

ADMINISTRATIVE DOCUMENTS

(Yellow Paper)

1. Exam Preparation Checklist ES-201-1 ✓
2. Exam Outline Quality Checklist *.D.F.* ES-201-2 ✓
3. Exam Security Agreement(s) ES-201-3 ✓
4. Administrative Topics Outline (Final) ES-301-1 ✓
5. Control Room Systems & 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-401-6 ✓
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 ✓
14. Facility Submittal Letters (4) [] ✓

SEQUOYAH
2008-301

Facility: <u>SEQUOYAH</u>		Date of Examination: <u>JAN 2008</u>
Developed by: Written - Facility <input checked="" type="checkbox"/> NRC <input type="checkbox"/> // Operating - Facility <input checked="" type="checkbox"/> NRC <input type="checkbox"/>		
Target Date*	Task Description (Reference)	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a and b)	MBS
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	MBS
-120	3. Facility contact briefed on security and other requirements (C.2.c)	MBS
-120	4. Corporate notification letter sent (C.2.d)	MBS
[-90]	[5. Reference material due (C.1.e; C.3.c; Attachment 3)]	MBS
{-75}	6. Integrated examination outline(s) due, including Forms ES-201-2, ES-201-3, ES-301-1, ES-301-2, ES-301-5, ES-D-1's, ES-401-1/2, ES-401-3, and ES-401-4, as applicable (C.1.e and f; C.3.d)	MBS
{-70}	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	MBS
{-45}	8. Proposed examinations (including written, walk-through JPMs, and scenarios, as applicable), supporting documentation (including Forms ES-301-3, ES-301-4, ES-301-5, ES-301-6, and ES-401-6, and any Form ES-201-3 updates), and reference materials due (C.1.e, f, g and h; C.3.d)	MBS
-30	9. Preliminary license applications (NRC Form 398's) due (C.1.i; C.2.g; ES-202)	MBS
-14	10. Final license applications due and Form ES-201-4 prepared (C.1.i; C.2.i; ES-202)	MBS
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	MBS
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g)	MBS
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h) ✓	MBS
-7	14. Final applications reviewed; 1 or 2 (if >10) applications audited to confirm qualifications / eligibility; and examination approval and waiver letters sent (C.2.i; Attachment 5; ES-202, C.2.e; ES-204) <i>Per sending 2 waiver letters</i>	MBS
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k)	MBS
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	MBS
<p>* Target dates are generally based on facility-prepared examinations and 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. [Applies only] {Does not apply} to examinations prepared by the NRC.</p>		

ES-201 Examination Outline Quality Checklist Form ES-201-2

Facility: <u>Sequoyah 1+2</u>		Date of Examination: <u>1/2008</u>			
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, in accordance with ES-401.	TJ	TW	MB	
	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.	TJ	TW	MB	
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	TJ	TW	MB	
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	TJ	TW	MB	
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	TJ	TW	MB	
	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, and ensure that 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 that scenarios will not be repeated on subsequent days.	TJ	TW	MB	
	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.	TJ	TW	MB	
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form ✓ (2) task repetition from the last two NRC examinations is within the limits specified on the form ✓ (3) no tasks are duplicated from the applicants' audit test(s) ✓ (4) the number of new or modified tasks meets or exceeds the minimums specified on the form ✓ (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria ✓ on the form.	TJ	TW	MB	
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form ✓ (2) at least one task is new or significantly modified ✓ (3) no more than one task is repeated from the last two NRC licensing examinations ✓	TJ	TW	MB	
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days. ✓	TJ	TW	MB	
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 sections.	TJ	TW	MB	
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	TJ	TW	MB	
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	TJ	TW	MB	
	d. Check for duplication and overlap among exam sections.	TJ	TW	MB	
	e. Check the entire exam for balance of coverage.	TJ	TW	MB	
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	TJ	TW	MB	
a. Author	<u>Thomas Jones</u>	Printed Name	<u>[Signature]</u>	Signature	Date
b. Facility Reviewer (*)	<u>Thomas Wallace</u>		<u>[Signature]</u>		<u>1/17/08</u>
c. NRC Chief Examiner (#)	<u>MARK A. BATES</u>		<u>[Signature]</u>		<u>02/05/2008</u>
d. NRC Supervisor	<u>MALCOLM T. WIDMANN</u>		<u>[Signature]</u>		<u>02/05/08</u>
Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required. Not applicable for NRC supervisor examination outlines.					

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ES-201

Examination Outline Quality Checklist

Form ES-201-2

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, in accordance with ES-401.	TS	TR	MBS
	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.	TS	TR	MBS
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	TS	TR	MBS
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	TS	TR	MBS
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	TS	TR	MBS
	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, and ensure that 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 that scenarios will not be repeated on subsequent days.	TS	TR	MBS
	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. <i>ES-301-4 was not submitted with outlines. Licensee has looked at form. Licensee has been contacted.</i>	TS	TR	MBS
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.	TS	TR	MBS X
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations	TS	TR	MBS
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.	TS	TR	MBS
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 sections.	TS	TR	MBS
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	TS	TR	MBS
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	TS	TR	MBS
	d. Check for duplication and overlap among exam sections.	TS	TR	MBS
	e. Check the entire exam for balance of coverage.	TS	TR	MBS
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	TS	TR	MBS
a. Author	<u>Thomas Somers</u> Printed Name / <u>[Signature]</u> Signature	Date 10/15/07		
b. Facility Reviewer (*)	<u>Thomas D. Wallace</u> / <u>[Signature]</u>	Date 10/16/07		
c. NRC Chief Examiner (#)	<u>MARK A. BATES</u> / <u>[Signature]</u>	Date 11/14/07		
d. NRC Supervisor	<u>MALCOLM T. WIDMANN</u> / <u>[Signature]</u>	Date 11/14/07		
Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.				

* Exceptions are noted on Comment Sheet.

1. Pre-Examination

1/28/08 thru

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 2/8/08 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 (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). 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 1/29-2/5/08 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)	DATE NOTE
1. Thomas Jones	ILT EXAM LEAD	<i>[Signature]</i>	7/10/07	<i>[Signature]</i>	2/11/08
2. JOHN B. RODEN	ILT EXAM DEVELOPER	<i>[Signature]</i>	7/10/07	<i>[Signature]</i>	2/8/07
3. Thomas A. Wallace	Training Mgr	<i>[Signature]</i>	2/25/07	<i>[Signature]</i>	2/19/08
4. Steven R. Taylor	LOR INSTRUCTOR	<i>[Signature]</i>	7/25/07	<i>[Signature]</i>	2/11/08
5. David A. Porter	PROCEDURE WRITER	<i>[Signature]</i>	10/3/07	<i>[Signature]</i>	2/11/08
6. James D. Knight	Software Eng.	<i>[Signature]</i>	10/11/07	<i>[Signature]</i>	2/12/08
7. NORMAN GOOD	SIMULATOR ENGINEER	<i>[Signature]</i>	10-10-07	<i>[Signature]</i>	2-11-08
8. Dale Kaulitz	" "	<i>[Signature]</i>	10/11/07	<i>[Signature]</i>	2/19/08
9. Timothy Pitchford	SSC Monitor	<i>[Signature]</i>	10/11/07	<i>[Signature]</i>	2/11/08
10. David M. Breland	Reactor Operator	<i>[Signature]</i>	11/07/07	<i>[Signature]</i>	1/15/08
11. MARK N. Ragsdale	SRO	<i>[Signature]</i>	11/6/07	<i>[Signature]</i>	2/11/08
12. Mike B. Bercher	SIME	<i>[Signature]</i>	11/7/07	<i>[Signature]</i>	2/11/08
13. PAUL R. SIMMONS	OPERATIONS	<i>[Signature]</i>	11/8/07	<i>[Signature]</i>	2/11/08
14. R L Ellison	WORD	<i>[Signature]</i>	11/6/07	<i>[Signature]</i>	2/19/08
15. DOUG FOSTER	US/SRO	<i>[Signature]</i>	11/10/07	<i>[Signature]</i>	2/11/08

NOTES:

1. Pre-Examination

1/28/08 thru

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 2/8/08 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 (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). 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 1/28-2/9/08 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)	DATE NOTE
1.	Roger A. Brown	RO	<i>Roger A. Brown</i>	11-10-07	<i>Roger Brown</i>	2-15-08
2.	DAVID A. SMITH	RO	<i>David A. Smith</i>	1-10-07	<i>David A. Smith</i>	2-11-08
3.	Ryan W. Radel	RD	<i>Ryan W. Radel</i>	11/1/07	<i>Ryan W. Radel</i>	2/11/08
4.	Cecil E. Dyer	SRO	<i>Cecil E. Dyer</i>	12/1/07	<i>Cecil E. Dyer</i>	2-13-08
5.	Casay Pfeiffer	RO	<i>Casay Pfeiffer</i>	12/1/07	<i>Casay Pfeiffer</i>	2-15-08
6.	Michael D. McDaniel	RO	<i>Michael D. McDaniel</i>	12/12/07	<i>M. McDaniel</i>	2-12-08
7.	Chris T. Brooks	RO	<i>Chris T. Brooks</i>	1/7/08	<i>Chris T. Brooks</i>	2/1/08
8.	PAUL M. ALLEY	SRO	<i>Paul M. Alley</i>	1/7/08	<i>Paul M. Alley</i>	2/13/08
9.	Van L. Ford	SM/SRO	<i>Van L. Ford</i>	1/14/08	<i>Van L. Ford</i>	2/1/08
10.	KELLY D. FLORA	CAS CON	<i>Kelly D. Flora</i>	1/15/08	<i>Kelly Flora</i>	2/11/08
11.	ALBERT F. RODDY	SRO	<i>Albert Roddy</i>	1-25-08	<i>Albert Roddy</i>	2/11/08
12.	Michael W. Reese	OPS Instructor	<i>Michael W. Reese</i>	1/25/08	<i>Michael W. Reese</i>	2/1/08
13.	BRADLEY D. PICCHIOTTINO	OPS TRNG. MANAGER	<i>Bradley D. Picchiottino</i>	1/24/08	<i>Bradley D. Picchiottino</i>	2/1/08
14.						
15.						

