCW make-up is not required since the Unit is tripped.

has a bypass that ensures continuous make-up to CCWREF: lesson plans 3-OT-SYS027A (LO 2) and 067A (LO 13)

- a. incorrect - RCW has a bypass that ensures continuous make-up to CCW
- b. incorrect - RCW has a bypass that ensures continuous make-up to CCW
- c. correct - 2 pumps per train start on SI and RCW has a bypass that ensures continuous make-up to CCW
- d. incorrect - ERCW provides make-up during SI

*bypass strainer was operated for considerable time isolated in the plant. Added "by the SI signal" to remove confusion.*

**QUESTIONS REPORT**  
for WBfindraft

57. 076K2.08 001/T2G3/T2G3/POWER SUPPLY/M 3.1/3.3/N/WB020301/C/RLM

Which ONE of the following describes the power supply for 1-FCV-67-91~~B~~, Lower Containment 1C Cooler Supply~~?~~ and the normal feeder to that power supply?

- A. 480 V Reactor MOV Board 1B2-B
- B. 480 V Shutdown Board 1B2-B
- C. 480 V Reactor MOV Board 2B1-B
- D. 480 V Shutdown Board 1B1-B

Ref: WB Lesson Plan 3-OT-SYS067A, no specific learning objective

Dwgs: 1-45W760-67-5

1-45W751-11

1-45W749-4

1-45-W724-2

Distractor Analysis:

A is correct based on attached dwg's.

B and D are incorrect because the 480 V shutdown board does not directly feed any MOV's

C is incorrect because they have unit 2 designators.

## QUESTIONS REPORT

for WBfindraft

58. 079K4.01 001/T2G2/T2G2/SAS CROSS CONNECT/M 2.9/3.2/B/WB020301/C/EL/RLM

If Station Control and Service Air System air pressure is dropping, the Service Air System automatically isolates from the Control Air System when pressure drops below which ONE of the following?

- A. 80 psig.
- B. 79.5 psig.
- C. 78 psig.
- D. 70 psig.

Ref: WB Exam Bank  
WB Lesson Plan 3-OT-SYS032A, obj. 16

Distractor analysis:

A is correct, see lesson plan pp. 33 (attached)

B is incorrect, corresponds to isolation setpoint of Aux Air

C is incorrect, doesn't correspond to any auto event

D is incorrect, corresponds to essential and non-essential air to the Rx Bldg isolation

QUESTIONS REPORT  
for WBfindraft

~~###~~

59. G2.1.2 001/T3/T3/PROCEDURE COMPLIANCE/M 3.0/4.0/N/WB020301/C/RLM

Operators may take reasonable action that departs from a license condition or Technical Specifications under which ONE of the following circumstances?

- A. In the event of a national security emergency and no action consistent with the license condition or TS that can meet the national security objectives is immediately apparent and the action is immediately needed to implement national security objectives as designated by the national command authority through the NRC.
- B. In an emergency when this action is immediately needed to protect the public health and safety and no action consistent with the license conditions and TS that can provide adequate or equivalent protection is immediately apparent.
- C. In the event of a national security emergency and no action consistent with the license condition or TS that can meet the national security objectives is immediately apparent and such action is approved by a licensed SRO.
- D. In an emergency when this action is immediately needed to protect risk significant equipment and no action consistent with the license conditions and TS that can provide adequate or equivalent protection is immediately apparent.

Ref: WB procedure OPDP-1, sec. 3.4.3, TS compliance

- A is correct, see attached
- B is incorrect, lacks SRO approval statement
- C is incorrect, lacks national command authority requirement
- D is incorrect, refers to risk significant equipment

- A. ... as designated by the national command authority through the NRC
- B. ... as designated by the national command authority through TVA Management
- C. ... as designated by the Technical Support<sup>Center</sup> during REP activation
- D. ... as designated by the Technical Support<sup>Center</sup> with approval by Senior Executive Management.

**QUESTIONS REPORT**  
for WBfindraft

60. G2.1.3 001/T3/T3/SHIFT TURNOVER/M 3.7/3.8/B/WB020301/C/RLM

A Unit 1 UO is preparing to relieve the on-shift UO for a lunch break during a normal shift.

Which ~~one~~<sup>ONE</sup> of the following describes their required minimum<sup>m</sup> actions when this occurs?

- A. A review of the Operating Log since last held shift or 3 days, whichever is less, Standing Orders, LCO(s) in actions
- B. A review of the Rounds sheets/Abnormal readings , Standing Orders, any SI/Test in progress/planned
- C. Abnormal or unusual plant conditions existing, any evolutions in progress, actions anticipated
- D. Radiological changes in plant during shift, a walkdown of the MCR control boards, SI/Test in progress/planned

Ref: Surry exam 2002

OPDP-1, pp. 24 and Shift Turnover Checklist

A, B, and D are items from the Shift Turnover Checklist which is NOT required for a temporary relief per page 24 of OPDP-1, pp.24 and are therefore incorrect.

C are the items listed on pp. 24 as required for temporary turnover.

**QUESTIONS REPORT**  
for WBfindraft

61. G2.1.32 001/T3/T3/COMPONENT COOLING WA/M 3.4/3.8/N/WB020301/C/RLM  
Flowrates in the Component Cooling Water System is limited to 12000 gpm shell side flow.

Which ONE of the following explains the basis for this precaution?

- A. It limits tube d/p and Heat Exchanger loading.
- B. It limits pump runout and tube vibration.
- C. It limits tube vibration and Heat Exchanger loading.
- D. It limits pump runout and tube erosion.

Ref: WB lesson plan 3-OT-SYS070A, obj. 1

SOI-70.01, section 3, P&L's

Distractor analysis:

C is correct, see P&L

A,B, and D are incorrect due to either erosion or pump runout which are not mentioned but is plausible at high flowrates.

## QUESTIONS REPORT

for WBfindraft

GIVEN THE FOLLOWING

62. G2.2.12 001/T3/T3/INVENTORY BALANCE/C/A 3.0/3.4/N/WB020301/C/RLM

- Unit 1 is at 100%
- SI-68-32, Reactor Coolant System Water Inventory Balance is in progress
- 1 hour has elapsed since commencing data collection
- Final readings from the RCSWIB indicate that the total RCS leakage rate is -0.08 gpm

Which ONE of the following describes the correct action to be taken?

- A. Sign the surveillance<sup>e1</sup> as satisfactory
- B. Continue data collection for an additional hour
- C. Void the surveillance and perform at a later time
- D. Investigate to determine the source of inleakage to the RCS

Ref: WB procedure SI-68-32, pp. 16 & 17

A is incorrect because data must be collected for at least an additional hour before the surveillance can be termed complete

B is correct, see SI-68-32, pp. 16 & 17

C is incorrect because it is contrary to procedure guidance

D is incorrect unless the leakage continues to be negative by more than -0.10 gpm after the second data collection

**QUESTIONS REPORT**  
for WBfindraft

63. G2.2.13 001/T3/T3/TAGGING/M 3.6/3.8/N/WB020301/C/RLM

Which ~~one~~<sup>ONE</sup> of the following is NOT a reason to tag a device, component, or piece of equipment per SSP-10.2, Clearance Program?

A.  Design deficiency

B.  DCN

C.  Test activity

D.  Open Work Orders

WB procedure SPP-10.2, pp. 9

Distractor analysis:

See attached

## QUESTIONS REPORT

for WBfindraft

64. G2.2.22 001/T3/T3/SAFETY LIMITS/M 3.4/4.1/M/WB020301/C/RLM

Which one of the following sets of conditions represents a violation of a technical specification safety limit and required action?

- A. Power = 10%, Pressure = 2400 psig, Tavg = 655°F, be in Mode 3 within 1 hour
- B. Power = 80%, Pressure = 2250 psig, Tavg = 640°F, be in Mode 3 within 1 hour
- C. Power = 10%, Pressure = 2400 psig, Tavg = 655°F, restore to within limits in 2 hours
- D. Power = 80%, Pressure = 2250 psig, Tavg = 640°F, restore to within limits in 2 hours

Ref: Modified from TP 2000 by adding required action to pick up LCO part of KA.  
WB TS Section 2, Safety limits

Distractor analysis:

A and C are incorrect because they are within limits and no action required

D is incorrect, because even though it is out of limits, it must be restore within 1 hour, 2 hours is the DNB parameter spec.

B is correct because it is both out of limits and has the correct required action per TS

*W-3 curve supplied?  
cannot answer without curve*



**QUESTIONS REPORT**  
for WBfindraft

65. G2.3.1 001/T3/T3/DOSE EQUIVALENTS/M 2.6/3.0/B/WB020301/C/RLM

Which <sup>ONE</sup>~~one~~ of the following dose components are included in a Radiation Worker's Occupational Dose?

- A. Total Effective Dose Equivalent and Planned Special Exposures.
- B. Planned Special Exposures and Committed Effective Dose Equivalent.
- C. Deep Dose Equivalent and Planned Special Exposure
- D. Deep Dose Equivalent and Committed Effective Dose Equivalent.

Ref: Surry exam.2002

WB Rad con procedure SPP-5.1, section 5, pp. 32

WB lesson plan 3-OT-RAD0003, pp.10

**QUESTIONS REPORT**  
for WBfindraft

66. G2.3.4 001/T3/T3/EXPOSURE LIMITS/M 2.5/3.1/B/WB020301/C/RLM

Given the following plant conditions:

- A LOCA has occurred and a SAE has been declared.
- The TSC and OSC have been activated.
- To prevent core damage it is recommended that entry be made into Safety Injection Pump Room 1A.
- Projected dose rate in the pump room is  $1.16 \times 10^5$  mr/hr.
- Duration of the exposure is expected to be 3 minutes.

Which ONE of the following must authorize this exposure?

- A. Site Vice President
- B. Plant Manager
- C. Site Emergency Director
- D. Radcon Manager

**REFERENCES:**

EPIP-15 p.3, SPP-5.1 p.10

WBN Exam Bank

- d. incorrect - per EPIP-15 of the Radiological Emergency plan the Site Emergency Director must authorize emergency dose limits in excess of TVA admin limits and 10 CFR 20. Examinee may select since the Radcon Manager is responsible for completing the paperwork and he must authorize exceeding the limit during non-emergency conditions.
- c. correct - With a projected dose of  $1.16 \times 10^5$  mr/hr, the total dose to respond to this emergency condition is 5.8 Rem. ( $1.16 \times 10^5$  mR/hr / 60 minutes x 3 minutes). Per EPIP-15 of the Radiological Emergency plan the Site Emergency Director must authorize emergency dose limits in excess of TVA admin limits and 10 CFR 20.
- b. incorrect - per EPIP-15 of the Radiological Emergency plan the Site Emergency Director must authorize emergency dose limits in excess of TVA admin limits and 10 CFR 20. Examinee may select since Plant Manager must authorize exceeding 5 R during non-emergency conditions.
- a. incorrect - per EPIP-15 of the Radiological Emergency plan the Site Emergency Director must authorize emergency dose limits in excess of TVA admin limits and 10 CFR 20. Examinee may select since Plant Manager must authorize exceeding 5 R during non-emergency conditions.

## QUESTIONS REPORT

for WBfindraft

67. G2.3.9 001/T3/T3/PURGE/M 2.5/3.4/N/WB020301/C/RLM

*GIVEN the following:*

- Unit 1 is in Mode 3 following a refueling outage
- Both Containment Purge Systems are in operation
- The Shift Manager has directed that the Containment Purge System be secured in accordance with SOI-30.02, CONTAINMENT PURGE SYSTEM.

Reference Provided

Which ONE of the following should be considered prior to securing Containment Purge?

- A. Outside air temperature
- B. Outside atmospheric pressure
- C. Radiological implications
- D. Containment Purge HEPA and Charcoal filter DP

Ref: WB lesson plan 3-OT-SYS30C, obj. 12  
WB procedure SOI-30.02

Distractor analysis:

A and D are incorrect because they only apply while the system is in service  
B is incorrect, because it only applies when placing the system in service  
C is correct because changes in ventilation, particularly reduction in ventilation can have adverse effects on radiation levels. This is also a precaution in the procedure related to securing CTMT purge. (see below)

CAUTION Radiological implications (e.g.: causing an area to become airborne or raising the humidity in contaminated areas) should be considered any time Containment Purge is secured.

*Reference provided ?*

**QUESTIONS REPORT**  
for WBfindraft

68. G2.4.1 001/T3/T3/IMMEDIATE OP ACTION/C/A 4.3/4.6/N/WB020301/C/RLM

*GIVEN THE FOLLOWING*

- The Unit is at 100% power.
- A Loss of Shutdown Power occurs

Which ONE of the following describes the correct procedure and immediate operator action.

- A. E-0, Rx Trip or Safety Injection, ensure Rx is tripped by Rod all bottom lights lit
- B. ECA-0.0, Loss of Shutdown Power, ensure Rx tripped by neutron flux dropping
- C. FR-S.1, Nuclear Power Generation/ATWS, ensure Rx is tripped by neutron flux dropping
- D. ECA-0.0, Loss of Shutdown Power, ensure Rx tripped by rod bottom lights lit

Ref: WB lesson plan 3-OT-PAI1204, obj 1

WB procedures

PAI-1204

E-0

ECA-0.0

~~Need to check with site to verify that rod bottom lights have no power when shutdown boards deenergized.~~

Distractor analysis:

A is incorrect because rod bottom lights will not have power

B is correct because emergency procedures can be entered directly from a Loss of Shutdown power and NI's will still be powered from battery via inverter.

C is incorrect because FR-S.1 is not an allowable procedure to enter EOP's

D is incorrect because rod bottom lights will not have power

**QUESTIONS REPORT**  
for WBfindraft

69. G2.4.11 001/T3/T3/SG LEAK/C/A 3.4/3.6/M/WB020301/C/RLM

Unit 1 is at 100% power with known leakage in SG 2 of 0.05 gpm  
The Chem Lab reports that today's leakage is 0.06, up from yesterday's reading of  
0.05 gpm

Which ONE of the following should be performed?

Reference provided

- A. ✓ Be in Mode 3 within 24 hours
- B. Reduce load to hot standby in accordance with AOI-39, then cooldown and depressurize the RCS.
- C. Trip the reactor; enter E-0, then transition to E-3.
- D. Convene PORC to evaluate continued operation.

WB lesson plan 3-OT-AOI300, obj. 8  
Procedure AOI-33, appendix B and C

Distractor analysis:

A is correct per table in App. B

B is incorrect because it the action for greater than 600 per day thru all or 150 per day thru one

C is incorrect because 0.6 is well within charging capability which is the decision point for E-0

D is incorrect because it is the action for leaks less than 0.05 per day

*needs AOI 33 provided. 24 hour action*

**QUESTIONS REPORT**  
for WBfindraft

70. G2.4.16 001/T3/T3/GO TO/M 3.0/3.9/B/WB020301/C/RLM

While in the Emergency Response procedures the team is directed to "Go To" another procedure, which ~~one~~<sup>one</sup> of the following is the correct implementation of this action?

- A. The "GO TO" implies the procedure in use is no longer applicable, and any tasks in progress need not be completed.
- B. Tasks still in progress must be completed prior to the transition directed by the "GO TO" step.
- C. The "GO TO" implies the procedure in use is no longer applicable, but any tasks in progress should be completed.
- D. Tasks still in progress need not be completed prior to the transition directed by the "GO TO" step, unless preceded by a double asterisk.

WB lesson plan 3-OT-PAI-1204, obj. 13 & 19

WB procedure PAI-1204

Bank: From Surry 2002

Distractor analysis:

Answer C is correct, see below paragraph from PAI-1204

Answer A and B are incorrect due to timing or required completion

Answer D is incorrect because double astericks relates to high and low level steps vice transitions.

From PAI-1204:

Transition to another step or instruction may be completed before completion of the task in progress, provided that completion of the task is verified at a later time.

Transitions which are not high level action steps are identified with a double asterisk preceding the words GO TO and are in bold face type.

## QUESTIONS REPORT

for WBfindraft

71. G2.4.8 001/T3/T3/PROCEDURE TRANSITION/C/A 3.0/3.7/B/WB020301/C/RLM

Given the following condition:

- The crew has entered ECA-0.0 due to a loss of both SD Bds.
- The Load Dispatcher has recovered one 161KV line from Watts Bar Hydro.
- The crew has implemented AOI-35.

Which ONE of the following actions should the crew take?

- A. Immediately transition to ECA-0.1, Recovery from Loss of Shutdown Power without SI required.
- B. Immediately transition to ECA-0.2, Recovery from Loss of Shutdown Power with SI required.
- C. Manually actuate SI and return to E-0, Rx Trip or Safety Injection.
- D. Continue with ECA-0.0, Loss of Shutdown Power while concurrently performing AOI-35, Loss of Offsite Power.

Ref: WB procedure ECA-0.0 and AOI-35

WB bank question, changed two obviously incorrect distractors

**QUESTIONS REPORT**  
for WBfindraft

72. WE03EK2.2 001/T1G2/T1G2/HEAT REMOVAL/C/A 3.7/4.0/B/WB020301/C/RLM

Given the following plant conditions:

- A small break LOCA has occurred.
- RCPs have been tripped.
- Appropriate actions in accordance with E-0 and E-1 have been completed.
- RCS pressure is stable at <sup>1475</sup>1525 psig.
- ECCS is operating in cold leg injection mode.

Which ONE of the following statements describes the primary method of decay heat removal at this time?

- A.  Heat transfer between the RCS and the S/Gs due to natural circulation flow.
- B. Heat transfer between the RCS and CCS via the RHR Heat Exchangers.
- C. Heat transfer from the injection of water from the RWST and the removal of steam/water out of the break.
- D. Heat transfer from Reflux boiling in the S/Gs.

Ref: WB Lesson Plan 3-OT-EOP0100, no specific learning objective found  
WB lesson plan 3-OT-SYS063A, no specific learning objective found  
WB exam bank

**Distractor Analysis:**

A is correct because due to the thermodynamic  $\Delta T$  between the primary and secondary and resultant heat transfer rate will exceed the heat transfer into the injection flow water.

B is incorrect because CCS flow is isolated from the RHR Hx's at this point in the accident.

C is incorrect same as A

D is incorrect because at this point in the accident the S/G U-tubes are still filled with water.

*to be < RCP trip criteria*

## QUESTIONS REPORT for WBfindraft

73. WE05EA1.3 001/T1G2/T1G2/FEED AND BLEED/C/A 3.8/4.2/B/WB020301/C/RLM

Given the following plant conditions:

- Unit is operating at 100% power at EOL.
- Total loss of feedwater occurs and operators implement FR-H.1, "Loss of Secondary Heat Sink".
- No means of feedwater addition is available and the operators have initiated ~~feed and bleed~~ <sup>bleed</sup> and <sup>feed</sup>.
- Manual Safety Injection was initiated and when the operator attempted to open the pressurizer PORVs, PCV-68-340 failed to open.

Which ONE of the following describes the correct operator mitigation strategy to respond to this problem?

- A. Stop one Centrifugal Charging Pump to reduce loss of inventory through PORVs.
- B. Close any open Pzr PORV to conserve RCS inventory and return to the steps to re-establish Main Feedwater.
- C.  Open the reactor head vents to reduce RCS pressure since one pressurizer PORV may not provide sufficient heat removal capacity.
- D. Verify PORV, 1-PCV-68-334, and its block valve open to reduce RCS pressure since 1 Pzr PORV provides adequate heat removal capacity for a loss of heat sink.

Ref: WB lesson plan 3-OT-FRH0001, obj. 9 & 10

Distractor analysis:

- a. Incorrect - one PORV is not sufficient to provide adequate heat removal.
- b. Correct - increases the bleed path capability and reduce pressure to ensure the core remains cooled.
- c. Incorrect - procedure directs bleed and feed not depressurizing a SG which would be a less effective cooling method.
- d. Incorrect - more bleed path capacity is needed to ensure pressure reduction and cooling capability, not less injection.

## QUESTIONS REPORT

for WBfindraft

74. WE10EA2.2 001/T1G1/T1G1//C/A (3.4/3.8)/B/WB02301/C/EL

Given the following plant conditions:

- Reactor trip occurred with subsequent loss of RCPs.
- Operators have implemented ES-0.2, "Natural Circulation Cooldown".
- A cooldown rate of 25°F/hour has been established.
- RCS depressurization has been initiated while maintaining subcooling > 165°F.
- Operators are monitoring PZR level and RVLIS for void formation.
- The OAC observes that loss of inventory in the Condensate Storage Tank is imminent.

Which ONE of the following describes the appropriate procedural actions?

- A. Stop the cooldown and remain in ES-0.2.
- B. Raise the cooldown rate and remain in ES-0.2.
- C. Transition to ES-0.3, "Natural Circulation Cooldown With Steam Voids in Vessel (With RVLIS) and lower the cooldown rate.
- D. ✓ Transition to ES-0.3, "Natural Circulation Cooldown With Steam Voids in Vessel (With RVLIS) and raise the cooldown rate.

The correct answer is D.

- a. Incorrect - loss of CST inventory should cue the examinee that transition to ES-0.3 is appropriate. Examinee may believe stopping cooldown is appropriate to conserve inventory.
- b. Incorrect - loss of CST inventory should cue the examinee that transition to ES-0.3 is appropriate. Examinee may believe raising cooldown rate would be appropriate in order to reach RHR conditions sooner however ES-0.2 does not provide instruction to do this.
- c. Incorrect - loss of CST inventory is an appropriate condition to require transition to ES-0.3 since more rapid cooldown rate is allowed while addressing voids in the RCS. Examinee may believe it is necessary to lower cooldown rate to conserve inventory.
- d. Correct - loss of CST inventory is an appropriate condition to require transition to ES-0.3 since more rapid cooldown rate is allowed while addressing voids in the RCS.

QUESTIONS REPORT  
for WBfindraft

75. WE11EA1.3 001/T1G2/T1G2/RECIRCULATION/C/A 3.7/4.2/B/WB020301/C/RLM

Given the following plant conditions:

- Reactor trip and SI occurred on Unit 1 due to a small break LOCA.
- Crew has transitioned from ES-1.3, "Transfer to RHR Containment Sump", to ECA-1.1, "Loss of RHR Sump Recirculation", due to the failure of both RHR sump suction valves to open.
- Crew has reduced ECCS flow to 1 CCP, *closed BUT outlet valves and established charging flow* per Figure 1 of ECA-1.1.
- Crew is performing Step 23 of ECA-1.1 to check makeup flow adequate and observes the following indications:
  - Loop 2 RCP running
  - RVLIS = 60% and slowly dropping

Which ~~one~~ <sup>ONE</sup> of the following lists the correct operator action for this condition?