NOTES:

SECURITY 2008

ES-201

Examination Security Agreement Form

Form ES-201-3

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 1/28/08 thru 2/8/08 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 (e.g., acting as a simulator boot; an operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). 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 _____. 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	DATE	SIGNATURE (2)	DATE NOTE
1. JOSEPH ARSENAULT	REVIEWER	<i>[Signature]</i>	11/21/07	<i>[Signature]</i>	2/11/08
2.					
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NOTES:

TOTAL P. 02

Facility:	Sequoyah 1 & 2	Date of Examination:	1/2008
Examination Level (circle one):	RO SRO	Operating Test Number:	NRC

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N,R	2.1.1 Knowledge of conduct of operations requirements. (CFR: 41.10 / 45.13) 3.7 / 3.8 Determine license status Active / Inactive
Conduct of Operations	D,S	2.1.33 Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. (CFR: 43.2 / 43.3 / 45.3) 3.4 / 4.0 Perform Shift Log SI-2 SG Level Instrumentation (JPM 176)
Equipment Control	N,R	2.2.18 Knowledge of the process for managing maintenance activities during shutdown operations. (CFR: 43.5 / 45.13) 3.6 Containment Closure Time
Radiation Control	D,R	2.3.10 Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure. (CFR: 43.4 / 45.10) 2.9 / 3.3 Survey Map (JPM 166)
Emergency Plan	D,S	2.4.41 Knowledge of the emergency action level thresholds and classifications.(CFR: 43.5 / 45.11) 4.1 Classify the REP Degraded Core with Possible Loss of Coolable Geometry and Likely Cntmt Failure (JPM 109)

NOTE: All items (5 total are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

*Type Codes & Criteria:

- (C)ontrol room
- Class(R)oom
- (D)irect from bank (≤ 3 for ROs; ≤ for SROs & RO retakes)
- (N)ew or (M)odified from bank (> 1)
- (P)revious 2 exams (≤ 1; randomly selected)
- (S)imulator

SRO Admin JPM Summary

- A1a The applicant will evaluate the status of licensed operators work history to determine if license is active or inactive.
- A1b The applicant will be required to recognize a required Technical Specification entry while completing and a portion of the daily shift surveillance instruction.
- A2 The applicant will evaluate a request to open a containment penetration during a refuel outage and determine the requirements.
- A3 The applicant will use a survey map to determine anti-contamination clothing requirements, stay time, and radiation levels in area.
- A4 The applicant will evaluate conditions for entry into the E-Plan, determine the proper classification, protection action recommendation, and make required notifications.

Facility:	Sequoyah 1 & 2	Date of Examination:	1/2008
Exam Level (circle one):	RO / SRO(I) / SRO (U)	Operating Test No.:	NRC
Control Room Systems [@] (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)			
	System / JPM Title	Type Code*	Safety Function
a.	W/E14 High Containment Pressure (EA-1.1) 3.7 / 3.7 Respond to High Containment Pressure (JPM 057AP1)	D,A,S	5
b.	003 Reactor Coolant Pump System (A2.01) 3.5 / 3.9 Respond to a #1 RCP Seal Failure	N,L,S	4P
c.	001 Control Rod Drive System (A3.05) 3.5 / 3.5 Shutdown Bank Withdrawal	M,A,L,S	1
d.	004 Chemical and Volume Control System (A4.06) 3.6 / 3.1 Fill and Vent Excess Letdown	N,L,S	2
e.	038 Steam Generator Tube Rupture (EA1.32) 4.6 / 4.7 SG tube rupture with MSIV fails to Close (JPM 075AP)	D,A,S	3
f.	015 Nuclear Instrumentation System (A1.01) 3.5 / 3.8 Calibrate Power Range Nuclear Instrumentation (JPM 22-AP2)	D,A,S	7
g.	064 Emergency Diesel Generator (ED/G) System (A4.06) 3.9 / 3.9 Shutdown the Diesel Generator (1A-A and 1B-B) (JPM 046-1)	M,D,S	6
h.			
In-Plant Systems [@] (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i.	061 Auxiliary / Emergency Feedwater System (A2.04) 3.4 / 3.8 Operate the TD AFW Pump Locally (JPM 74-2AP)	D,A,E,R	4S
j.	004 Chemical and Volume Control System (A2.25) 3.8 / 4.3 Uncontrolled Dilution Flow Path Isolation (0-SI-OPS 063-214.0)) (JPM 40-2)	D,R	1
k.	062 AC Electrical Distribution (A2.10) 3.0 / 3.3 Transfer 480v SD Board 2A1-A from Normal to Alternate (JPM 061AP2)	D,A	6
@	All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		

* Type Codes	Criteria for RO / SRO-T / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3 ⁶
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4 ⁷
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1 ¹
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1 ³
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1 ⁴
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected) ⁰
(R)CA	≥ 1 / ≥ 1 / ≥ 1 [✓]
(S)imulator	

JPM Summary

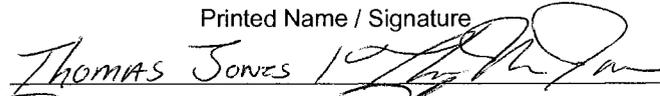
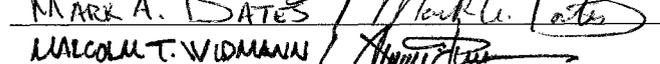
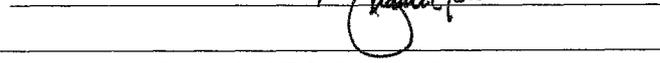
- JPM A RHR spray will be established in accordance with FR-Z.1, High Containment Pressure. This is a Bank Alternate Path JPM.
- JPM B An RCP seal failure will be diagnosed and the Abnormal Operating Instruction used to remove the pump from service. This is a new low power/shutdown JPM
- JPM C A failure of the step counter will occur during the withdrawal of Shutdown Rods requiring a reactor trip. This is a new alternate path low power/shutdown JPM.
- JPM D Excess letdown system will be filled and vented from the control room using the system operating instruction. This is a new low power/shutdown JPM.
- JPM E A Main Steam Isolation valve will fail to close during the isolation of steam side of a ruptured steam generator will be isolated. . This is a Bank Alternate Path JPM.
- JPM F Power Range nuclear instruments will be adjusted in accordance with the surveillance instruction 0-SI-OPS-092-078.0. This is a Bank Alternate Path JPM.
- JPM G Unit 1 Diesel Generators will be shutdown per EA-82-1. This is a Bank modified JPM.
- JPM I Plant JPM –The trip and throttle valve will not open electrically while TDAFW pump is being placed in service locally. This is an Alternate path Bank JPM using emergency abnormal procedure performed inside the RCA.
- JPM J Dilution flow path will be isolated using 0-SI-OPS 062-214.0. This is a Bank JPM performed inside the RCA using an Appendix contains in a surveillance instruction.
- JPM K Plant JPM - A breaker will fail to operate while a transfer of a 480v Shutdown Board is being attempted. This is a Bank Alternate Path JPM.

Facility:	Sequoyah 1 & 2	Date of Examination:	1/2008
Exam Level (circle one):	RO / SRO(I) / SRO (U)	Operating Test No.:	NRC
Control Room Systems [®] (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)			
	System / JPM Title	Type Code*	Safety Function
a.	W/E14 High Containment Pressure (EA-1.1) 3.7 / 3.7 Respond to High Containment Pressure (JPM 057AP1)	D,A,S	5
b.	003 Reactor Coolant Pump System (A2.01) 3.5 / 3.9 Respond to a #1 RCP Seal Failure	N,L,S	4P
c.	001 Control Rod Drive System (A3.05) 3.5 / 3.5 Shutdown Bank Withdrawal	M,A,L,S	1
d.			
e.			
f.			
g.			
h.			
In-Plant Systems [®] (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i.	061 Auxiliary / Emergency Feedwater System (A2.04) 3.4 / 3.8 Operate the TD AFW Pump Locally (JPM 74-2AP)	D,A,E,R	4S
j.	004 Chemical and Volume Control System (A2.25) 3.8 / 4.3 Uncontrolled Dilution Flow Path Isolation (0-SI-OPS 063-214.0) (JPM 40-2) <i>Changed for proper concept of Safety Function. Discussed w/ Licenses. MFB 01/23/2008.</i>	D,R	1
k.	062 AC Electrical Distribution (A2.10) 3.0 / 3.3 Transfer 480v SD Board 2A1-A from Normal to Alternate (SPM 061AP2)	D,A	6
@	All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		

* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3 3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4 3
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1 1
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1 2
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1 2
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1 0
(S)imulator	

JPM Summary

- JPM A RHR spray will be established in accordance with FR-Z.1, High Containment Pressure. This is a Bank Alternate Path JPM.
- JPM B An RCP seal failure will be diagnosed and the Abnormal Operating Instruction used to remove the pump from service. This is a new low power/shutdown JPM
- JPM C A failure of the step counter will occur during the withdrawal of Shutdown Rods requiring a reactor trip. This is a new alternate path low power/shutdown JPM.
- JPM I Plant JPM –The trip and throttle valve will not open electrically while TDAFW pump is being placed in service locally. This is an Alternate path Bank JPM using emergency abnormal procedure performed inside the RCA.
- JPM J Dilution flow path will be isolated using 0-SI-OPS 062-214.0. This is a Bank JPM performed inside the RCA using an Appendix contains in a surveillance instruction.

Facility:	Sequoyah 1 & 2	Date of Examination:	1/28/2008	Operating Test Number:	NRC
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).			TS	TW MB
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.			TS	TW MB
c.	The operating test shall not duplicate items from the applicants' audit test(s) (see Section D.1.a).			TS	TW MB
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.			TS	TW MB
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.			TS	TW MB
2. WALK-THROUGH CRITERIA					-
a.	Each JPM includes the following, as applicable: * initial conditions ✓ * initiating cues ✓ * references and tools, including associated procedures ✓ * reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time-critical by the facility licensee ✓ * operationally important specific performance criteria that include: - detailed expected actions with exact criteria and nomenclature ✓ - system response and other examiner cues ✓ - statements describing important observations to be made by the applicant ✓ - criteria for successful completion of the task ✓ - identification of critical steps and their associated performance standards ✓ - restrictions on the sequence of steps, if applicable ✓			TS	TW MB
b.	Ensure that any changes from the previously approved systems and administrative walk-through outlines (Forms ES-301-1 and 2) have not caused the test to deviate from any of the acceptance criteria (e.g., item distribution, bank use, repetition from the last 2 NRC examinations) specified on those forms and Form ES-201-2.			TS	TW MB
3. SIMULATOR CRITERIA					-
The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.				TS	TW MB
		Printed Name / Signature		Date	
a.	Author	<u>Thomas Jones</u>		1/17/08	
b.	Facility Reviewer (*)	<u>Thomas Welton</u>		1/17/08	
c.	NRC Chief Examiner (#)	<u>MARK A. BATES</u>		01/23/2008	
d.	NRC Supervisor	<u>MALCOLM T. WIDMANN</u>		01/24/08	
NOTE: * The facility signature is not applicable for NRC-developed tests.					
# Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.					