- A. Ensure additional makeup source to RWST has been aligned.
- B.  Control charging to raise makeup flow.
- C. Place RHR shutdown cooling in service.
- D. Slowly depressurize RCS to inject CLAs.

Ref: WB lesson plan 3-OT-ECA0101, obj. 1  
WB procedure ECA-1.1

Distractor analysis:

A is incorrect because this is a continuing action from earlier in the procedure, not a hold point.

B is correct per step 23 RNO because RVLIS < 63% w/ RCP running.

C is incorrect because stem does not indicate that pressure-temp conditions would allow.

D is incorrect because the depressurization step is later in the procedure assuming adequate subcooling and PZR level which are not indicated in the stem.

15

In original bank question the following was a distractor:

"Place at least one train of ECCS pumps inservice until RVLIS > 65%.". It has been replaced because step 23 RNO also has "OR restart ECCS pumps as necessary".

*reworded stem to match ECA-1.1 step 22 wording*

**QUESTIONS REPORT**  
for WBfindraft

1. 001A4.03 001/T2G1/T2G1/BORATION/C/A 4.1/3.9/B/WB020301/R/RLM

During a plant heatup, the control rods were withdrawn 5 steps in the BANK-SELECT position to prevent "thermal lock-up" of the rods during the heatup.

Which ONE of the following would result if the control rods were NOT fully inserted using BANK-SELECT prior to withdrawing rods using MANUAL?

- A. Rod upper limit stop malfunction.
- B. ✓ Rod bank overlap malfunction.
- C. Rod bottom lights malfunction.
- D. Rod Position Indication malfunction.

Ref: WB exam bank

RO

## QUESTIONS REPORT

for WBfindraft

2. 003A2.02 001/T2/G1/T2/G1/RCP/C/A 3.7/3.9/N/WB02301/R/RLM

*GIVEN THE Following*

- Unit 1 is at 39% power
- Annunciator 100D, RCP Seal Leak Off Flow Hi has alarmed, due to #4 RCP.
- #1 RCP Lower Bearing Temperature is at 220°F and increasing.
- *#1 RCP has been tripped*
- *#1 Seal Return valve has been closed following coastdown*

Per AOI-24, which ONE of the following describes the correct actions for the control room crew?

- A. ~~Trip the #1 RCP, close #1 Seal Return FCV, Trip the Rx and go to E-0, Rx Trip or Safety Injection.~~
- B. ~~Trip the #1 RCP, close #1 Seal Return FCV and go to GO-5, UNIT SHUTDOWN FROM 30% REACTOR POWER TO HOT STANDBY.~~
- C. ~~Trip the #1 RCP, close #1 Seal Return FCV and go to AOI-5, Unscheduled Removal of One RCP Below P-8~~
- D. ~~Trip the #1 RCP, close #1 Seal Return FCV and go to AOI-39, Rapid Load Reduction to remove the Unit from service.~~

Ref: WB lesson plan 3-OT-AOI2400, obj. 10  
WB AOI-24, section 3.2, step 2

Distractor analysis:

A is incorrect because AOI 24, section 3.2, step 2 says to trip Rx IF power >48%, otherwise, trip the RCP

B is incorrect (same as A) and because once Rx is tripped in AOI 24, then E-0 becomes controlling procedure.

C is correct based on AOI 24, section 3.2, step 2 RNO for rising bearing temp directs tripping pump, closing seal leakoff and going to AOI-5

D is incorrect because power is less than P-8, 48% and AOI 24 directs transition to AOI- 5, which after several other actions can direct to AOI-39 or other power reduction procedures.

*moved items to stem.*

QUESTIONS REPORT  
for WBfindraft

3. 004K4.04 001/T2G1/T2G1/CONTROL TRANSFER/C/A 3.2/3.1/N/WB020301/R/RLM

*Given the following:*

- Unit 1 is recovering from a Main Control Room evacuation in accordance with AOI-27, Main
- Control Room Inaccessibility and control has been formally transferred from the Auxiliary
- Control Room.

*When* The UO attempted to perform a blended makeup to the VCT ~~when~~ annunciator 112-E, PW to Blender Flow Deviation alarmed.

Which ONE of the following describes the cause of the alarm?

- A. Transfer switch for Primary Water Pumps left in Aux position
- B.  Transfer switch for FCV-62-143, Blender Primary Water Flow Control Valve left in Aux position
- C. Transfer switch for ~~VCT LEVEL XMIT~~ <sup>LETDOWN DIVERT LCV TO HUT</sup> 1-LCV-62-118 left in Aux position
- D. Transfer switch for FCV-62-144, Makeup to CCP Suction Flow Control Valve left in Aux position

Ref: WB procedure AOI-27  
No learning objective found

Distractor analysis:

A is incorrect, switch does not exist

B is correct, in Aux position at the Auxiliary Control Room, FCV-143 remains closed regardless of activities on the Main Control Board

C is incorrect because level is not an input when performing a manual makeup

D is incorrect because this switch does not exist

*1-LCV-62-118 is VCT Divert valve*

*VCT LTs are 62-129 or 62-130*

## QUESTIONS REPORT

for WBfindraft

4. 005AK3.02 001/T1G1/T1G1//C/A (2.5/2.6)/B/WB02301/R/EL

Given the following plant conditions:

- Reactor power is at 75% with a power rise in progress using control rods.
- The OAC determines that Control Bank D rod H-12 is immovable and is 14 steps below the other rods in Bank D.
- Crew is performing AOI-2, "Malfunction of Reactor Control System"

Which ONE of the following describes how control rod H-12 will be realigned to control bank D and how control bank insertion limit will change following the realignment?

- A. Control Bank D will be realigned to control rod H-12 and control bank D insertion limit will be higher.
- B. ✓ Control Bank D will be realigned to control rod H-12 and control bank D insertion limit will be lower
- C. Control rod H-12 will be realigned to Control Bank D and control bank D insertion limit will be lower.
- D. Control rod H-12 will be realigned to Control Bank D and control bank D insertion limit will be higher.

The correct answer is B

a. incorrect - the method of realignment is correct but the change in insertion limit is in the wrong direction since the bank will be inserted to match H-12 position.

b. correct - control bank D will be inserted to match rod H-12 position and since the bank is being inserted the insertion limit for control bank D will be lower after the bank is aligned with rod H-12.

c. incorrect - the method of realignment is incorrect and the change in insertion limit is wrong since the bank will not move the insertion limit will not change.

d. incorrect - the method of realignment is incorrect and the change in insertion limit is wrong since the bank will not move the insertion limit will not change.

### REFERENCE:

AOI-2, section 3.4 p. 23. Lesson plan 3-OT-SYS085A pp. 36-37.

10CFR55.41.5, 10

RO - 1

SRO - 1

## QUESTIONS REPORT

for WBfindraft

5. 005K5.03 001/T2G3/T2G3/BORATION/C/A 2.9/3.1/B/WB020301/R/RLM

*GIVEN THE FOLLOWING:*

- Unit 1 is in Mode 4 with #1 Reactor Coolant Pump running. • "A" train RHR has JUST been placed in service when the Reactor Operator notes source range counts suddenly increasing. *RISING*

Which ONE of the following describes the correct action?

- A.  Commence a ~~maximum~~ boration per AOI-34 Immediate Boration to add negative reactivity.
- B. Start the #2 Reactor Coolant Pump and secure the #1 Reactor Coolant Pump to ensure through mixing of the RCS volume.
- C. Start "B" Train RHR and secure "A" train RHR to reestablish pre-event conditions.
- D. *Allow RCS to heat up to add negative reactivity*  
~~Commence a normal boration to decrease the source range counts.~~

Ref: TP Exam Bank, no specific learning objective found  
Need copy of AOI 34 to verify this question.

Distractor Analysis:

A is correct because AOI provides guidance to immediately borate when uncontrolled +reactivity is inserted.

B is incorrect because swapping RCP's will not add negative reactivity to the core.

C is incorrect same as answer B.

D is incorrect because there is no guidance for a normal boration.

*D is correct as written. Changed wording similar to FR-5.1 for negative reactivity insertion*

**QUESTIONS REPORT**  
for WBfindraft

6. 008K1.02 001/T2G3/T2G3/CCW LOADS/M 3.3/3.4/B/WB020301/R/RLM

Which ONE of the following correctly describes the uses of CCS in the Reactor Building?

- A. RCP oil coolers, Seal Water Htx. and RCP thermal barriers.
- B. RCP oil coolers, RCP thermal barriers and Regen Htx.
- C. RCP oil coolers, RCP thermal barriers and Non-Regen Htx.
- D. RCP oil coolers, RCP thermal barriers and Excess Letdown Htx.

Ref: WB Lesson Plan 3-OT-SYS070A, obj. 2&15

Dwg. 47W859-2

Distractor analysis:

See attached dwg. Note dwg says Containment, and question call it Rx bldg?

## QUESTIONS REPORT

for WBfindraft

7. 009EA2.39 001/T1G2/T1G2/RCP TRIP CRITERIA/M 4.3/4.7/B/WB020301/R/RLM

Which ONE of the following explains why it is preferable to leave the RCP's running during a small break LOCA if the RCS pressure RCP trip criteria on the foldout page are met but there is no SI flow?

- A. To provide heat removal through the break and the S/G's.
- B. To maintain two phase mixture level above the break longer.
- C. To limit single phase inventory loss out of the break.
- D. To prevent boron stratification in the core.

Ref: WB Lesson Plan 3-OT-0100, obj. 3  
WB Lesson Plan 3-OT-0100, pp. 14

DC Cook exam bank

A is correct because the pumps will pump two phase (or steam) flow and cool by reflux in S/G's  
B is incorrect because the two phase mixture will continue to exit the vessel.  
C is incorrect same as B.  
D is incorrect because there will be boron stratification in the core due to severe inventory depletion.

## QUESTIONS REPORT

for WBfindraft

8. 013K6.01 001/T2G1/T2G1/CHANNEL FAILURE/C/A 2.7/3.1/B/WB020301/R/RLM

Given the following plant conditions:

- Reactor power is 100%
- Pressurizer pressure channel I, 1-PT-68-340, has been removed from service for surveillance testing with it's associated bistables tripped.
- Pressurizer pressure channel IV, 1-PT-68-322, fails ~~low~~  
LOW

Which ONE of the following describes the result of these conditions?

- A. Reactor trip, but NO Safety Injection  
Pzr PORV, 1-PCV-68-340 remains closed
- B. Reactor trip and Safety Injection  
Pzr PORV, 1-PCV-68-340 remains closed.
- C. Reactor trip but NO Safety Injection  
Pzr PORV, 1-PCV-68-340 opens.
- D. Reactor trip and Safety Injection  
Pzr PORV, 1-PCV-68-340 opens.

Ref: WB Lesson Plan 3-OT-SYS099A  
47W611-63-1

Did not find specific lesson plan on ESFAS.

## QUESTIONS REPORT

for WBfindraft

GIVEN THE Following:

9. 015G2.2.12 001/T2G1/T2G1/SURVEILLANCE/C/A 3.0/3.4/N/WB020301/R/RLM

Unit 1 has been ramping up in power in accordance with GO-4, Normal Power Operation and has stabilized at 53% power to perform 1-SI-92-1, NIS daily comparison.

Results of the surveillance are as follows:

Calorimetric Power - 49%

N-41 indication - 54%

N-42 indication - 52%

N-43 indication - 52%

N-44 indication - 53%

Which ONE of the following describes the required action?