Facility: Sequoyah 1 & 2 Date of Exam: 1/28/2008 Scenario Numbers: 1,2,3,4 Operating Test No.: NRC

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.	TS	TL	MB
2.	The scenarios consist mostly of related events.	TS	TL	MB
3.	Each event description consists of <ul style="list-style-type: none"> 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) 	TS	TL	MB
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.	TS	TL	MB
5.	The events are valid with regard to physics and thermodynamics.	TS	TL	MB
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	TS	TL	MB
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.	TS	TL	MB
8.	The simulator modeling is not altered.	TS	TL	MB
9.	The scenarios have been validated. Pursuant to 10 CFR 55.46(d), any open simulator performance deficiencies or deviations from the referenced plant have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	TS	TL	MB
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.5 of ES-301.	TS	TL	MB
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	TS	TL	MB
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).	TS	TL	MB
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	TS	TL	MB

Target Quantitative Attributes (Per Scenario; See Section D.5.d)		Actual Attributes				-	-	-
		1	2	3	4			
1.	Total malfunctions (5-8)	8 [✓]	6 [✓]	7 [✓]	6 [✓]	TS	TL	MB
2.	Malfunctions after EOP entry (1-2)	2 [✓]	1 [✓]	2 [✓]	2 [✓]	TS	TL	MB
3.	Abnormal events (2-4)	3 [✓]	3 [✓]	4 [✓]	3 [✓]	TS	TL	MB
4.	Major transients (1-2)	1 [✓]	1 [✓]	1 [✓]	1 [✓]	TS	TL	MB
5.	EOPs entered/requiring substantive actions (1-2)	1 [✓]	1 [✓]	1 [✓]	1 [✓]	TS	TL	MB
6.	EOP contingencies requiring substantive actions (0-2)	1 [✓]	0 [✓]	1 [✓]	1 [✓]	TS	TL	MB
7.	Critical tasks (2-3)	2 [✓]	3 [✓]	2 [✓]	2 [✓]	TS	TL	MB

Facility:		Sequoyah 1 & 2		Date of Exam:		1/28/2008		Operating Test No.:		NRC							
A P P L I C A N T	E V E N T T Y P E	Scenarios															
		1			2			3 Spare			4			T O T A L	M I N I M U M (*)		
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P		R	I	U
SROU	RX	0✓									1		1	1	1	0	
	NOR	1✓					1				0		1	1	1	1	
	I/C	5✓					2				3		8	4	4	2	
	MAJ	1✓					1				0		1	2	2	1	
	TS	3✓					0				0		3	0	2	2	
SROI-1	RX		1✓		0✓								1	1	1	0	
	NOR		0✓		1✓								1	1	1	1	
	I/C		3✓		5✓								8	4	4	2	
	MAJ		1✓		1✓								2	2	2	1	
	TS		0		3✓								3	0	2	2	
SROI-2	RX			0		1✓				0			1	1	1	0	
	NOR			1		0✓				1			1	1	1	1	
	I/C			4		4✓				7			11	4	4	2	
	MAJ			1		1✓				2			3	2	2	1	
	TS			3		0✓				2			2	0	2	2	
NA									0	1	0		1	1	1	0	
									1	0	1		2	1	1	1	
									7	5	3		15	4	4	2	
									1	1	1		3	2	2	1	
									2	0	0		2	0	2	2	
													1	1	0		
													1	1	1		
													4	4	2		
													2	2	1		
													0	2	2		

Facility:		Sequoyah 1 & 2									Date of Exam:			4/9/2007			Operating Test No.:			NRC		
A P P L I C A N T	E V E N T T Y P E	Scenarios																				
		1			2			3 Spare			4			T O T A L	M I N I M U M (*)							
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION				R	I	U					
		S R O	A T C	B O P																		
																1	1	0				
																1	1	1				
																4	4	2				
																2	2	1				
																0	2	2				
																1	1	0				
																1	1	1				
																4	4	2				
																2	2	1				
																0	2	2				

Instructions:

- Circle the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must service in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position.
- Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- 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 requirements specified for the applicant's license level in the right-hand columns.

This matrix assumes that Scenario 3 is used as the spare. If scenario 3 is used in combination with any other scenario, the minimum requirements are still met for each applicant.

Facility: Sequoyah 1 & 2					Date of Exam: 1/28/2008				Operating Test No.: NRC			
Competencies	SRO				RO (ATC)				BOP/CRO			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Interpret/Diagnose Events and Conditions	2-9	1-7,9	2-9	2-9	2,3,6,9	3,4,5,6,7,9	3,4,5,6,8,9	2,5,6,7,8	4-8	1,2,3,4,7,8	2,5,6,7	3,4,5,9
Comply With and Use Procedures (1)	ALL	ALL	ALL	ALL	1,2,3,6,8,9	3,5,6,9	1,3,4,5,6,8,9	1,2,5,6,7,8	1,4,5,6,8	1,2,3,5,7	1,2,6,7	1,3,4,5,6,7,9
Operate Control Boards (2)	N/A	N/A	N/A	N/A	1,2,3,6,8,9	3,5,6,9	1,3,4,5,6,8,9	1,2,5,6,7,8	1,4,5,6,8,7	2,3,5,7	1,2,6,7	1,3,4,5,6,7,9
Communicate and Interact	ALL	ALL	ALL	ALL	1,2,3,6,8,9	3,4,5,6,7,9	1,3,4,5,6,8,9	1,2,5,6,7,8	1,4,5,6,8,7	1,2,3,4,7,8	1,2,5,6,7	1,3,4,5,6,7,9
Demonstrate Supervisory Ability (3)	ALL	ALL	ALL	ALL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Comply With and Use Tech. Specs. (3)	2-4	1,2,4	3,4	2,3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes:												
(1) Includes Technical Specification compliance for an RO.												
(2) Optional for an SRO-U.												
(3) Only applicable to SROs.												

Instructions:

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

Facility: <u>Sequoia 1+2</u>		Date of Exam: <u>1/2008</u>		Exam Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>		
Item Description	Initial			a	b*	c#
	a	b*	c#			
1. Questions and answers are technically accurate and applicable to the facility.	TS	TW	MB			
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	TS	TW	MB			
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401	TS	TW	MB			
4. The sampling process was random and systematic (If more than 4 RO or 2 SRO questions were repeated from the last 2 NRC licensing exams, consult the NRR OL program office).	TS	TW	MB			
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 type="checkbox"/> the examinations were developed independently; or <input checked="" type="checkbox"/> the licensee certifies that there is no duplication; or <input type="checkbox"/> other (explain)	TS	TW	MB			
6. Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.	Bank	Modified	New	TS	TW	MB
	2512	2318	27115			
7. Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory	CIA		TS	TW	MB
	35'7	40'18				
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	TS	TW	MB			
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.	TS	TW	MB			
10. Question psychometric quality and format meet the guidelines in ES Appendix B.	TS	TW	MB			
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with the value on the cover sheet.	TS	TW	MB			
a. Author	Printed Name / Signature			Date		
b. Facility Reviewer (*)	<u>Thomas Jones</u>			<u>1/17/08</u>		
c. NRC Chief Examiner (#)	<u>Thomas Wallace</u>			<u>1/17/08</u>		
d. NRC Regional Supervisor	<u>MARK A. BATES</u>			<u>02/05/2008</u>		
	<u>WILCOULT VIDMANN</u>			<u>02/05/08</u>		
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.						

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
GENERAL COMMENTS															
B= Bank / M=Modified / N=New / F=Fundamental Level (I.E. Memory) / H=Higher Cognitive Level (I.E. C/A)															
For All BANK questions: swap the order of the answer choices so that applicants cannot rely on recall of the correct answer location.															
RO EXAM															
1	007EA1.08	N	H	2											ES Can the first two bullets be replaced with the following single bullet: "Unit 1 was at 10% power when both MFPTs tripped." First bullet revised. Second bullet not changed. The teaching in the second bullet does not affect the answers to this question or any other questions. OK MAB 02/04/2008 Can the third bullet read as follows: "Steam generator levels dropped to a minimum of ##% and then began to rise." – (use a level that is a couple of percent above the AFW start signal) Incorporated. OK MAB 02/04/2008 Is there an extra space in the correct answer between "controlled" and "manually"? Fixed OK MAB 02/04/2008 Is there an extra space in "A" and "B" between "required" and "to"? Fixed OK MAB 02/04/2008
2	008AA2.29	N	H	2											ES Be consistent with periods in answer choices. Fixed. OK MAB 02/04/2008 Does the cause of the lowering RCS pressure affect which answer is correct? Is it important to state that pwr pressure is inadvertently lowered with pwr sprays or that the safety leakage rises, etc? If the pressure drop results from a problem elsewhere, then the level behavior may change. Discuss with licensee. Licensee agreed. Comment incorporated. OK MAB 02/04/2008
3	009EA2.24	N	H	2											ES There is no point in stating the reason why the RCPs are required to be tripped. Consider the following suggestion for the answer choices: A. ALL RCPs are required to be tripped.

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														B. ONLY RCP #1 and #3 are required to be tripped. C. ONLY RCP #1 is required to be tripped. D. ONLY RCP #3 is required to be tripped. Incorporated. OK MAB 02/04/2008
4	011EK3.13	B	F	2										E S Change answer choices to: A. Realigns the ECCS suction path from the RWST to the containment sump. B. No change needed C. No change needed D. Realigns the ECCS flow to prevent boron precipitation. Incorporated for "D". Licensee and CE agreed on change for "A". OK MAB 02/04/2008
5	015/017 AK2.08	B	H	2										S Suggest making slight modification to "C" and "D": C. The RCP stator windings will overheat. D. The RCP motor bearings will overheat. Incorporated. OK MAB 02/04/2008
6	022AA2.03	B	H	2				X?						E S Have licensee explain the mechanism for "A" to occur. I need to better understand the failure mechanism that can cause the charging to go to 120 gpm and then return to normal with pressurizer level also returning to normal. Licensee modified "A" based on comment. OK MAB 02/04/2008
7	025AK2.05	M	H	2					X?					U ? S "B" and "D" plausibility: Why would it be plausible for an applicant to believe that spray pumps would be drawing suction from the sump when there is 68% remaining in the RWST? Also, why would an applicant believe that suction for the spray pumps would be from the sump when they are in ECA-1.1. If adequate level existed in the sump and spray pumps are operating why would they be in ECA-1.1? Parameters in the stem changed to address these concerns. The changes to the parameters also caused the correct answer to change. OK MAB 02/04/2008 This question contains overlap flaws with questions on the SRO exam. This question provides information that indicates that E-0 is entered upon a reactor trip. I think this comment could alleviate itself if the issues on the SRO exam are resolved. Concern addressed on SRO exam. OK MAB 02/04/2008 Add a period after the sentence at 08:01. Fixed. MAB 02/04/2008 Does the information in the stem preclude an applicant from assuming that containment pressure could have been greater than 12 psid and has now decreased to 9.7 psid? If this is an assumption that the applicants are