50000

- A. Shall obtain concurrence from the System 92 System Engineer and adjust all NI's to 49%.
- B. Make no adjustments
- C. Shall obtain concurrence from the System 92 System Engineer and adjust all NI's to 51%.
- D. Adjust N-41 to 51%

Ref: WB procedure 1-SI-92-1

No specific learning objective

This is a daily surveillance, but may want to provide precautions and limitations.

Distractor analysis:

A is correct in that it is permissible to downward adjust NI's to equal calorimetric, but N-41 requires concurrence from the engineer because it's adjustment will exceed 4%

B is incorrect because T/S requires NI's to be + or - 2% or less

C is incorrect because no NI will be adjusted more than 4%

D is incorrect because the other NI's will still be out more than 2%.

## QUESTIONS REPORT

for WBfindraft

Given the Following:

10. 016K3.02 001/T2G2/T2G2/PZR LEVEL TRANSMITTE/C/A 3.4/3.5/M/WB020301/R/RLM

With Pressurizer Level Control Channel Select switch 1-XS-68-339E selected to LI-68-339 & 335, the following SEQUENTIAL plant events occur due to a failure without operator action.

- Charging flow ~~increases~~<sup>risers</sup> to maximum
- Pressurizer level begins to rise
- Letdown isolates and heaters turn off
- Pressurizer level eventually rises to the high level reactor trip

Which ONE of the following failures occurred?

- A. Level channel 1-LT-68-339 failed high.
- B. Level channel 1-LT-68-335 failed high.
- C. Level channel 1-LT-68-339 failed low.
- D. Level channel 1-LT-68-335 failed low.

Ref: WB lesson plan 3-OT-SYS068C, Obj. 12

Distractor analysis:

A is incorrect because charging "see" the level as high, throttles to minimum. Actual level decreases and channel LT 335 shut letdown valve 62-69 and isolates heaters. With no letdown, even an minimum charging, actual level rises to the high level trip setpoint.

B is incorrect because LT-68-335 can't be selected for level control

C is correct because failing low makes charging increase and level would initially go up rapidly due to letdown also isolating and cause a trip the Rx

D is incorrect same as B

## QUESTIONS REPORT

for WBfindraft

11. 022K4.03 001/T2G1/T2G1/ESF ACTUATION/M 3.6/4.0/B/WB020301/R/RLM

Given the following plant conditions:

- Reactor trip & Safety Injection occurred due to Large Break LOCA.
- Containment ØB isolation has occurred.
- All systems responded normally.

Which ONE of the following describes the response of the Lower Compartment Coolers when ØB is reset?

- A. Fans in A-P-AUTO remain off.  
Cooler ERCW isolation valves remain closed.
- B. Fans in A-P-AUTO remain off.  
Cooler ERCW isolation valves open.
- C. Fans in A-P-AUTO start.  
Cooler ERCW isolation valves remain closed.
- D. Fans in A-P-AUTO start .  
Cooler ERCW isolation valves open.

Ref: WB Lesson Plan 3-OT-SYS030C, obj. 5  
WB Exam Bank

Need licensee to verify this question. Lesson plan a bit vague on this point.

**QUESTIONS REPORT**  
for WBfindraft

12. 051AA2.02 001/T1G1/T1G1//M (3.9/4.1) 43.5/45./B/WB02301/R/EL/KFO

Which ONE of the following combinations requires ONLY the turbine (NOT the reactor) to be tripped per AOI-11, " Loss of Condenser Vacuum"?

- A. Generator load 700 MWe; condenser pressure 5.3" Hga.
- B. Generator load 400 MWe; condenser pressure 5.0" Hga.
- C. ✓ Generator load 300 MWe; condenser pressure 4.0" Hga.
- D. Generator load 200 MWe; condenser pressure 3.0" Hga.

REF WB bank, validated in AOI-11

- A. incorrect - per back pressure limit table in AOI-11
- B. incorrect - per back pressure limit table in AOI-11
- c. correct
- d. incorrect - per back pressure limit table in AOI-11

## QUESTIONS REPORT

for WBfindraft

13. 056AK1.01 001/T1G3/T1G3/ES-0.2/C/A 3.7/4.2/N/WB02301/R/RLM

*Given the Following:*

-Unit 1 has experienced a Loss of Offsite Power

-The operating crew is currently performing a cooldown, in accordance with ES-0.2, Natural Circulation Cooldown

-Prior to initiating the cooldown, two CRDM fans trip

Which ONE of the following describes the maximum allowable cooldown rate?

A. <100°F in any one hour

B. <50°F in any one hour

C. <25°F in any one hour

D. <10°F in any one hour

Ref: Watts Bar Lesson Plan 3-OT-EOP0000, obj. 15

Watts Bar Lesson Plan 3-OT-EOP0000, pp. 44 of 95

Distractor analysis:

Answer A is incorrect, but is normal max cooldown with forced RCS flow

Answer B is incorrect, but is correct for 3 or more CRDM fans operating (total of 4)

Answer C is correct per ES-0.2, step 7 RNO

Answer D just rounds out the 4

## QUESTIONS REPORT

for WBfindraft

14. 057AA2.18 001/T1G1/T1G1/VITAL BUS/M 3.1/3.1/B/WB020301/R/RLM

Given the following:

- Unit 1 at 100% power
- Alarms received indicate a failed electrical board
- Other indications are:
  - ~~All trip status lights out~~ *By trip-52 status panel 1-XX-55-5 will be dark*
  - Low seal flow to RCP's due to FCV-62-89 failing open
  - High charging flow due to FCV-62-93 failing open

Which ONE of the following identifies which electrical board that was lost?

- A. 125 V DC Vital Battery Board I
- B.  120 VAC Vital Instrument Power Board 1-I.
- C. 125 V DC Vital Battery Board II
- D. 120 VAC Vital Instrument Power Board 1-II.

Ref: WB Lesson Plan 3-OT-AOI2500, obj. 1  
WB procedures AOI-25.1,.2 and 21.1,.2

WB exam bank

Distractor analysis:

See attached procedures which show loads from each of the above boards.

## QUESTIONS REPORT

for WBfindraft

15. 059K4.11 001/T2G1/T2G1/FEEDWATER ISOLATION/C/A 3.1/3.3/M/WB020301/R/RLM

ONLY

After which ~~one~~ of the following events can the feedwater isolation be reset by operating the ~~TKO~~ feedwater isolation reset ~~pushbutton~~ without performing any other actions?

~~pushbutton~~  
pushbuttons

- A. A spray valve fails open causing pressurizer pressure to drop to 1725 psig. The spray valve is closed and pressure returns to 2235.
- B. From 10% Rx power, the operator overfeeds a single steam generator to the High-High Level setpoint and subsequently clears the High-High Level by reducing level.
- C. A turbine trip from 65% Rx power, causing a reactor trip. Steam dumps open to control Tav<sub>g</sub> at 557°F.
- D. A high steam line flow causes a low Tav<sub>g</sub> and an SI. Main Steam isolation terminates high flow condition and allows Tav<sub>g</sub> to return to 557°F.

Ref: WB Lesson Plan 3-OT-SYS003A, obj. 13  
WB dwg. 1-47W611-3-2

### Distractor analysis:

Answers A and D are incorrect because the SI input must also be reset.

Answer C is incorrect because both the FWI switches AND pushbuttons must reset.

Answer B is correct because when only a Hi-Hi S/G level input is present, when it clears, only the pushbutton needs depressing to break the seal-in. See attached logic drawing.

**Note: This needs to be discussed with the licensee carefully in that the logic diagram seems to conflict with a statement from the startup procedure (also attached).**

**Need to verify that HS 3-99A2 on the dwg is the button mentioned in the lesson plan. If it is a switch, the stem will need to be changed.**

QUESTIONS REPORT  
for WBfindraft

16. 061K5.01R 001/T2G1/T2G1//C/A/M/WB02301/R/KFO

Given the following:

- The Unit 1 reactor tripped from 100% ~~pwr~~ power
- All systems responded as designed

The heat transfer rate between RCS and the steam generators will .....

- A. <sup>rise</sup> increase as RCS temperature <sup>rises</sup> increases and AFW flow <sup>rises</sup> increases.
- B. <sup>rise</sup> increase as RCS temperature <sup>stabilizes</sup> stabilizes and AFW flow <sup>rises</sup> increases.
- C. <sup>rise</sup> increase as AFW temperature <sup>rises</sup> increases and AFW flow <sup>rises</sup> increases.
- D. <sup>drop</sup> decrease as AFW temperature <sup>stabilizes</sup> stabilizes and AFW flow <sup>rises</sup> increases.

Modified from INPO bank -

- correct - as the temperature differential increases the heat transfer rate increases
- incorrect - as the temperature differential stabilizes the heat transfer rate stabilizes
- incorrect - as the temperature differential decreases the heat transfer rate decreases
- incorrect - as the temperature differential stabilizes the heat transfer rate stabilizes

Remove bulleted items in stem, or

alternative

Given the following:

- Plant tripped from 100% power due to a loss of cooling to the Main Generator
- Plant has stabilized in Mode 3

Which ONE of the following describes the effect on the heat transfer rate between the RCS & Steam Generators?

The heat transfer rate between the RCS and Steam Generators will...

- ✓ a. ~~rise~~ <sup>rise</sup> ~~with~~ <sup>if</sup> AFW flow rises
- b. ~~rise~~ <sup>rise</sup> <sup>if</sup> AFW temperature rises
- c. ~~drop~~ <sup>drop</sup> <sup>if</sup> AFW temperature drops
- d. ~~drop~~ <sup>drop</sup> <sup>if</sup> AFW flow rises

## QUESTIONS REPORT

for WBfindraft

17. 072A1.01 001/T2G1/T2G1/SFP/M 3.4/3.6/N/WB020301/R/RLM

~~Given~~ The following conditions exist:

- Unit 1 is defueled
- Fuel movement activites in progress in the Fuel Pool
- Radiation readings on 0-RM-90-102 and 103, Spent Fuel Pit Area Monitors have been steadily rising.

If the radiation levels continue to rise, which ONE of the following should occur?

- A. Aux Building General Supply and Exhaust Fans and the Fuel Handling Area Exhaust Fans STOP and the ABGTS Fans START
- B. Aux Building General Supply and Exhaust Fans STOP and the Fuel Handling Area Exhaust Fans START
- C. Aux Building General Supply Fans and ABGTS Fans STOP and the Fuel Handling Area Exhaust Fans START
- D. Aux Building General Supply Fans <sup>STOP</sup> and the Fuel Handling Area Exhaust Fans STOP and ABGTS Fans START

Ref: WB Lesson Plan 3-OT-SYS030B, Obj.13  
3-OT-SYS090A, Obj.7

ARI 184-B

Distractor Analysis:

B, C, and D are incorrect because they should occur when the high radiation alarms actuate (See attached ARI-B)

A is correct because it should NOT occur

(See attached ARI-B)

*D is true as written.*

- ✓ A. Aux Bldg General Supply & Exhaust Fans STOP  
Fuel Handling Exhaust Fans STOP  
ABGTS Fans START
- B. Aux Bldg General Supply & Exhaust Fans STOP START  
Fuel Handling Exhaust Fans START  
ABGTS Fans STOP
- C. Aux Bldg General Supply & Exhaust Fans STOP START  
Fuel Handling Exhaust Fans START  
ABGTS Fans START
- D. Aux Bldg General Supply & Exhaust Fans STOP  
Fuel Handling Exhaust Fans STOP  
ABGTS Fans STOP

## QUESTIONS REPORT

for WBfindraft

18. 073A2.01 001/T2G2/T2G2/WASTE RELEASE/M 3.1/3.5/N/WB020301/R/RLM

Given the following:

- Unit 1 is at 100% power
- A liquid waste release is in progress
- Annunciator 181-A, WDS RELEASE LINE 0-RM-122 LIQ RAD HI alarms.
- The reading on RM-90-122 has decreased to less than background

Which ONE of the following describes the ~~initial~~ required actions by the control room operators?  
*Initial*

- A. Have the detector assembly cleaned.
- B. Notify RADCON to take radiation readings in the detector area.  
*0-RCU-77-43*
- C. Verify liquid rad waste release valve ~~RCV-77-43~~ shut.  
*RCV-77-43*
- D. Initiate a Maintenance Work Order to repair RM-90-122.  
*0-*

Ref: WB lesson plan 3-OT-SYS090A, obj. 7  
ARI 181-A

### Distractor analysis:

A is incorrect because there is no guidance to clean the detector although low readings could be the result of fouling.

B is incorrect due to no guidance to confirm that areas readings are suddenly less than typical background

D is correct based on the guidance in the ARI and the philosophy to secure releases to the environment when process monitors fail.

D is incorrect as an initial action although ultimately the detector will need repair at a later time.

\*\*\*Need to verify term that WB uses for Maintenance Work Order.

## QUESTIONS REPORT

for WBfindraft

19. 074EA2.01 001/T1G1/T1G1/SUBCOOLING/C/A/B/WB02301/R/KFO/LRM

Given the following:

- The Unit has tripped from 100% power with a LOCA in progress
- PZR pressure is 900 psig
- RCPs are tripped
- Core Exit thermocouples indicate 720 degrees F
- RVLIS indicates 36%
- $T_{hot}$  for all loops range between 512 °F and 525 °F

**ONE**

Which of the following describes the conditions existing in the core as applicable to the EOPs?

- A. Subcooled conditions, which present no challenge to the fuel matrix and fuel cladding as long as the hot leg temperatures remain below saturated conditions.
- B. Saturated conditions, which does not present a challenge to the fuel matrix and fuel cladding as long as the cold leg temperatures remain at saturated conditions.
- C. Saturated conditions, which present a potential challenge to the fuel matrix and fuel cladding.
- D. Super heated conditions, which present a imminent challenge to the fuel matrix and fuel cladding.

WB bank - validated on steam tables

- a. incorrect - not saturated conditions
- b. incorrect - is super heated but does challenge the fuel matrix and fuel cladding
- c. incorrect - not saturated conditions
- d. correct - superheated conditions that present a challenge to fuel matrix and cladding

**QUESTIONS REPORT**  
for WBfindraft

20. 078G2.4.11 001/T2G3/T2G3/LOSS OF AIR/C/A 3.4/3.6/B/WB020301/R/RLM

Given the following conditions:

- Plant in Mode 5.
- Total Loss of Control Air has occurred.
- Train "A" RHR in Shutdown Cooling mode.
- The OAC reports that Pressurizer level is 92% and slowly rising.
- CCS is inservice with flow to the RCP thermal barriers.

Which ONE of the following actions should be taken to control Pressurizer level per AOI-10, "Loss of Control Air"?

- A. Locally isolate charging and letdown and place excess letdown in service.
- B. Stop CCPs until PZR level is less than 70% then cycle a CCP on and off to maintain PZR level between 65 and 70%.
- C. Locally Isolate charging until PZR level is less than 70% then adjust then locally operate 1-FCV-62-93 to control charging flow.
- D. Stop CCPs until PZR level is less than 70% then start a CCP to establish seal injection flow.

Ref: WB lesson Plan 3-OT-AOI1000, obj 7  
AOI-10

Distractor Analysis:

- A is incorrect, the procedure does not direct isolation of charging, but stopping.
- B is incorrect, no procedural guidance to cycle charging between 65% and 70 %
- C is incorrect, no procedural guidance to locally operate FCV
- D is correct per AOI 10, section 3,4

**QUESTIONS REPORT**  
for WBfindraft

21. 086G2.4.25 001/T2G2/T2G2/PROCEDURE TRANSITION/M 2.9/3.4/B/WB020301/R/RLM

Given the following:

- The Unit is at 100% RTP and at steady state conditions.
- A fire is detected in the Auxiliary Building.
- The SM has determined the fire has the potential to affect equipment necessary to achieve/maintain safe shutdown.
- The US has transitioned to AOI-30.2, Fire Safe Shutdown.
- A Spurious Safety Injection occurs.

Which ONE of the following identifies the required procedure transition for the given conditions?

- A. Perform AOI-30.1, Plant Fires, concurrently with AOI-30.2, Fire Safe Shutdown.
- B. Perform AOI-30.2, Fire Safe Shutdown, while referring to ES-1.1 for SI termination actions.
- C. Perform E-O, Reactor Trip or Safety Injection, then AOI-30.2, Fire Safe Shutdown, when SI termination criteria is met.
- D. Perform AOI-30.2, Fire Safe Shutdown, while referring to other instructions as directed by AOI-30.2

Ref. WB lesson plan 3-OT-AOI3000  
AOI 30.2

Distractor analysis:

A is incorrect because AOI-30.1 is a non-Appendix R fire procedure and the SM has determined it to be an Appendix R fire.

B is incorrect because AOI 30.2 takes precedence over EOP's.

C is incorrect same as B

D is correct because it is permissible to run AOI-30.2 concurrently with normal plant instructions.

## QUESTIONS REPORT

for WBfindraft

Given the following:

22. 103A2.03 001/T2G3/T2G2/PHASE B/M 3.5/3.8/N/WB020301/R/RLM

- Unit 1 has Safety Injected
- Phase A isolation has occurred
- The crew is performing step 11 of E-0, Rx Trip or Safety Injection when the UO notes that Containment Pressure is 3.2 psig and Phase B has not actuated.
- MSIV's are open

Which ONE of the following describes the action(s) required?

- A. Manually actuate either Phase B manual handswitches and manually start the Containment Spray pumps.
- B. Manually actuate both Train A and B Phase B manual handswitches and manually start the Containment Spray pumps.
- C. Manually actuate either Phase B manual handswitches and manually shut the MSIV's and bypasses.
- SPACE* } D. Manually actuate both Train A and B Phase B manual handswitches and manually shut the MSIV's and bypasses.

Ref: WB lesson plan 3-OT-SYS088A, obj. 9

WB dwg. 1-47W-611-88-1

Distractor analysis:

A and C are incorrect because Phase B manual actuation required BOTH switches actuated simultaneously.

B is incorrect because spray pumps start as a result of manual actuation (see logic dwg)

D is correct because both switches are actuated and MSIV's only isolate as a result of input from Containment Pressure instruments.

- A. Manually actuate either PB handswitch, the MSIV's will close automatically on manual PB.
- B. Manually actuate either PB handswitch, manually close MSIV's.
- C. Manually actuate both PB handswitches, MSIV's will close automatically on manual PB.
- ✓ D. Manually actuate both PB handswitches, manually close MSIV's.

**QUESTIONS REPORT**  
for WBfindraft

23. WE02EA1.2 001/T1G2/T1G1//C/A (3.4/4.0)/B/WB02301/R/EL

Given the following conditions:

- Plant is recovering from a reactor trip and safety injection due to a faulted SG.
- Faulted SG has completely blown down and as been isolated in accordance with the appropriate EOP.
- RCS pressure is 1900 psig and rising.

When terminating safety injection which ONE of the following identifies actions that result in a drop in the ECCS flow to the RCS?

- 1) Stopping the 1st charging pump.
- 2) Stopping both safety injection pumps.
- 3) Establishing normal charging and isolating BIT.
- 4) Stopping RHR pumps.

A. 1 and 3.

B. 3 and 4.

C. 1 and 2.

D. 2 and 4.

The correct answer is A.

- a. Correct - both these actions would result in reducing flow to the core since at this pressure only CCPs would inject.
- b. Incorrect - 3 would reduce flow, however RHR pumps are not injecting at this pressure.
- c. Incorrect - 1 would reduce flow, however the SI pumps are not injecting at this pressure.
- d. Incorrect - neither would reduce flow at this pressure.

Reference: SYS063A; EOP0000.18  
K/A E02 EK1.1 [3.2/3.8]

**QUESTIONS REPORT**  
for WBfindraft

24. WE08G2.4.18 001/T1G1/T1G1/PTS/M 3.4/4.2/B/WB020301/R/RLM

Step 1 of FR-P.1, "Pressurized Thermal Shock", has the operator check that RCS pressure is greater than 150 psig.

This step is based on:

- A. Preventing implementation of actions in FR-P.1 if a large break LOCA has occurred.
- B. Ensuring adequate low head safety injection cooling prior to isolating CLAs.
- C. Preventing core exit temperatures from exceeding the required temperature to place RHR inservice.
- D. Ensuring RHR system is in service to provide adequate mixing in the cold leg downcomer region.

Ref: WB Lesson Plan 3-OT-FRP0001, obj. 9

WB exam bank

Answer A is correct, see attached lesson plan.

## QUESTIONS REPORT

for WBfindraft

25. WE13EK3.2 001/T1G3/T1G3/OVERPRESSURE/C/A 2.9/3.3/B/WB020301/R/RLM

During the performance of FR-H.2, "Steam Generator Overpressure", operators are directed to verify T-hot less than 545°F if initial attempts to depressurize the SG(s) is unsuccessful.

Which ONE of the following is bases for this verification?

- A. Ensures that the SG level instruments (WR) will be within the required accuracy during the depressurization.
- space* → B. Determines whether SG blowdown can be used as a method to depressurize the affected SG(s).
- C. Ensures RCS saturation pressure is below shutoff head of SIPs in the event SGs become a heat SOURCE instead of a heat SINK.
- D. Ensures excessive heat transfer from the RCS is NOT the cause for the SG overpressure.

Ref: WB Lesson Plan 3-OT-FRH0001 obj 13

WB Lesson Plan 3-OT-FRH0001 pp 44 of 56

Source WB exam bank

Distractor analysis:

Answer D is correct based on lesson plan page 44

**QUESTIONS REPORT**  
for WBfindraft

1. 003A2.02S 001/T2G1/T2G1/RCP/C/A 3.7/3.9/N/WB02301/S/RLM

Unit 1 Reactor power has been reduced to remove Loop 3 RCP in accordance with AOI-5, Unscheduled Removal of One RCP Below P-8.

Which ONE of the following describes the initial plant response when the RCP is tripped and action required.

- A. Tav<sub>g</sub> in loop 3 <sup>risks</sup> increases to That of the other 3 loops and MFW flow must be reduced.
- B. ~~Tav<sub>g</sub> in loop 3 decreases~~ <sup>drops</sup> to less than T<sub>cold</sub> of the other 3 loops and MFW flow must be reduced.
- C. Tav<sub>g</sub> in loop 3 <sup>risks</sup> increases to That of the other 3 loops and loop 3 PZR spray valve must be closed.
- D. Tav<sub>g</sub> in loop 3 <sup>drops</sup> decreases to less than T<sub>cold</sub> of the other 3 loops and loop 3 PZR spray valve must be closed.

Ref: WB Lesson Plan 3-OT-AOI0500, obj. 6  
WB AOI-5, pp. 10

A & C are incorrect because loop 3 Tav<sub>g</sub> decreases (see quote from AOI 5 below)  
D is incorrect because loop 3 has no spray valve  
B is correct based on based on quote from AOI 5 below and step 1, section 3.3 of AOI 5.