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
															forced to make, would it change the correct answer. Is there a possible argument that there are two correct answers to this question based on forcing the applicant to make assumptions? Question statement has been enhanced to preclude an assumption that could make two answers correct. There is enough info in the stem to preclude applicants having a need to make any assumptions on containment pressure. OK MAB 02/04/2008
8	026AK3.03	B	F	2				x							E S "B" and "C" are really the same distractor. They both state to reduce heat load, or minimize heat load. "C" implies that RCPs must not be needed if they are not cooled to maintain CCS within design capability. One of these two distractors should be modified/replaced. "B" has been changed to address concern. OK MAB 02/04/2008
9	027AA1.02	B	H	2											E S "start" should be plural in the answer choices. Fixed. OK MAB 02/04/2008 Delete the piece of each answer choice that states that heaters ENERGIZE or DEENERGIZE. This is not needed to make answer choices unique. I.E. A. Pressurizer Pressure HI alarm annunciates. Actual pressurizer pressure starts to rise. Etc. for the rest of the answer choices. Incorporated. OK MAB 02/04/2008
10	038G2.1.3	N	F	2											E S Technical accuracy of "A" and "B": Is there a requirement to cool the plant prior to turnover? The supporting documentation does not support this. The supporting documentation supports that the cooldown is not permitted to be performed by an operator who is simultaneously conducting turnover. This is different than requiring that the cooldown take place prior to turnover. The more precise way to phrase this would be to state the converse of what is stated in "C" and "D". I.E. An operator is not permitted to simultaneously turnover and perform the cooldown. Incorporated. OK MAB 02/04/2008 First part of "C" and "D" also needs wording enhancements because OPDP-1 would not provide direction to cooldown while concurrently performing turnover. OPDP-1 provides Administrative guidance, not guidance that is specific to the SGTR accident. Consider: An operator is permitted to simultaneously turnover and perform the cooldown. Incorporated. OK MAB 02/04/2008
11	040AK1.03	B	F	2								x			U S K/A Match: The K/A requires testing knowledge of operational implications of RCS shrink and depressurization as they apply to steam line break. This question tests knowledge of brittle failure which stems from an RCS cooldown and subsequent pressurization. New Q written. OK MAB 02/04/2008

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														This question has other issues with distractors, but because of the above comment, there is no need to address these comments at this time. New Q written. OK MAB 02/04/2008
12	055G2.4.29	N	F	1- 2								x		U S Is the 19:30 bullet worded correctly? Q replaced. OK MAB 02/04/2008 Punctuation in answer does not appear to be correct. Q replaced. OK MAB 02/04/2008 K/A not Matched: The K/A requires a SBO. Does this question test knowledge of a SBO, or just knowledge of a security threat? The way I read this question is that you could delete all the information in the stem and simply state that there is a credible insider security threat and it is necessary to dispatch an operator to the EDG room. In other words, the LOOP appears to be irrelevant. Q replaced. OK MAB 02/04/2008
13	056AK1.03	B	H	1- 2					x					E S Be consistent with periods after bullets. Fixed. OK MAB 02/04/2008 Replace "D" with the logical error that would result from subtracting 15 psi from 2085. Incorporated. OK MAB 02/04/2008 Consider combining the subtraction of 15 psi and the use of Thot to replace "C". Incorporated. OK MAB 02/04/2008 Technically this question could be rated as U, but the fix is simple enough that it is being rated as E. The above comment incorporation will help to make the LOD more acceptable. As written, two distracters are not plausible. It is not reasonable for a licensed operator to use Tcold or Tave in a subcooling calculation. Noted. Issues addressed. OK MAB 02/04/2008
14	058AK1.01	B	H	2										E S After 4 hours would the batteries be discharged? Or is there a requirement that only states that the batteries will not be discharged prior to 4 hours? We need to ensure that the answer choices accurately represent the status of the batteries. Concerns addressed by changing the wording. OK MAB 02/04/2008
15	062AA1.01	M	F	2										S Q is SAT.
16	W/E04 G2.4.28	B	F	1- 2				x	X?					E ? Be consistent with periods in the answer choices. Fixed OK MAB 02/04/2008

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	I Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>S Distractor "A" is not plausible. ECCS flow is an indirect parameter, which will follow RCS pressure, which is answer choice "D". It does not have the procedure guidance to monitor the indirect parameter (ECCS flow) when the direct parameter is available (RCS P). Concern addressed. OK MAB 02/04/2008</p> <p>I also have some issues with "B" because subcooling is calculated from RCS pressure. It makes no sense to monitor the calculated parameter when the direct parameter is available. Concern addressed. OK MAB 02/04/2008</p> <p>The only thing that makes "A" and "B" incorrect is that the procedure does not state these parameters, but they would work as a method for determining if the leak was isolated. Noted. MAB 02/04/2008</p> <p>The K/A does not restrict this question to be written to test leak isolation. Noted. MAB 02/04/2008</p>
17	W/E05 EK3.1	B	F	2				X?						<p>E S How is "A" different from "D"? Are these unique answer choices? It should be possible to modify the wording of these two distractors to ensure that they are unique. I.E., "A" could be pertaining to high temperatures and "D" could speak to cold water on dry tubes as is suggested in the distractor analysis. Wording in "D" enhanced to ensure uniqueness of answer choice. OK MAB 02/04/2008</p>
18	W/E11 EK2.2 REF	M	H	1					x					<p>U S Question does not discriminate at the licensed operator level. This is a question that, when provided the reference, almost anyone could arrive at the correct answer. Following suggestion incorporated. OK MAB 02/04/2008</p> <p>Suggestion to improve question: Use most of the same items in the stem. Some can be deleted if they become unnecessary. Q: Which one of the following correctly describes the flow rate that meets the intent of ECA-1.1, Step 20 RNO? A. Establish 325 gpm ECCS flow. ECCS pumps may be started and stopped as necessary to accomplish the desired flow rate. B. Establish 325 gpm ECCS flow. ECCS pumps are not permitted to be started and stopped as necessary to accomplish the desired flow rate. C. Establish 400 gpm ECCS flow. ECCS pumps may be started and stopped as necessary to accomplish the desired flow rate. D. Establish 400 gpm ECCS flow. ECCS pumps are not permitted to be started and stopped as necessary to accomplish the desired flow rate. This suggestion raises the plausibility of the distractors and still tests</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														whether the applicants understand the intent of the procedure step. Suggestion incorporated. OK MAB 02/04/2008
19	001AK2.05	M	H	1- 2										E S Be consistent with periods behind bulleted phrases. Fixed. OK MAB 02/04/2008 Would the question be enhanced if one of the Thot or Tcold instruments were to fail instead of the Tavg auctioneering unit? Discuss with licensee. Decided not to make a change on temp inst. OK MAB 02/04/2008
20	033G2.4.21	M	F	2										S Q is SAT
21	036AK1.01	N	F	2										S Maintain past tense in third bullet. Somewhat incorporated, but it does not affect technical accuracy of question. OK MAB 02/04/2008 Question is written in the "NOT" format, which is discouraged by NUREG-1021. This question can remain in its current form as long as the licensee agrees that the question being in this format will not affect applicant performance. In other words, their applicants have seen questions in this format and would not get the incorrect answer for any other reason than a knowledge weakness. Noted. OK MAB 02/04/2008
22	060AA1.02	M	F	2					X?			x		U S K/A Match: Have the licensee provide an explanation of how the K/A is matched. The K/A requires testing knowledge of how to operate or monitor ventilation systems during an accidental gaseous radwaste release. How is a ventilation system being monitored? Rad Mntr is part of the ventilation system. K/A match is OK. MAB 02/04/2008 When would the Waste Gas Rad Monitor not detect a leak from a Waste Gas Decay Tank? Changed stem to a flange leak which would not cause the Waste Gas Rad Mntr to alarm. OK MAB 02/04/2008
23	069G2.4.45	N	H	2										E S Technical accuracy of the question is a concern because they do not have to restore integrity within 1 hour. If they do not restore integrity within 1 hour, then they are required to shutdown. The answer choices need to be more precise in order to be technically correct. Wording enhancements made to specifically ask for what the Action Statement states. OK MAB 02/04/2008
24	074EK3.07	B	F	1					x					U S LOD=1: Distractors are not plausible. Due to the non-credible distractors, this question does not discriminate at the appropriate level to make a licensing decision. Changed distractors. OK MAB 02/04/2008 Reflux boiling is a cooling method used when RCPs are off. How would it be reasonable for an operator to think that starting an RCP

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														would keep pressure from rising? Changed distractor. OK MAB 02/04/2008
25	076AK2.01	B	H	1					x					<p>U S</p> <p>A pinhole leak of a fuel assembly would be evident in RCS samples that are analyzed for various isotopes; however, small leaks will not necessarily result in rising radiation monitor trends. There are concerns with "B" being an alternate correct answer because the size of the leak is not defined. Also, the RCS leakage locations are not defined, so there are also concerns about whether a small RCS leak would result in a rising rad monitor reading. "Significant increase in RCS activity" added to stem. OK MAB 02/04/2008</p> <p>LOD=1: Distractors are not plausible. Due to the non-credible distractors, this question does not discriminate at the appropriate level to make a licensing decision. Question is on the cusp of being unacceptable due to low LOD. Noted. MAB 02/04/2008</p> <p>Consider writing a question that has a plant trip and a SGTL. This will allow testing MSL monitors as well as Condenser Off Gas Monitors. This idea may help to raise the question to a level where it could be used to discriminate between a competent and less than competent licensed operator. Not incorporated. Allowed by CE. The rest of the exam is at an acceptable level to not warrant a change to this question. OK MAB 02/04/2008</p>
26	W/E09 EA2.1	B	H	2										<p>E S</p> <p>The "repressurization" piece of "A" and "B" should be deleted. It does not add information that is needed to make these answer choices unique. Discuss with licensee. Deleted. OK MAB 02/04/2008</p> <p>Consider rewording the question as follows: Which one of the following correctly states the procedure that maximizes the allowable cooldown rate for the provided circumstances and the maximum cooldown rate allowed by that procedure? A. Use ES-0.2, Natural Circulation Cooldown. The cooldown limit is 50F/hr. B. Use ES-0.2, Natural Circulation Cooldown. The cooldown limit is 100F/hr. C. ✓ Use ES-0.3, Natural Circulation Cooldown with Steam Voids in Vessel (with RVLSD). The cooldown limit is 50F/hr. D. Use ES-0.3, Natural Circulation Cooldown with Steam Voids in Vessel (with RVLSD). The cooldown limit is 50F/hr Incorporated. OK MAB 02/04/2008</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
27	W/E14 EA2.2	B	F	2										S	Q is SAT.
28	003K3.04	B	H	2										S	Q is SAT.
29	003G2.3.10	N	F	2										S	Q is SAT.
30	004K5.26	N	H	2										S	Q is SAT.
31	004A3.08	B	H	1- 2				x						E S	“D”: it is not credible for an applicant to make this error. There is no division needed in this calculation. Consider making “D” 60%. Discuss with licensee Incorporated. OK MAB 02/04/2008
32	005A4.03	B	H	1- 2				x						U S	“RCS cooldown rate is too high” – what does this mean? It may not matter, but it would be better to provide the applicant with information that they would normally have available to them, such as an actual temperature at two different times. It may also be necessary to state that SRO gave them direction to cooldown at a certain value. The question piece would need to change slightly to ask for the actions needed to comply with the SRO’s directions. (These changes will make “C” plausible) Q replaced. OK MAB 02/04/2008 Question should be tied to the procedure. I.E. Which one of the following CONSTANT RHR flow, in accordance with 0-SO-74-1, “procedure title”? Q replaced. OK MAB 02/04/2008 “A” and “B” do not contain credible misconceptions to discriminate between competent and less than competent licensed operators. Q replaced. OK MAB 02/04/2008
33	006K1.02	M	F	2										E S	Is there an extra space between “SSPS” and “if” in the stem? Fixed. OK MAB 02/04/2008 Have licensee walk me through the technical aspects of the question. I may be OK with the question with a couple of minutes of discussion. Q is SAT. MAB 02/04/2008
34	007K3.01	B	H	2				x						E S	Is there an extra space in “D” between “.4,” and “failed”? Fixed. MAB 02/04/2008 “C” not plausible because there is no relationship with the PRT. The following change would correct the distractor plausibility issue: A. #2 seal on RCP #4 failed; Pressurizer Safety Valve, 1-68-568, failed open; Reactor Head Vent Valve, 1-FCV-68-394, Failed