"When a RCP is removed from service, a reverse flow occurs in the affected loop. The result is a significant reduction in the RCS hot leg temperature and reduction in steam generation from the affected SG. Previous experience in losing a RCP "at power" at WBN showed that Tav<sub>g</sub> in the affected loop went below T<sub>cold</sub> in the active loops until feedwater was isolated and a thermal equilibrium was reached. In this instance, Tav<sub>g</sub> for the affected loop went below the minimum temperature for criticality. Tav<sub>g</sub> returned to greater than 551°F in approximately 6 minutes following isolation of feedwater to the idle S/G. "

SRO

**QUESTIONS REPORT**  
for WBfindraft

2. 005AK2.02 001/T1G1/T1G1/DISCONNECT/C/A 2.5/2.6/N/WB020301/S/RLM

Unit 1 was at 25% power and ramping up when the RO noticed that one of the Bank C control rods is 13 steps below the other rods in Bank C which ~~were~~ <sup>are</sup> at 215 steps.

At 0900, immediately after discovery, power ascension was halted.

At 0945, the rod was determined to have an electrical problem which was repaired.

At 1015, the management staff has concurred with realignment of the misaligned rod in accordance with AOI-2, Malfunction of the Reactor Control System.

Which ONE of the following outlines the method of realignment?

- A. Record information from Bank Overlap Unit, step counters, and P/A converter. Disconnect lift coil for the affected rod, reset step counters, select Bank C and insert Bank C control rods.
- B. Disconnect lift coil of the affected rod, select Bank C and insert Bank C.
- C. Record information from Bank Overlap Unit, step counters, and P/A converter. Disconnect all lift coils in Bank C except the affected rod, reset step counters, select Bank C and withdraw affected control rod.
- D. Disconnect all lift coils in Bank C except the affected rod, select Bank C and withdraw the affected rod.

Ref: WB lesson plan 3-OT-AOI-0200, Obj. 8  
WB procedure AOI-2

Distractor analysis:

A is incorrect the procedure for aligning a rod misaligned for >1hr (ie. move the rod to the bank, not the bank to the rod)

B is incorrect same as A, also missing some steps. However, this is the method at step 13 for recovery prior to repair IF it were a Bank D rod.

C is correct per AOI 2 steps 33 through 37

D is incorrect because information from BOU, P/A and step counters must be recorded prior to realignment.

43.5 Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

## QUESTIONS REPORT

for WBfindraft

3. 005K5.03S 001/T2G3/T2G3/EMERGENCY BORATION/C/A 2.9/3.1/M/WB020301/S/RLM

Given the following plant conditions:

- The unit is in MODE 6, refueling activities in progress inside containment.
- "A" train RHR in service for core cooling and letdown to CVCS.
- Chemistry reports RCS boron concentration is 1925 ppm.

Which ONE of the following describes the correct actions and the reason?

- A. Isolate Refueling Cavity from the Spent Fuel Pit by closing the transfer tube wafer valve to prevent dilution of the Spent Fuel Pit.
- B. Place train "B" RHR in service, remove "A" train to isolate dilution paths connected to "A" train RHR.
- C. Initiate boration using AOI-34, "Immediate Boration" to <sup>raise</sup> ~~increase~~ boron concentration to minimum required limits.
- D. Evacuate containment and verify containment integrity intact to ensure Technical Specification 3.9.4, Containment Penetrations is met.

Ref: WB Exam bank, modified to add reason for SRO level question.

Need references GO-6, AOI-34

Distractor analysis:

A is incorrect in that closing the transfer tube valve will not help the regain SDM.

B is incorrect because swapping trains will not increase SDM

C is correct because AOI provides guidance immediately increase  $C_b = 2100$  ppm.

D is incorrect due to no procedural guidance to do so and it does not increase SDM.

43.5 Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

**QUESTIONS REPORT**  
for WBfindraft

4. 007EA1.03 001/T1G2/T1G2//C/A/B/WB02301/S/KFO

An RCS cooldown is in progress per ES-0.2, "Natural Circulation Cooldown". The plant is being depressurized using auxiliary spray. As pressure drops through 1300 psig, a rapid rise in pressurizer level is observed. Charging and Letdown are in manual and are matched.

Which <sup>ONE</sup> of the following describes the expected operator actions and the reason?

- A. Isolate charging flow and raise the cooldown rate to 50 degrees F/hr to help shrink RCS inventory.
- B. Isolate charging flow and place additional letdown orifice(s) in service to remove the excess RCS inventory.
- C. Isolate the Cold Leg Accumulators to prevent further introduction of nitrogen to the RCS.
- D. Isolate the auxiliary spray and energize pressurizer B/U heaters to collapse the bubble in the Rx head.

WB Bank -

- a. incorrect - increasing the cooldown rate will further decrease RCS pressure
- b. incorrect - this will decrease the inventory but not address the pressure drop
- c. incorrect - isolating the cold leg accumulators will not effect the level or ppressure at this time
- d. correct - stopping the aux spray flow will stop the depressurization and truning the B/U htrs on will help recover the pressure.

43.5 Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

QUESTIONS REPORT  
for WBfindraft

5. 009EA2.34 001/T1G2/TIG2/PROCEDURE/C/A (3.6 / 4.2)/B/WB02301/S/KFO

Given the following conditions on Unit 1:

- Reactor trip and safety injection have occurred
- MSIVs have just closed due to <sup>high</sup> containment pressure *← Crew is performing E-0 step 10*
- RCS pressure is 1700 psig and stable
- CETCs indicate 570 F
- Total AFW flow is 700 gpm
- PZR level is <sup>42%</sup><sub>25</sub>

Based on these known conditions, the operators should .....

- A. ~~actuate phase B to address the increased containment pressure.~~  
*Implement FR-2.1 to address the high containment pressure*
- B. ~~terminate Safety Injection.~~  
*Implement ES-1.1 to  
PB and STV*
- ✓ C. ~~verify all RCPs are stopped.~~  
*Reduce AFW flow to less than 500 gpm.*
- D. ~~initiate containment spray as a result of increased containment pressure.~~

Ref: bank from Byron '00, validated for WB in E-0, ES-1.1

- a. incorrect - Phase B actuated if containment pressure >2.8 psig,
- b. correct SI termination criteria met
- c. incorrect - adequate RCS pressure, no reason to trip RCPs
- d. incorrect - if required the containment spray pumps would have auto started, containment pressure only high enough to close MSIVs

QUESTIONS REPORT  
for WBfindraft

6. 028AA2.12 001/T1G3/T1G3/PZR LEVEL/C/A 3.3/3.4/N/WB020301/S/RLM

Given the following:

- Unit 1 is at 100% power
- Pressurizer level is decreasing slowly *dropping* *1-LIC-68-339*
- The output of the Pressurizer Level Controller is increasing *rising*
- The Charging Flow Controller is increasing *rising* *1-HIC-62-93A*
- Charging flow decreasing *dropping*
- Annunciator 92C, PZR LEVEL LO-HTRS OFF & LTDN CLOSED is illuminated

Which ONE of the following is the cause of the Pressurizer level decrease?

- A. FCV -62-93, charging flow control valve has developed a diaphragm leak.
- ~~A~~ B. The Charging Flow Controller *1-HIC-62-93 OUTPUT* is failing high.
- C. The PZR Level Controller *1-LIC-68-339* is failing high.
- D. The Tav input to the PZR is failing high.

Ref: Watts Bar lesson plan 3-OT-SYS068C, obj. 15

Watts Bar lesson plan 3-OT-SYS062A

Distractor analysis:

Answer A is incorrect because FCV-62-93 fails open, hence a diaphragm leak would tend to make the valve open (higher flow). Note: If the leak is small enough, the flow controller would handle it with increased output, but flow would stay on program until the controller max'ed out and then flow would increase.

Answer B is correct because the Charging Flow Controller failing, in this case high, causes FCV-62-93 to close thus decreasing flow and hence PZR level.

Answer C is incorrect because the PZR Level Controller failing high would call for more charging flow thus causing Charging flow and PZR level to increase.

Answer D is incorrect because the auctioneered high controlling Tav would call for a level increase until it max'ed out the program. This would cause charging flow to either increase or remain the same.

Tava  
Tave

# QUESTIONS REPORT

for WBfindraft

7. 038EA1.04 001/T1G2/T1G2/PRESSURE REDUCTION/C/A 4.5/4.8/N/WB020301/S/RLM

Given the following:

- Unit 1 was at 100% and experienced a failed open PORV for which the block valve only partially closed.
- After the immediate actions of ~~AE-0~~, Reactor Trip or Safety Injection, it has been determined that ~~12~~ <sup>#3</sup> SG is ruptured.
- The operating crew has isolated the ruptured SG and transitioned to ~~1~~ <sup>#3</sup> ECA-3.1, SGTR and LOCA - Subcooled Recovery
- RCS pressure ~~has recovered~~ and is 1750 psig and increasing <sup>rising</sup>
- Pressurizer level is 100%
- RCS temperature is 530° F <sup>80</sup>
- ~~12~~ <sup>#3</sup> SG ~~Wide Range level is 85% and increasing~~ <sup>rising</sup>
- All automatic systems have functioned properly and RCP's are running

Which ONE of the following describes the actions required to stabilize SG break flow?

- A. Cooldown by dumping steam from the non-ruptured SG's followed by depressurization of the RCS with Pressurizer Spray Valves.
- B. Cooldown with RHR followed by depressurization of the RCS with Pressurizer Spray valves.
- C.  Cooldown by dumping steam from the non-ruptured SG's followed by depressurization of the RCS with ~~Pressurizer PORV's~~ <sup>by sequential removal of ECCS pumps.</sup>
- D. Cooldown with RHR followed by depressurization of the RCS ~~with Pressurizer PORV's~~ <sup>by sequential removal of ECCS pumps</sup>

Ref: WB EOP E-3, Stm Gen Tube Rupture, pg 16 and 17

Distractor analysis:

Answer A is incorrect because PZR spray is not effective in a PZR with level at 100%

Answer B is incorrect because RCS pressure is too high for RHR and spray ineffective

Answer C is correct because PORV's are by procedure the next preferred depressurization method after PZR sprays and the SG's are the preferred heat removal method

Answer D is incorrect because RCS pressure is too high for RHR

*ECA-3.1 does not allow depressurization by PORV's or sprays if PZR level is >29%*

**QUESTIONS REPORT**  
for WBfindraft

8. 051AA2.02S 001/T1G1/T1G1/VACUUM/C/A 3.9/4.1/B/WB020301/S/RLM

Given the following:

- Condenser pressure rising; operators dropping turbine load in attempt to maintain vacuum.
- Condenser backpressure is 5.7 Hga.
- Main turbine load is 43%.

Which ONE of the following would be the FIRST to automatically occur or be procedurally required if condenser pressure continues to rise?

- A. Auto main turbine trip on low vacuum.
- B. Manual reactor trip.
- C. Loss of steam dump capability.
- D. Manual turbine trip.

Ref: WB Lesson Plan 3-OT-AOI1100, obj. 2  
AOI-11, Sec. 2.3; Sec. 3.0 steps 6-8  
WB Exam bank

Distractor analysis:

- A is incorrect because auto trip does not occur until vacuum >7.0 Hga
- B is incorrect because the procedure directs turbine trip first.
- C is incorrect because are capable until vacuum reaches >6.5 Hga
- D is correct per guidance in AOI 11

## QUESTIONS REPORT

for WBfindraft

9, 056AK1.01S 001/T1G3/T1G3/ES-0.2/C/A 3.7/4.2/N/WB02301/S/RLM

*GIVEN THE Following:*

- Unit 1 has experienced a Loss of Offsite Power
- The operating crew is currently performing a cooldown, in accordance with ES-0.2, Natural Circulation Cooldown
- Prior to initiating the cooldown, two CRDM fans trip

Which ONE of the following describe the implications of the loss of the two CRDM fans?