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					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>Open</p> <p>B. #2 seal on RCP #4 failed; Pressurizer Safety Valve, 1-68-568, failed open; Reactor Head Vent Valve (1-FCV-68-394, Failing Open, could not cause the stated conditions)</p> <p>C. Pressurizer Safety Valve, 1-68-568, failed open; Reactor Head Vent Valve, 1-FCV-68-394, Failed Open (#2 seal on RCP #4 failing could not cause these conditions)</p> <p>D. Pressurizer Safety Valve, 1-68-568, failed open (Pressurizer Safety Valve, 1-68-568, failing open could not cause the stated plant conditions AND Reactor Head Vent Valve, 1-FCV-68-394, Failing Open could not cause the stated plant conditions.)</p> <p>Discuss the above change with the licensee. If we can get this change to work, then the question may be SAT. Worked with licensee to develop plausible distractors. OK MAB 02/04/2008</p>
35	007G2.1.1	N	F	2				x						<p>E S</p> <p>Is fourth bullet worded correctly? Fixed. MAB 02/04/2008</p> <p>“A” and “B” are not mutually exclusive, which harms their plausibility. In other words, if “B” were true, it will still make sense to do “A”. The problem is that if the applicant determines that the alarm is valid, adjusting level will always be correct. “A” and “B” corrected. MAB 02/04/2008</p> <p>Is there an extra space in “C” and “D” between “level” and “alarm”? They neglected to correct this; however, the extra space appears in the correct answer as well as a distractor, so it will not adversely affect plausibility. OK MAB 02/04/2008</p> <p>The question should be specific to the answer choices provided: Which one of the following correctly states the validity of the PRT level alarm and the required actions as a result of the alarm? Incorporated. OK MAB 02/04/2008</p> <p>I would prefer to have “A” and “B” read as follows: A. The PRT level alarm is valid. (need a better second half of distractor) B. The PRT level alarm is valid. 0-SI-OPS-068-137.0, RCS Water Inventory, is required to be performed. A version of this comment was incorporated. AOP-R.05 was used. OK MAB 02/04/2008</p> <p>I would prefer the second half of “C” and “D” to read such that it specifically states the information being tested. I.E.: C. The PRT level alarm is false. According to OPDP-4, the maximum time that Maintenance has to correct the condition causing the invalid alarm is 7 days, at which time the alarm is required to be cleared/disabled.</p>

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					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														D. The PRT level alarm is false. According to OPDP-4, the maximum time that Maintenance has to correct the condition causing the invalid alarm is 72 hours, at which time the alarm is required to be cleared/disabled. Incorporated. OK MAB 02/04/2008
36	008K4.07	N	F	2				x						E S Is there an extra space between "CCS" and "Pump" in the stem? (I am beginning to think that it just may be the way it prints out and that there may not be an extra space – but it is free to ask.) Fixed. MAB 02/04/2008 Would it be possible to test the RED light on the throwover switch for the first part of every answer choice. I think this would be a better test of the actual plant indications. I.E. Either the red light is ON or OFF. Discuss with licensee. I think this could help the plausibility of "B". Did not incorporate after discussions with licensee. MAB 02/04/2008
37	010K6.03	M	H	2										S Be consistent with periods after bullets. Fixed. MAB 02/04/2008 Simplify the answer choices as follows: A. Master controller output would increase. PZR pressure would be maintained above the reactor trip setpoint. B. Master controller output would increase. PZR pressure would decrease to the reactor trip setpoint. C. Master controller output would decrease. PZR pressure would be maintained above the reactor trip setpoint. D. Master controller output would decrease. PZR pressure would be maintained above the reactor trip setpoint Incorporated. MAB 02/04/2008
38	012K4.04	N	H	2				X?						? S "A" and "D" are not plausible because the last bullet in the stem leads the applicant to only consider answer choices where RTA "A" is different than RTA "B" UV and Shunt coils. Simply using psychometrics, and applicant can eliminate these two answer choices. Discuss with licensee. Answer choices simplified. Issue resolved. OK MAB 02/04/2008
39	013K2.01	B	H	2										S Potential overlap issues with 006K1.02 should be discussed. If it is determined that there is no overlap, then question may be SAT. Overlap issue resolved. OK MAB 02/04/2008
40	022A2.04	N	H	2				X?						? S Is the wording correct in the second paragraph, "Compare the effects on of the .."? Fixed. OK MAB 02/04/2008 Have the licensee explain the plausibility of additional cooling units being placed in service. Are there additional cooling units that would be available at any time in order to reduce temp? If there are additional

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					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														cooling units that could be used, under what conditions would they typically be used? Additional cooling units are available one of the units. Unit differences make the distractors plausible. OK MAB 02/04/2008
41	025K5.02	M	F	2										ES Is the incorrectness of this answer choice based entirely on the word "each"? This needs to be discussed to ensure only one correct answer. Distractors reworked to ensure only one correct answer. OK MAB 02/04/2008
42	026K4.07	M	F	2										ES The licensee needs to explain why the 11% level requirement is because of the 1-FCV-74-3 interlock. I am not sure that the attached reference material supports this. Maybe the supporting documentation is in another print or lesson plan. Also as part of this discussion, the wording of the question should be reviewed to ensure that it is accurate and will elicit the answer. Licensee explained the level requirement. OK MAB 02/04/2008
43	026G2.4.48	M	H	2					x					US Are there extra spaces in "A" and "B"? Fixed. MAB 02/04/2008 S Will the terminology "loading room" confuse any of the applicants? Should this be defined with more precise terminology? "loading room" deleted. OK MAB 02/04/2008 Is the wording of "A" and "B" precise enough? The pump did not (failed to) auto start – this is a fact. I would prefer more precise terminology such as: "Pump did not auto start even with an auto start signal present." Alternative similar wording would work as well. Incorporated. OK MAB 02/04/2008 Should the answer choices contain commas or periods between the two answer parts. It looks like two complete sentences are separated by commas. Two sentences used. OK MAB 02/04/2008 Second set of bullets should be introduced with a colon, vice semi-colon. Fixed. MAB 02/04/2008 Time in the stem is only provided to the minute, yet 14:05:00 is almost a full 4 minutes from 14:07:59. The clock in the control room may read the same, but this is greater than 180 seconds. Discuss whether this question needs to be more precise to elicit the correct answer. More precise times are not needed – I made an error with my math when this comment was made. OK MAB 02/04/2008 "A" and "B" are not mutually exclusive because it may never be wrong to

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>verify that there is room on the EDG prior to manually placing a load on the EDG. If "A" is correct, the "B" will also be correct. Wording revised to ensure unique answer choices. OK MAB 02/04/2008</p> <p>When did the containment pressure reach 2.81 psig? Discuss whether this is important information to contain in the stem. Q stem is precise enough. OK MAB 02/04/2008</p> <p>"A" and "B" plausibility: If the pump was supposed to auto start, then I know, just using common sense, that the EDG is designed to have room to start the pump (assuming that the sequencer has timed out). If the sequencer has not timed out, then it would not be smart to start the pump anyway. "A" wording revised. "B" determined to be OK with the change to "A". OK MAB 02/04/2008</p>
44	039A1.09	N	H	2								x		<p>⊕</p> <p>K/A Match: The K/A requires testing knowledge of monitoring main steam line radiation monitor parameters associated with operating the MRSS controls to prevent exceeding design limits. How does this question test the knowledge required by the K/A? How is knowledge of the radiation monitor indications being tested in relation to how those indications are used to avoid exceeding design limits? Q replaced. OK MAB 02/04/2008</p> <p>The question asks for <u>the</u> condition that is causing the alarm. Is there a possibility that another condition, such as an actual high rad condition could cause the alarm? High rad may not cause the other conditions, but could it cause the alarm? The wording of the question may need some minor revision to ensure that the correct answer is elicited. Q replaced. OK MAB 02/04/2008</p> <p>Are the second parts of the answer choices worded correctly? The subject of the sentence appears to be implied. It would be better to state the noun. Q replaced. OK MAB 02/04/2008</p> <p>No reference is being suggested. Are the time requirements a closed book knowledge item at SQ? Q replaced. OK MAB 02/04/2008</p>
45	059A2.07	N	H	2				x	?					<p>E</p> <p>S</p> <p>What conditions would automatically close the 2B MFPT Cond FCVs? Valve operation depends on power being above or below 60%. OK MAB 02/04/2008</p> <p>"A" Plausibility: What is the logic behind the FCVs being re-opened in the AOP? This distractor may not be plausible. It may not be credible for an operator to think that they would re-open valves that automatically closed. Discussed with licensee. OK MAB 02/04/2008</p>

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					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
															The stem and answer choice talks about some AOP that has been entered. Is there a reason that the AOP that the operators are performing is not mentioned in the stem or the answer choices? Discuss the possibility of adding the AOP to tighten the question and tie the answers to a specific AOP. AOP-S.01 added to the stem. OK MAB 02/04/2008
46	059A4.01	M	H	2										S	Second to last bullet: I assume the SG level is below setpoint, but this needs to be specific. Fixed. MAB 02/04/2008 Last Bullet: is it necessary to state that the dumps are armed? No – “armed” deleted. OK MAB 02/04/2008
47	061K5.01	B	H	2										S	Typos in 5 th bullet. Fixed. MAB 02/04/2008 Trends are provided for all parameters except for SG levels. Added. MAB 02/04/2008
48	062K1.02	B	F	2										E S	Too many items are being iterated on in the answer choices. This provides the applicants with multiple ways to eliminate distractors. Discuss with licensee. Discussed. OK MAB 02/04/2008 Consider the following: A. After 1.25 seconds, all EDGs will auto start . B. After 1.25 seconds, only the 1B-B EDG will start. C. After 300 seconds all EDGs will autostart. D. After 300 seconds only the 1B-B EDG will start. Incorporated. OK MAB 02/04/2008
49	063K2.01	N	H	2					?					?	Distractor analysis states that an applicant may think that control power for the breaker is supplied from the EDG battery. Why would an applicant think this. Do the EDG batteries supply control power to other buses or to this bus under different plant conditions? I need to understand the credible misconception a little better. Answer choices revised to correct issue. OK MAB 02/04/2008
50	064K6.08	B	F	2		x			x					U S	“B” is not plausible: The entire reason for having a standby pump is to have it backup the lead pump. The second pump is not referred to in the distractor as the standby pump, but it is strongly implied by the stem stating that there is a lead pump. A manual alignment does not appear to make sense. Distractors revised. OK MAB 02/04/2008 “C” is not plausible because the stem provides a cue that these pumps start on tank level. “C” allowed this distractor to stay on exam after discussions with licensee. OK MAB 02/04/2008

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>“A” is the obvious answer because the stem states that these pumps start on low tank level. It would also be common sense to assume that the standby pump would not start at the same time or level as the lead pump, which is why it is a standby pump. After discussion with licensee, decided to allow this distractor. OK MAB 02/04/2008</p> <p>If possible, place the conditions of the plant in the stem, rather than making the answer choices conditional. A specific tank level and switch position for the backup pump should be placed in the stem. It is not prohibited to place conditions in answer choices, therefore Q was not changed. OK MAB 02/04/2008</p> <p>Consider the following: Initial plant conditions:</p> <ul style="list-style-type: none"> - 2A-A EDG running - Fuel oil day tank level = ##% - Lead fuel oil transfer pump is running - The backup fuel oil transfer pump control switch is in AUTO <p>Current plant conditions:</p> <ul style="list-style-type: none"> - Lead fuel oil transfer pump shaft completely shears <p>Which one of the following correctly describes the operation of the backup fuel oil transfer pump?</p> <ul style="list-style-type: none"> A. The backup pump will be running due to a start signal on low discharge pressure. B. The backup pump will be running due to a start signal on low tank level. C. The backup pump will not be running and will not start at anytime as tank level lowers. D. The backup pump will not be running, but will start as tank level lowers with no discharge pressure on the lead pump. <p>Allowed Q to remain with only minor revision. OK MAB 02/04/2008</p>
51	073A1.01	N	H F	2			x							<p>Is second bullet worded correctly? Fixed. MAB 02/04/2008</p> <p>Be consistent with periods behind bullets. Licensee did not incorporate this comment, but does not affect the technical accuracy of the question. OK MAB 02/04/2008</p> <p>This question is really written at the (F)undamental knowledge level. It appears like there may be information in the stem that does not add value to the question. The question really does not ask anything more than: What automatic actions occur as a result of 2-RM-90-123A alarming on high radiation? Licensee did not incorporate comment. They are in the middle of the band for C/A and F questions, therefore designating this question in either category will not cause an exam metric to be encroached</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>upon. I would have required this to be fixed if it affected the adherence to the higher cog criteria. OK MAB 02/04/2008</p> <p>“B” is not plausible: What information in the stem would lend credibility to this distractor. It is very basic that there is an auto isolation of the surge tank. It is not enough to simply test whether an auto isolation exists. I agree with the plausibility that you have built into the other two distractors. Is there any way to improve this distractor by requiring the applicants to know a little more than whether or not an auto isolation exists? “B” replaced. MAB 02/04/2008</p> <p>Does “C” contain grammatical errors in both sentences? Fixed. MAB 02/04/2008</p> <p>“D”: when possible, always word questions and answers for what is <u>required</u> to be done, not what an operator will or may do. This is because operators may do anything, but we want to test what they are required to do. Revised. OK MAB 02/04/2008</p>
52	076A2.02	N	H	2										<p>U S</p> <p>Typo in second bullet. Fixed. MAB 02/04/2008</p> <p>Is there enough information in the stem to elicit the correct answer? During the review in Atlanta we will need to pull prints and do a detailed review of the information in the stem, determine if the stem permits applicants, or forces applicants to make assumptions on the location of the leak, on how and where the leak is isolated, and whether there are credible arguments for no correct answers or multiple correct answers. Plausibility of the distractors will also need to be discussed. OK. We pulled prints during IP and question is sat. MAB 02/04/2008</p> <p>This question will be rated as unsat, pending the detailed review that will take place with the licensee. Q OK MAB 02/04/2008</p>
53	076A4.02	M	F	2										<p>E S</p> <p>Is there an extra space between “following” and “the”? Q simplified. Corrected. MAB 02/04/2008</p> <p>“A”: Would it be more plausible for 1-FCV-67-146 to be “Auto” and 2-FCV-67-146 to be “Manual”? This question is being asked because on the surface it may make sense for the valve on the unit with the SI to auto reposition, rather than the other unit’s valve? This may be due to my unfamiliarity with SQ. Discuss with licensee. Corrected. MAB 02/04/2008</p> <p>Is there any possibility that EA-67-1 allows operators to reposition 0-FCV-</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														67-152, thus bringing into question the possibility that Manual would be the correct response for all three valves? Q revised. Corrected. MAB 02/04/2008 The stem contains a lot of words. Are we simply asking the following: Which one of the following correctly describes the following valve responses to a Unit 1 safety injection? 0-FCV-67-152 1-FCV-67-146 2-FCV-67-146 A. Auto repositions Auto repositions Does NOT auto reposition B. etc. Incorporated. OK MAB 02/04/2008
54	078K3.01	M	F	1-2									S	Question is right at the cusp of being acceptable. When all other changes to the exam have been made, an overall evaluation of the exam will be performed. Q is OK. MAB 02/04/2008
55	103A3.01	M	H	1-2				X					E S	"C" and "D" plausibility: There are no indications in the stem that would lead an applicant to believe that CVI should only have occurred on one train. Are rad monitors train specific for CVI? If so, add values for both the "A" and "B" monitors, with the "B" at a lower value. Specific rad monitor information added. OK MAB 02/04/2008
56	011K6.05	N	H	2				?					E S ?	Be consistent with periods after bullets. Fixed. 02/04/2008 What credible misconception would lead an applicant to believe that 1-LT-68-321 would have an impact on p2r level control when 1-LT-68-320 is selected? Licensee revised answer choices to correct. OK MAB 02/04/2008 Are the cold cal instruments ever used for p2r level control? Cold Cal instruments deleted from answer choices. OK MAB 02/04/2008
57	015K2.01	M	F	1-2				x					U S	"B" and "C" are not plausible: These two choices can be eliminated just by knowing that even channels are powered by the same bus and the odd channels are powered from the same bus (or at least the same division of power). The mixing of even and odd NI numbers make these two distractors not plausible. Distractors revised to correct concern. OK MAB 02/04/2008
58	016K1.10	M	F	2									S	Q is SAT.
59	017K4.03	B	F	1				x					U S	Remaining "in" limits, or "within" limits? Either way – it just depends on how you want your applicants to read the question. Fixed. MAB 02/04/2008 What does "limits" mean in the stem? Is this specific enough to elicit the

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>correct answer? I understand what it means only by reading the question analysis, which the applicants will not have. Wording enhancements made. OK MAB 02/04/2008</p> <p>The question should also be tied to the procedure. Incorporated. MAB 02/04/2008</p> <p>“C” and “D” are not plausible. The magnitude of these two answer choices make them completely non-credible. Distractors revised. OK MAB 02/04/2008</p> <p>Are there any other choices that have meaning at your plant? 600F? 700F? 720F? 750F? Different values were agreed upon with licensee. OK MAB 02/04/2008</p>
60	045K5.17	N	H	1- 2				x					U S	<p>“A” is not plausible. This is not a method which is directed by plant procedures, which does not create a plausible distractor. Q and distractor revised to address concern. OK MAB 02/04/2008</p> <p>“D” is not plausible. Two variables, the two parameters being analyzed, moving is not plausible. Q and distractor revised to address concern. OK MAB 02/04/2008</p> <p>This question is pure GFE. Applicants have already passed a GFE. This is the Site Specific written exam. Steam header pressure incorporated, which makes the question more plant specific. OK MAB 02/04/2008</p> <p>Will the correct answer be correct under all plant conditions that can be assumed with the information provided in the stem? To be safe, does a burnup need to be provided in the stem as well? Answer will always be correct at 50% power. OK MAB 02/04/2008</p> <p>This question can be brought to an acceptable level by making it plant specific. Maybe iterating on “B” and “C” and then adding a second half to the distractors would accomplish plausibility and allow for a plant specific question. Q revised. OK MAB 02/04/2008</p>
61	055A3.03	N	H	2				x					E S	<p>“C”: lacks a period. Fixed. MAB 02/04/2008</p> <p>“B” is not plausible. The reason in “B” is not tied to conditions that are provided in the stem. Compare to “A” – where “A” contains a reason that corresponds to an alarm that is provided in the stem. To raise the plausibility of “B”, the reason needs to be tied to a condition in the stem. Simplified to only tie to high pressure, vice rad inst malfunction. OK MAB 02/04/2008</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
62	068A4.02	M	F	2										S	Q is SAT. The chosen wording does not appear to be the easiest to interpret, but the Q is OK if you want to go with the current wording. If you would like your applicants to see this question worded slightly different, I am OK with that too. OK MAB 02/04/2008
63	071K3.04	M	H	2										S	Q is SAT.
64	075G2.2.11	N	H	2										E S	Grammar issue in first bullet. Q replaced. OK MAB 02/04/2008 The stem of the question is vague with respect to how the design will be changed. It is implied, that the change will cause the valve to automatically close. Is it important to state this. Will it be possible for an applicant to assume a change that would affect the answer choices? Q replaced. OK MAB 02/04/2008 Do you want to ask this question to an RO? Do you have any RO learning objectives associated with temp changes? Is this knowledge part of the RO ILT program? Discuss with licensee. Q replaced. OK MAB 02/04/2008 If licensee can produce documentation that this is OK to ask an RO, then the question is SAT. Q replaced. OK MAB 02/04/2008
65	086A1.01	N	F	3								x		U S	Answer choices need some "the"s added between "trip" and "pump". Q revised. OK MAB 02/04/2008 K/A not matched: The K/A requires testing the ability to monitor/predict changes in parameters as they relate to operating controls to prevent exceeding design limits (fire header pressure). This question only tests knowledge of existence of design features. The question does not test the ability to monitor changes in parameters to prevent from exceeding design limits. Q revised. OK MAB 02/04/2008
66	G2.1.3	N	F	2										S	Question is written as a "NOT" question, which is discouraged by the NUREG. I will allow this format if the licensee does not have an issue with presenting the question to the applicants in this format. Noted. MAB 02/04/2008 Repeated the word "during" in the stem. Fixed. MAB 02/04/2008
67	G2.1.27	B	H	2										S	Third bullet: "start" should be plural. Fixed. MAB 02/04/2008

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														Fourth bullet: "level" should be plural. Fixed. MAB 02/04/2008 Be consistent with tense in all answer choices. Consider: A. Arming conditions for AMSAC were not present. B. AMSAC actuated. C. Arming conditions were present, but actuation conditions were not present. D. AMSAC has not actuated , but will actuate after the appropriate time delay if SG levels stabilize at their current values. Fixed. MAB 02/04/2008
68	G2.1.28	M	F	2				x						"C" and "D" plausibility: ERCW pumps are the same type of pump performing the same function. If an applicant had a misconception that they were both sequenced on the bus, why would it make any difference which pump starts first? Are there other pumps in the plant that both get sequenced on a bus and the order of that sequence is determined by a switch position that is manipulated by the operators? Discuss with licensee. If there is more plausibility here than I realize, then this question may be SAT. Q replaced. OK MAB 02/04/2008 "C" and "D" should have an "in which" added. Q replaced. OK MAB 02/04/2008 The second part of "A" and "C" appears to be a little cryptic. Is this easily understandable? Q replaced. OK MAB 02/04/2008
69	G2.2.26 REF	N	H	2										S Q is SAT.
70	G2.2.33	B	H	2										E S Is there an extra space between "and" and "the"? Corrected. MAB 02/04/2008 "B" is not plausible. With dumps open and rods inserting it is not credible for an applicant to have a misconception that temperature will go up. Consider changing the temperature to something lower than 559 F, but plausible. Answer choices changed to iterate on temps and speed. OK MAB 02/04/2008
71	G2.3.2	N	H	2										S Q is SAT.
72	G2.3.9	B	F	2										S Be consistent with periods behind bullets. Fixed. MAB 02/04/2008 Q is SAT.
73	G2.3.10	B	F	1	x			x	x					U "A" is not plausible. If "A" is correct, then any of the others would be