- A. ✓ The time to achieve RHR conditions is <sup>longer</sup> increased, requiring additional CST makeup.
- B. Steam voiding in the RCS vessel will occur unless ERCW is supplied to the AFW suction.
- C. Loss of RCS subcooling will occur as the RCS is being depressurized.
- D. At least one of the tripped fans must be restarted (total of 3 running) prior to commencing cooldown.

Ref: WB Lesson Plan 3-OT-EOP0000, obj. 15  
WB Lesson Plan 3-OT-EOP0000 pp. 41 & 42

Distractor analysis:

A is correct because with less than three CRDM's, the max cooldown rate is reduced from 50°F/hr to 25°F/hr which challenges the CST makeup capability (see basis for step in lesson plan)

B is incorrect because voiding in the vessel is related to depressurization which is not related to the choice of filling the CST from ERCW.

C is incorrect because the procedure controls subcooling margin during depressurization

D is incorrect because the procedure does not require 3 or more CRDM fans prior to start of cooldown.

(5) Facility operating characteristics during steady state and transient conditions, including coolant chemistry, causes and effects of temperature, pressure and reactivity changes, effects of load changes, and operating limitations and reasons for these operating characteristics.

## QUESTIONS REPORT

for WBfindraft

10. 057AA2.19 001/T1G1/T1G1/VITAL BUS/C/A 4.0/4.3/N/WB020301/S/RLM

Unit 1 is shutting down due to a failure of 120 VAC Vital Instrument Power Board 1-1. When Rx power is approximately 10%, the unit trips.

Which ONE of the following describes the reason for the trip?

- A. SRM High Flux Trip
- B. IRM High Flux Trip
- C. Low Setpoint of PRM High Flux Trip
- D. High Setpoint of PRM High Flux Trip

WB lesson plan 3-OT-AOI2500, Obj. 1 and 2

WB procedure AOI-25, pp. 8

Distractor analysis:

A is incorrect because the plant is above P-6

B is correct because 1 of 2 IRM's high flux trip is in when the plant goes below P-10 which reinstates the IRM High Flux Trip function.

C is incorrect because coincidence for PRM trip not met

D is incorrect because coincidence for PRM trip not met and power less than trip setpoint.

## QUESTIONS REPORT

for WBfindraft

11. 060AA2.04 001/T1G2/T1G2/GAS TANK LEAK/M/B/WB02301/S/KFO

Given the following plant conditions:

- Gas Decay Tank release in progress with ABGTS running for dilution air flow
- A leak occurs on the waste gas compressor which results in a gas release to the Auxiliary building
- 0-RE-90-101, Auxiliary Building Vent Monitor, is in alarm
- Assume no operator action

*ONE*

Which of the following indicates the effect this leak will have on the plant?

- A. Gas Decay Tank release will be terminated; ABGTS will be stopped
- B. Gas Decay Tank release will be terminated; ABGTS will continue to run
- C. Gas Decay Tank release will continue; ABGTS will be stopped
- D. Gas Decay Tank release will continue; ABGTS will continue to run

REF: WB ' 01 - verbatim question

SRO Only

(43.4) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.

## QUESTIONS REPORT

for WBfindraft

12. 073A2.01S 001/T2G2/T2G2/PURGE/C/A 3.1/3.5/N/WB020301/S/RLM

The following conditions exist for Unit 1:

- Mode 6
- Fuel movement in Containment in progress
- Containment Purge operating
- Annunciator 174-D, CNTMT PURGE EXH 1-RM-130/131 INSTR MALF alarmed
- ~~-A construction worker called the control room a few minutes after the alarm to say that he accidentally pulled some wires loose and a small pump stopped running in containment.~~

Which ONE of the following describes the required actions by the control room operators?

- A. Restore the rad monitor to service within 4 hours or suspend fuel movement.
- B.  Immediately shutdown containment purge when the annunciator alarms.
- C. Verify that containment purge automatically tripped.
- D. Suspend fuel movement until the rad monitor is restored to service.

Ref: WB lesson plan OT-SYS090A, obj 7

ARI 174-D

TS 3.6.6

Distractor analysis:

A is incorrect because neither the TS nor the ARI direct stopping fuel movement.

B is correct because the ARI directs shutting down purge if it is running

C purge does not automatically trip on RM 130/131 low flow (instrument count rate will decrease).

D is incorrect because again there is no guidance in TS or the ARI to suspend movement and there are specific actions required within specified timeframes (ie secure purge).

**QUESTIONS REPORT**  
for WBfindraft

13. 076AA2.02S 001/T1G1/T1G1//C/A/N/WB02301/S/KFO/RLM

Given the following:

- Unit is at 100%
- Chem - Lab reported Reactor Coolant Dose Equivalent Iodine-131 Specific Activity is  $\rightarrow 6.3 \mu\text{Ci/gm}$ , which is somewhat higher than expected.
- ~~The sample was taken @ 0730 on 11/04/02.~~

Based on these conditions, which ONE of the following operator actions are now required?

- Reference provided
- A. Place <sup>both</sup> all CVCS <sup>mixed bed</sup> demins in service at maximum flow rate and continue power operations.
- B. Monitor Dose Equivalent 1-131 within acceptable region of Appendix A once per 4 hr and reduce power as necessary to maintain within acceptable region of Appendix A.
- C. Place unit in Mode 3 at less than or equal to 500 °F within 6 hours.
- D\* Continue power operations. <sup>no</sup> with additional restrictions

WB Bank - validated per AOI-28 and lesson plan 3-OT-AOI12800

- a. incorrect - CVCS demins not required
- b. incorrect - c. incorrect - monitoring not required This action causes the plant to be unnecessarily reduce power.
- c. This action causes the plant to be unnecessarily reduce power.
- d. correct - The Reactor Coolant Dose Equivalent Iodine-131 **Specific Activity** per Appendix A of AOI 28 is less than the limit of  $10 \mu\text{Ci/gm}$ . No information is given about Dose Equivalent Iodine-131. Therefore, no action is required.

Note: This procedure, AOI 28, poorly distinguishes between the Specific Activity Spec and the Dose Equivalent Iodine Spec.

*copy of AOI-28 provided. 4 hr action*

QUESTIONS REPORT  
for WBfindraft

14. 086G2.4.25S 001/T2G2/T2G2/APPENDIX R FIRE/C/A 2.9/3.4/N/WB020301/S/RLM

*GIVEN THE FOLLOWING:*

Unit 1 is currently at 100%

A fire has been reported in the Auxiliary Building

The Turbine Driven AFW pump is disassembled for maintenance

All other equipment is functional

In accordance with AOI 30.2, Fire Safe Shutdown procedure, which ONE of the following functions, if lost, would prevent meeting the Steam Generator Inventory Control Function?

- A. 1A Motor Driven Auxiliary Feedwater Pump
- B. One channel of Steam Generator Level Control
- C.  Suction from the Condensate Storage Tank
- D. Suction flow from one train of Essential Raw Cooling Water

Ref: WB lesson plan 3-OT-AOI 3000, obj 12

AOI-30.2

Distractor Analysis:

According to the attached logic diagram, a loss of suction from the CST will prevent fulfillment of the SG Inventory Control Function. (see attached) This is not intuitive since one train of ERCW should suffice for supplying flow to AFW motor driven. Will need plant input on this.

Need to provide AOI 30.2 as reference

*logic diagram provided?*

*REF*

## QUESTIONS REPORT

for WBfindraft

*GIVEN THE FOLLOWING:*

15. 103A2.03S 001/T2G3/T2G2/PHASE B/M 3.5/3.8/N/WB020301/S/RLM

- Unit 1 has Safety Injected
- Phase A actuated
- Phase B just actuated
- A review of the Main Control Board indicates that the Air Return Fans are not running

Which ONE of the following describes the correct action and reason?

- A. Immediately start the Air Return Fans because they should have started on a Phase B Isolation Signal.
- B. Start Air Return fans when 10 minutes have elapsed to prevent Hydrogen gas pockets from forming in Containment.
- C. Immediately start the Air Return Fans to prevent Hydrogen gas pockets from forming in Containment.
- D. Start Air Return fans when 10 minutes have elapsed to prevent overloading safety related electrical busses during initial transient.

WB lesson plan 3-OT-SYS030D, obj 3

WB procedure E-0, step 11, RNO

Distractor analysis:

A and C are incorrect because E-0 requires waiting 10 min.

D is incorrect because there are no reference in FSAR, or lesson plans to electrical loading issues.

B is correct based on guidance in E-0 and secondary purpose of system

QUESTIONS REPORT  
for WBfindraft

16. G2.1.14 001/T3/T3/NOTIFICATION/M 2.5/3.3/N/WB020301/S/RLM

Which ONE of the following <sup>is required to</sup> ~~must~~ be notified when a Temporary Alteration installation has been completed or returned to normal?

- A. Unit Operator
- B. ~~Unit Supervisor~~ <sup>Operations Superintendent</sup>
- C.  Shift Manager
- D. Unit Manager

Ref: WB procedure SPP-9.5, Temporary Alterations  
No lesson plan provided

Distractor analysis:  
See attached

*SPP-9.5 states Shift Manager or "designate," which is the Unit Supervisor.*

## QUESTIONS REPORT

for WBfindraft

17. G2.2.29 001/T3/T3/FUEL HANDLING/M 1.6/3.8/B/WB020301/S/RLM

The following plant condition exists:

You are SRO for refueling into the reactor vessel when the US informs you that one source range channel has failed its surveillance.

Which ONE of the following is the required action?

- A. Suspend core alterations until the failed source range channel is operable.
- B. Continue fuel reload as one channel is operable.
- C. Continue fuel reload for = 1 hour in any 8 hour period until two source range channels operable.
- D. Suspend core alterations until boron sampling has been completed.

Ref: San Onofre Bank 2000  
WB Tech Specs, section 3.9.3

B and C are incorrect because they violate TS  
D is incorrect because it is part of the actions for loss of two source ranges

Don't have GO-7 Refueling procedure

**QUESTIONS REPORT**  
for WBfindraft

18. G2.2.8 001/T3/T3/50.59/C/A 1.8/3.3/B/WB020301/S/RLM

Changes to which ONE of the following will require a 10CFR50.59 review?

- A. Change to the Physical Security Plan that requires moving a section of the perimeter fence.
- B. Revision to the Radiological Emergency Plan that changes the designated assembly areas for accountability.
- C. System modification that adds a full flow recirculation test line to the discharge of the Safety Injection pumps.
- D. Changes to the Nuclear Quality Assurance Plan.

Reference: WB procedure SPP-9.4

WB failed to provide SSP-9.4, will need if distractor analysis to be done.

(43.3) Facility licensee procedures required to obtain authority for design and operating changes in the facility

**QUESTIONS REPORT**  
for WBfindraft

19. G2.3.8 001/T3/T3/WASTE GAS RELEASE/M 2.3/3.2/N/WB020301/S/RLM

Unit 1 is preparing to release Waste Gas Decay Tank E, which was removed from service 32 days ago, in accordance with SOI-77.02, WASTE GAS DISPOSAL SYSTEM.

Which ONE of the following describes the minimum approval authority for the release?