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>also. The question asks for which would be correct to exit the RCA. If it is correct to simply exit, then doing anything above and beyond that would not be wrong. Q replaced. OK MAB 02/04/2008</p> <p>“B” is not plausible. PCM-1B monitors alarm quite often. Can you imagine how many whole body counts would be needed if this were true? How many times have these applicants had a PCM-1B alarm? Q replaced. OK MAB 02/04/2008</p> <p>This question does not discriminate at the appropriate level. An RO applicant getting this question correct does not provide useful information in making a license decision. Q replaced. OK MAB 02/04/2008</p>
74	G2.4.16	B	H	2									S	<p>Typo in “D”: E-0? vice E-0. Fixed. MAB 02/04/2008</p> <p>Typo “D”: should “exist” be plural? Licensee failed to correct. It does not affect technical accuracy of question. I would make them change it if it appeared only in a distractor. OK MAB 02/04/2008</p> <p>This question looks very familiar. No response needed from licensee – I am just noting this. Noted. MAB 02/04/2008</p>
75	G2.4.22	N	F	2									S	<p>Why is “Larger” capitalized in “A’ and “D””? Corrected. MAB 02/04/2008</p>
SRO EXAM														
76	008G2.4.49	N	H	2									E ?	<p>“C”: Is there an extra space between “and” and “immediately”? Q and K/A changed. OK MAB 02/04/2008</p>
													S	<p>“D”: Is there an extra space between “in” and “E-0”? Q and K/A changed. OK MAB 02/04/2008</p> <p>What pressure causes phase B to actuate? Would it be incorrect for the SRO to direct starting of the EDG? Is this an automatic action that should have occurred? Does SQ have an Admin procedure that states that it is permissible to manually perform an auto action that should have occurred? Q and K/A changed. OK MAB 02/04/2008</p> <p>If this question is determined to require knowledge of procedure selection, i.e. beyond general rules of procedure usage, then it will be acceptable as an SRO question. Discuss SRO-only learning objectives that may be available to support this question as SRO only. Q and K/A changed. OK MAB 02/04/2008</p> <p>It is my knowledge that a general Westinghouse rule of usage is that</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														operators do not exit E-0 until E-0 instructs them to exit. I would view this as RO knowledge unless there is some plant documentation that would state otherwise. Q and K/A changed. OK MAB 02/04/2008
77	029EA2.09	M	H	2								x	U S	Discuss deleting parameters at the time of transition. They do not add plausibility to "turbine not tripped"; therefore, they may not be necessary information. PRT values deleted. OK MAB 02/04/2008 Change feedwater flow to something that is just over the limit. Like 120 gpm to each SG. Heat sink requirements are 440 gpm total. Discuss with licensee. FW flow values revised. OK MAB 02/04/2008 Not SRO-only: ROs are required to know status trees. Therefore, the question can be answered by knowing that H.I is not required to be entered and that the turbine is tripped. Both of these knowledge items are required RO-knowledge. (G2.4.21 has an RO importance rating of 3.7) Q revised. OK MAB 02/04/2008
78	054AA2.05	N	H	2								x	U S	Not SRO-only: Question requires systems knowledge for response of the MFW B/P Reg Valve, which is RO knowledge. Question also requires knowledge of AOP and EOP entry conditions, which is also RO knowledge. Furthermore, the applicant can use systems knowledge to determine that the reactor will not trip and that not SI is present, thereby, allowing the applicant to eliminate going to E-0, "Reactor Trip or Safety Injection." (2.4.1 and 2.4.4 have RO importance ratings of 4.3 and 4.0 respectively) Q revised to make SRO only. OK MAB 02/04/2008 Are the applicants <u>required</u> to go to the AOP? Would an operator be wrong if the AOP was not entered? Q revised. OK MAB 02/04/2008
79	057AA2.17	N	H	2								x	U S	Is punctuation in second bullet correct? Q revised. OK MAB 02/04/2008 Not SRO-only: Both parts of the answer choices can be analyzed using RO required knowledge. Systems knowledge is required by ROs; therefore, this question does not require any knowledge that is specific only to the SRO position. Q revised. OK MAB 02/04/2008
80	065AA2.01	N	H	2									E	Wording on LCO 3.0.3 is too loose. LCO 3.0.3 is always applicable and

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					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>licensees are always required to comply with 3.0.3. Change the wording to: Required Actions of LCO 3.0.3 are required to be performed, OR not required to be performed. This will not change the meaning of what is being asked, but it will be more direct and more technically correct to phrase the second part of each answer choice in this manner. Incorporated. MAB 02/04/2008</p> <p>Delete the air pressure in the stem. The alarm annunciates, which is enough to inform the operator that pressure is below 68 psig. Discuss with licensee. Allowed air pressure to remain. OK MAB 02/04/2008</p> <p>The piece of each answer choice that discusses that fuel movement is required to be suspended does not add value since it is the same in each answer choice. The answer choices should only contain the information needed to make them unique answer choices:</p> <ul style="list-style-type: none"> A. ABGTS Train A remains OPERABLE until Train A Containment Air Isolation Valve automatically closes, at which time LCO 3.0.3 required actions would NOT be required to be taken. B. ABGTS Train A remains OPERABLE until Train A Containment Air Isolation Valve automatically closes, at which time LCO 3.0.3 required actions would be required to be taken. C. Both trains of ABGTS would immediately be INOPERABLE with the current conditions. LCO 3.0.3 required actions would NOT be required to be taken. D. Both trains of ABGTS would immediately be INOPERABLE with the current conditions. LCO 3.0.3 required actions would be required to be taken <p>Incorporated. OK MAB 02/04/2008</p>
81	W/E11 G2.4.48	B	H	1- 2			x	X?						<p>Be consistent with punctuation after bulleted items. Fixed. MAB 02/04/2008</p> <p>Transfer to RHR containment sump is not plausible. The stem clearly states that a LOCA Outside Containment is occurring. This distractor must be replaced. Corrected. OK MAB 02/04/2008</p> <p>Is there a way to provide some indications in the stem that are indicative of a LOCA outside containment without telling them that the operators are in ECA-1.2 due to a LOCA in the Aux Bld. Is there a less obvious way to provide indications of abnormal radiation in the aux building – i.e. and alarm? Containment sump level added. OK MAB 02/04/2008</p> <p>The easiest fix for this question may be to use the two best answer choices and then iterate on operator actions, etc. I.E. Iterate on ECA 1.1 and E-1 AND then operator actions. Incorporated. MAB 02/04/2008</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														Another possible fix may be to test procedure path for two transitions. Operators would go to ECA-1.1, then to Distractors revised. OK MAB 02/04/2008
82	W/E12 G2.1.32	B	H	2				x						<p>Questions testing knowledge of what operators "should" do are too ambiguous to ask. Questions must ask what operators are <u>required</u> to do. This may just be a phrasing issue with the question statement, but questions need to test requirements. Corrected. OK MAB 02/04/2008</p> <p>Distractor "B": Not plausible because there is not a credible misconception that could lead an applicant to stop terminating SI but remain in the same procedure. At least with the procedure transition they need to evaluate if they are to stop the SI termination in order to make the transition. Corrected. MAB 02/04/2008</p> <p>Modify the stem slightly to place the operators at Step 14 where they are monitoring for SI termination criteria and provide them the criteria that are indicative of them proceeding to step 15. Answer choices could be something like:</p> <ul style="list-style-type: none"> A. Terminate SI in ECA-2.1, then transition to E-2 B. Transition to E-2, then terminate SI C. Remain in ECA-2.1. SI termination criteria are not currently met. D. Transition to E-2, SI termination criteria are not currently met. <p>Discuss this option with licensee. Incorporated. OK MAB 02/04/2008</p>
83	003G2.2.22	N	F	1				x		x				<p>Can the stem state that the control rod drops to the middle of the core? Otherwise, a rod dropping to the bottom makes "B" non-plausible because there would not be any <u>axial</u> concerns for a rod that falls to the bottom. Added. OK MAB 02/04/2008</p> <p>"D" is a correct statement and could successfully be argued as correct by an applicant. The accident analysis will remain valid at 75% power. Corrected. MAB 02/04/2008</p> <p>Is there a more specific option to use for "A"? Any reactivity / power redistribution issue is going to be a fuel integrity concern. "A" allowed to remain. OK MAB 02/04/2008</p> <p>A more specific choice for "A" and replacement of "D" could result in a satisfactory question. "D" revised and "A" allowed to remain with the other changes made to the question. OK MAB 02/04/2008</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
84	005AA2.03	N	H	2						x			x	<p>U S</p> <p>Delete "causing a runback from the stem". Applicants should have enough information with the plant at 86% and a MFP trip to understand that a runback will occur. Discuss with licensee to ensure that this is the case. Deleted. OK MAB 02/04/2008</p> <p>Is second bullet worded corrected? Corrected. MAB 02/04/2008</p> <p>Not SRO-only knowledge: ROs are required to know reactor trip criteria. Q revised and allowed for SRO due to location of trip criteria. MAB 02/04/2008</p> <p>Is "D" a subset of "C"? Is tripping the reactor a means of removing the Unit from service within 6 hours? This may be able to be alleviated by changing the wording of the question to ask for the specific requirements as stated in AOP-C.01. Corrected. MAB 02/04/2008</p>
85	051AA2.02	M	H	2									x	<p>U S</p> <p>Is second bullet worded correctly? Corrected. MAB 02/04/2008</p> <p>Delete all unnecessary information in answer choices. In other words, delete the information that is not needed to make the answer choices unique. All of the extraneous procedure entry information is not needed to make the answer choice unique. I.E.:</p> <ul style="list-style-type: none"> A. Manual turbine trip criteria is currently met. B. Manual reactor trip criteria is currently met. C. Manual turbine trip criteria will be met if condenser pressure exceeds 2.7 psia and cannot be restored within 5 minutes. D. Manual turbine trip criteria will be met if condenser pressure exceeds 2.7 psia and cannot be restored within 5 minutes. <p>Extra info deleted from answer choices. MAB 02/04/2008</p> <p>Question should be worded in the plural form. Currently it is worded for singular (or plural), but each answer choice has more than one item. Corrected. MAB 02/04/2008</p> <p>Not SRO-only: Reactor Trip criteria is RO knowledge. The above comments will be irrelevant unless the SRO-only issue is corrected. (G2.1.7 and G2.4.1 have RO IRs of 3.7 and 4.3 respectively) Allowed for SRO exam due to knowledge of being able to stay in AOP to address vacuum problem for 5 minutes. MAB 02/04/2008</p>
86	W/E02 EA2.2	N	H	1					x					<p>U S</p> <p>Should "Safety" be capitalized in second bullet? "Injection" is also now capitalized. OK MAB 02/04/2008</p> <p>"B" and "D": This reviewer does not understand how the conditions in the</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>stem result in LCO 3.0.3 being plausible. There is not a reasonable misconception that would lead an applicant to thinking that LCO 3.0.3. Corrected. MAB 02/04/2008</p> <p>“C” and “D”: Nothing has really occurred in the stem except for an inadvertent SI. There is no reasonable misconception that would lead an applicant to E-1 for a LOCA. Condition in the stem revised and distractors changed. OK MAB 02/04/2008</p> <p>The lack of plausibility in the distractors results in an LOD=1, which does not allow this question to discriminate between a competent and less than competent SRO. Q revised to bring to acceptable level. OK MAB 02/04/2008</p>
87	W/E16 G2.2.31	M	H	2								x	E ?	<p>Can “The reactor is in Mode 6 with” be deleted from first bullet? Deleted. MAB 02/04/2008</p> <p>S Not SRO-only: ROs are licensed to move fuel and therefore are required to know how to handle a loss of refueling water event. This is supported by K/A 036AA1.04, which has an RO IR of 3.7. Lowering water level is a fuel handling incident, which is supported by AOP-M.04, Refueling Malfunctions. See comment below. OK MAB 02/04/2008</p> <p>This was a modified question. The reviewer would like to see a copy of the source question, from which this one was modified. Provided. MAB 02/04/2008</p> <p>Do ROs currently move fuel at SQ? If not, when was the last time an RO moved irradiated fuel at SQ? Is there an SRO-only learning objective to support this being SRO-only knowledge? Based on the above reasoning this falls into the category of an RO question; however, if sufficient justification can be provided it may be permissible to allow this on the SRO exam.</p> <p>Licensee provided sufficient justification for SRO only level. MAB 02/04/2008</p>
88	008A2.09	M	H	2								x	U	<p>Reactor Physics and systems knowledge are the only requirements for answering this question. Plant response to a controller failure is systems knowledge that is required of an RO. Determining whether a temp change adds positive or negative reactivity is basic GFE reactor physics knowledge. This question can be answered only by knowing GFE knowledge. No SRO-only knowledge is required to answer this question. Q replaced. OK MAB 02/04/2008</p>
89	010G2.4.38	N	F	1					x				U	<p>“A” and “D”: 5 minutes is not plausible. Leading to a LOD=1.</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														S Q revised to address concern. OK MAB 02/04/2008 Question LOD would be acceptable if the acceptable ODS notification requirement is tested, instead of the 15 minute to declare. Test whether the requirement to notify ODS is 5 minutes from the event or 5 minutes from making the declaration. This will test knowledge of whether the ODS notification is required to be made prior to or after event declaration. Incorporated. OK MAB 02/04/2008
90	013A2.05	N	H	2								x	U S	Question is not SRO-only: Can this question be answered using only systems knowledge? The first piece of each answer choice can be answered by knowing what the cause of the condition could be, which is systems knowledge. This limits the potential answer choices to "C" and "D" using RO knowledge. Applicants can also determine that the pumps will not start manually based on the physical configuration of the plant, I.E. systems knowledge. Therefore, this question can be answered by an applicant without needing to use any SRO-only level knowledge. Concerns addressed. Distractors and stem revised. OK MAB 02/04/2008
91	103G2.2.14	N	F	2									S	Tie the second half of the question to the procedure just as you did with when Containment Closure Control is required to be implemented. I.E. ...who will maintain the listing of the Containment Closure Exceptions in effect in accordance with 0-GO-15. Incorporated. MAB 02/04/2008
92	029G2.4.46	N	H	3							x	x?	E ? S	Question is backward logic. This is discouraged by NUREG-1021; however, it is not prohibited. Licensee does not need to address this comment if they are satisfied with their applicants receiving this question. Noted. MAB 02/04/2008 Can "B" be eliminated using systems knowledge? Will ABI result in an auto shutdown of Unit 1 containment purge when 0RA-90-101A alarms with Unit 1 Lower Containment Purge in progress? Discuss with licensee. This will determine the status of the question. ABI will not auto S/D U1 purge. After discussion with licensee, Q is OK. MAB 02/04/2008
93	034A2.02	N	F	2				x					E S	"B": Rad Control Manager is not plausible because this is not an irradiated fuel bundle. Contamination and exposure should not be a concern. Fixed. MAB 02/04/2008 Consider the following changes: ... Per AOP-M.04, which one of the following correctly describes the lowest level of approval required for approval of recovery instructions? A. Refueling SRO B. Shift Manager