- A. UNIT ~~SUPERVISOR~~<sup>OPERATOR</sup> and CHEMISTRY DUTY MANAGER
- B. SHIFT MANAGER and UNIT ~~SUPERVISOR~~<sup>OPERATOR</sup>
- C. SRO and CHEMISTRY DUTY MANAGER
- D. SHIFT MANAGER and another SRO

Ref: WB procedure SOI-77.02  
No learning objective found

Distractor analysis:

A is incorrect because the Unit Supervisor is not listed in the procedure as an approval authority.

B and D are incorrect because the Chemistry Duty Manager must approve release of tanks less than 60 days old.

C is correct per attached procedure

## QUESTIONS REPORT

for WBfindraft

20. WE02EK1.2.001/T1G2/T1G1/SI TERMINATION/M 3.4/3.9/B/WB020301/S/RLM

Given the following conditions:

- Main steam line break has occurred outside containment, resulting in a reactor trip/safety injection (SI).
- MSIV closure stopped the steam release.
- SI termination criteria was met and the crew is currently terminating the SI per ES-1.1, "SI Termination."

Which ONE of the following combinations of parameters would require an immediate reinitiation of safety injection?

	Maximum CNTMT Press	RCS Subcooling	RCS Pressure	PZR Level
A.	1 psig	75°F	Stable	18%
B.	2 psig	72°F	dropping	20%
C.	3 psig	87°F	dropping	34%
D.	4 psig	60°F	Stable	24%

Ref: WB lesson plan 3-OT-EOP-0000, Obj. 8

*Distractor analysis:*

- Incorrect - with containment conditions below the adverse setpoint of 2.8 psig the reinitiation criteria is PZR level <15% and subcooling < 65°F.
- Incorrect - both PZR level and subcooling are above the minimum for conditions below adverse setpoints.
- Incorrect - both PZR level and RCS subcooling are above the minimum for adverse containment conditions.
- Correct - with adverse containment conditions (>2.8psig) the reinitiation criteria is PZR level <33% or RCS subcooling <85°F.

QUESTIONS REPORT  
for WBfindraft

21. WE04EA2.1 001/T1G2/T1G1/PROCEDURE TRANSITION/C/A 3.4/4.3/N/WB020301/S/RLM

*GIVEN THE FOLLOWING*

Unit 1 was at 100% and was manually Safety Injected due to <sup>dropping</sup> decreasing pressurizer level.  
Plant status is:

- The Operating Crew is performing E-0, Reactor Trip or Safety Injection
- All automatic actions occurred
- RCS pressure is stable at 1600 psig *← C ETC 560°F*
- Pressurizer level is slowly rising at 17%
- Steam Generator pressures and levels are stable *38%*
- Steam Generator were trending normal prior to isolation and Condenser exhaust rad monitor is normal *Blowdown Rad Monitors*
- Containment conditions are pre-event
- Area monitor recorder 1-RR-90-1 and 0-RR-90-12A have significantly upscaled
- Vent monitor recorder 0-RR-90-101 was trending up prior to isolation

Which ONE of the following describes the correct procedure transition?

- Go to ES-1.1, SI Termination*
- A. ~~Remain in E-0, Reactor Trip or Safety Injection.~~
  - B. Go to E-1, Loss of Reactor or Secondary Coolant.
  - C. *✓* Go to ECA-1.2, LOCA Outside Containment.
  - D. Go to ES-0.0, Rediagnosis.

Ref: WB Lesson Plan 3-OT-EOP0000, obj. 1  
WB Lesson Plan 3-OT-ECA0101, obj. 8

Distractor analysis:

- A is incorrect because Step 29 directs transition to ECA-1.2 due to abnormal Aux Bldg radiation levels.
- B is incorrect because Containment conditions are pre-event.
- C is correct because Step 29 directs transition to ECA-1.2 due to abnormal Aux Bldg radiation levels.
- D is incorrect because it only applies after transition from E-0.

*A is not a transition and could be correct depending on when indications were noted.*

## QUESTIONS REPORT

for WBfindraft

22. WE06EA2.1 001/T1G1/T1G1/FR-C.2/C/A/B/WB02301/S/RLM

*GIVEN THE FOLLOWING*

A LOCA is in progress with all RCPs secured, and the control room operators are attempting to stabilize plant conditions. An operator who is monitoring plant parameters observes the following:

- Core exit TCs: 780°F
- RCS Pressure 885 psig
- RVLIS : 50%

Which ~~one~~ <sup>ONE</sup> of the following describes current core cooling conditions and operational requirements?

- A. Subcooled. Operator action is not required because core cooling is satisfactory.
- B. Saturated. At their discretion, the operators can take action to restore subcooled core cooling per FR-C.3, "Response to Saturated Core Cooling."
- C.  Degraded. Prompt action must be taken per FR-C.2, "Response to Degraded Core Cooling," or conditions could degrade.
- D. Inadequate. Prompt action must be taken per FR-C.1 "Response to Inadequate Core Cooling, or core uncover and fuel damage could occur.

Modified from a Surry Bank Question # 425.

Lesson Plan 3-OT-FRC0001 FR-C.1,C.2,C.3, objective # 1

- A. Incorrect, the conditions given indicate that the RCS is in a superheat condition.
- B. Incorrect, the conditions given indicate that the RCS is in a superheat condition.
- C. Correct, the conditions given indicate that the RCS is in a degraded core cooling condition, and this is the correct remedial action to take.
- D. Incorrect, the conditions given indicate a degraded core cooling condition.

**QUESTIONS REPORT**  
for WBfindraft

23. WE08EA2.1S 001/T1G1/T1G1/PTS/M 3.4/4.2/B/WB020301/S/RLM

Given the following plant conditions:

- Crew is responding to a large-break LOCA
- FR-P.1 currently being performed in response to a PTS ORANGE path
- Containment status tree is ORANGE

Which ONE of the following is the correct crew response if the PTS status tree turns YELLOW prior to the completion of the Function Restoration Instruction?

- A. Crew should stop performance of all Function Restoration Instructions, then evaluate all Critical Safety Functions to determine the appropriate procedure to implement.
- B. Crew must complete FR-P.1 since it is equivalent to the PTS RED path Function Restoration Instruction, unless it is superceded by a higher priority RED path.
- C. Crew should continue with FR-P.1 until transitioned out or the procedure is completed. Status trees will be evaluated at that time to determine the appropriate procedure.
- D. Crew should stop performing FR-P.1 and implement the Containment ORANGE path Function Restoration Instruction since it is now the highest priority.

Ref: WB Lesson Plans 3-OT-FRP0001, obj. 10 and 3-OT-PAI1204, obj. 5  
Procedure PAI-1204, pp. 26  
WB exam bank

A is incorrect because while in FRP's, CSF status trees are monitored continuously  
B is incorrect because the plant conditions, not the procedure number determines implementation priority.

C is correct based on reference PAI-1204

D is incorrect because it conflicts with guidance in PAI-1204

## QUESTIONS REPORT

for WBfindraft

24. WE13EA2.1S 001/T1G3/T1G3/OVERPRESSURE/C/A 2.9/3.3/B/WB02301/S/RLM

*GIVEN THE FOLLOWING:*

The Unit 1 operating crew is currently executing E-1, "Loss of Reactor or Secondary Coolant".

Plant conditions are as follows: *1.5*

- Containment pressure is *4.5* psig and slowly *dropping* decreasing.
- RCS temperature is 570°F.
- S/G Pressures: S/G #1 = 1200 psig; S/G#2 = 1190 psig; S/G#3 = 1230 psig; S/G#4 = 1205 psig.
- SG NR Levels: S/G #1 = 25%; S/G#2 = 30%; S/G#3 = *82*~~25~~%; S/G#4 = 35%.
- FR-H.2, "Steam Generator Overpressure", has been entered.

For the existing plant conditions, the Unit Supervisor should:

- A. Direct the operators to NOT release steam from S/G#3 and transition to FR-H.3, "Steam Generator High Level" to control and lower S/G#3's level.
- space* B. Direct the operators to NOT release steam from S/G#3 and continue with FR-H.2 to reduce S/G pressure.
- C. Direct the operator to open the PORV on S/G#3 to drop pressure below 1220 psig then transition to FR-H.3, "Steam Generator High Level" to control and lower S/G#3's level.
- D. Direct the operator to open the PORV on S/G#3 to drop pressure below 1220 psig and continue with FR-H.2 to reduce S/G pressure.

Ref: WB Lesson Plan 3-OT-FRH0001 obj 6

WB Lesson Plan 3-OT-FRH0001 pp 41 & 42 of 56

10CFR43.5

Source WB exam bank last used in '98 SRO audit

Distractor analysis:

Answer A is correct based on FR-H.2 procedure step 3 RNO

Answers B, C, & D are incorrect based on inappropriate actions and branching directions

*4.5 is above FR-2.1 setpoint or should state FR-2.1 is complete  
must be > 85% to not release steam*

## QUESTIONS REPORT

for WBfindraft

25. WE16G2.3.10 001/T1G2/T1G2/EXPOSURE REDUCTION/M 2.9/3.3/B/WB020301/S/EL/RLM

Given the following:

- A Small Break LOCA occurred 12 hours ago.
- Containment pressure is 1.7 psig.
- Containment temperature is 220°F.
- Lower containment radiation indicated level is 25 R/hr.
- FR-Z.3, "High Containment Radiation", is entered.

Which ONE of the following actions is required in accordance with FR-Z.3?

- A. Perform a manual Phase B isolation.
- B.  Ensure control room isolation.
- C. Sample containment atmosphere using PASF.
- D. Ensure that all lower compartment coolers are in service.

Ref: WB Exam Bank

WB Lesson Plan 3-OT-FRZ0001, no specific learning objective

WB Lesson Plan 3-OT-FRZ0001, pp. 15

Distactor analysis:

B correct because of step 4 in FR-Z.3.

A, C, D, are incorrect because they are not required by the procedure.

Is this part of the sample?

Facility:		Date of Exam:		Exam Level: RO/SRO		
Item Description				Initials		
				a	b	c
1.	Clean answer sheets copied before grading			RLM	N/A	LM
2.	Answer key changes and question deletions justified and documented			RLM	N/A	LM
3.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)			RLM	N/A	LM
4.	Grading for all borderline cases (80% +/- 2%) reviewed in detail			RLM	N/A	LM
5.	All other failing examinations checked to ensure that grades are justified			RLM	N/A	LM
6.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants			RLM	N/A	LM
Printed Name / Signature					Date	
a. Grader	R. L. Monk / <i>R. L. Monk</i>			12/18/02		
b. Facility Reviewer(*)	N/A					
c. NRC Chief Examiner (*)	L. R. Miller / <i>L. R. Miller</i>			12/18/02		
d. NRC Supervisor (*)	<i>Carl Hopper / Carl Hopper</i>			12/18/02		
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.						

Watts Bar 12/9-12/02 Operating Test 11/26/02 Written	
Task Description	Date Complete
1. Facility written exam comments or graded exams received and verified complete	11/26/02
2. Facility written exam comments reviewed and incorporated and NRC grading completed, if necessary	12/16/02
3. Operating tests graded by NRC examiners	12/16/02
4. NRC Chief examiner review of written exam and operating test grading completed	12/16/02
5. Responsible supervisor review completed	12/18/02
6. Management (licensing official) review completed	12/18/02
7. License and denial letters mailed	1/9/03
8. Facility notified of results	12/18/02
9. Examination report issued (refer to NRC MC 0612)	1/17/03
10. Reference material returned after final resolution of any appeals	N/A