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														C. Operations Manager D. Plant Manager Incorporated. OK MAB 02/04/2008
94	G2.1.12 REF	N	H	2									S	Is second bullet worded correctly? Fixed. MAB 02/04/2008 Be consistent with periods after bullets. Fixed. MAB 02/04/2008
95	G2.1.33	N	H	2							x		U S	K/A Match: The K/A requires that tech spec entry conditions are tested. This question skips that part and then tests the actions that are required once the tech spec is entered. Q revised. OK MAB 02/04/2008 The stem does not even state that fuel is being moved; therefore, stopping fuel movement does not appear like a reasonable answer. Answer choices revised. OK MAB 02/05/2008 Question is disjointed. "A" and "B" are testing knowledge of mode change requirements and "C" and "D" are testing knowledge of fuel movement requirements. This is not the reason the question is unsat, but simply an observation. Answer choices revised. OK MAB 02/05/2008
96	G2.2.8 	B	F	2									E S	Consider wording the Q as follows: Which one of the following correctly describes the MINIMUM required qualifications for the person(s) PREPARING the safety evaluation paperwork in accordance with SPP-9.4, 10CFR50.59 Evaluations of Changes, Tests, and Experiments? Incorporated. OK MAB 02/05/2008
97	G2.3.1	B	H	2									E S	The topic and construction of the question is satisfactory. There are concerns with the wording of the "Why" column choice for "A" and "B". Where is "maintain critical safety function" defined? Would it be wrong for an applicant to believe that the emergency exposure would be needed to prevent the conditions from elevating beyond Yellow? Discuss with licensee. Q replaced. OK MAB 02/05/2008
98	G2.3.6	M	F	2				x					E S	Tie the question to the procedure. I.E.: Which one of the following in accordance with "procedure name and number"? Incorporated. OK MAB 02/05/2008 Be a little more precise with the first piece of each answer choice. I.E. Approval not permitted. / Approval is permitted. The above suggestion is a little more accurate because the SRO could just choose to not sign it, which is neither disapproving or approving. The

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>above wording covers all cases and speaks directly to the procedure requirement. Incorporated. OK MAB 02/05/2008</p> <p>Delete the last piece of "D": " , but dilution flow requirements are raised due to the higher activity." This really does not add to plausibility because it is not needed to make the answer choice unique. If an applicant knows whether the SM is required to approve, then this extraneous information is not meaningful. Incorporated. OK MAB 02/05/2008</p> <p>"B" is not plausible only because of the verbiage. There may be some improper grammar, which is easily fixed. I.E.: B. Approval not permitted. Cannot release monitor tank until 0-RM-90-122 has been returned to OPERABLE status. Incorporated. OK MAB 02/05/2008</p> <p>What does "two independent discharge valve lineups" mean? Wording must be precise and reflect exactly what the procedures require. Do two lineups need to be performed? Is one lineup performed and then it is independently verified? Answer choices modified. OK MAB 02/05/2008</p> <p>ODCM states that two qualified staff members independently verify release rate calculations. The answer choices in the questions states that 2 release rate calculations are verified. I am not sure that these requirements, as stated, are exactly the same. Discuss with licensee. Answer choices modified. OK MAB 02/05/2008</p>
99	G2.4.9	B	H	2				x				x	U S	<p>Not SRO-only: Knowing how to recognize pump cavitation and the actions to take to mitigate the cavitation is RO required knowledge. Knowing that dilution is not permitted is also RO required knowledge. All 1 hour and less tech specs are RO knowledge. Equipment protection actions are also RO knowledge. Through discussion with licensee, CE allowed Q to remain. OK MAB 02/05/2008</p> <p>There are also plausibility concerns with taking suction from VCT with boron too low. This point is inconsequential due to the question not being written at the SRO level. Through discussion with licensee, CE allowed distractors to remain. OK MAB 02/05/2008</p>
100	G2.4.49	N	H	2								x	U S	<p>"Shutdown Boards Energized" is not an action, it is a statement of fact. - Similar comment for "Safety Injection Actuated". Q replaced. OK MAB 02/05/2008</p>

Q#	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														Not SRO-only: Knowing whether the status of the reactor and turbine is systems knowledge, which is a required RO knowledge item. Knowing that upon a reactor trip that E-0 is entered is an RO knowledge item. This is all that is needed to arrive at the correct answer. Q revised/replaced to test SRO-only knowledge. OK MAB 02/05/2008

Facility: <u>Secouoyah</u>		Date of Exam: <u>02/08/2008</u>		Exam Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>	
Item Description	Initials				
	a	b	c		
1. Clean answer sheets copied before grading	<u>BN</u>	<u>N/A</u>	<u>MB</u>		
2. Answer key changes and question deletions justified and documented	<u>BN</u>	<u>N/A</u>	<u>MB</u>		
3. Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	<u>BN</u>	<u>N/A</u>	<u>MB</u>		
4. Grading for all borderline cases (80 ±2% overall and 70 or 80, as applicable, ±4% on the SRO-only) reviewed in detail	<u>BN</u>	<u>N/A</u>	<u>MB</u>		
5. All other failing examinations checked to ensure that grades are justified	<u>BN</u>	<u>N/A</u>	<u>MB</u>		
6. Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	<u>BN</u>	<u>N/A</u>	<u>MB</u>		
	Printed Name/Signature		Date		
a. Grader	<u>BRUNO CABALLERO / B. Caballe</u>		<u>2/14/08</u>		
b. Facility Reviewer(*)	<u>N/A</u>		<u>N/A</u>		
c. NRC Chief Examiner (*)	<u>MARK A. BATES / Mark Bates</u>		<u>02/14/2008</u>		
d. NRC Supervisor (*)	<u>MARCOLM T. VIDMANN / [Signature]</u>		<u>02/14/08</u>		
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.					

Post-Examination Check Sheet	
Facility: <i>SEQUOYAH</i>	Date of Examination: <i>January 2008</i>
Task Description	Date Complete
1. Facility written exam comments or graded exams received and verified complete	<i>02/14/2008</i>
2. Facility written exam comments reviewed and incorporated and NRC grading completed, if necessary	<i>02/14/2008</i>
3. Operating tests graded by NRC examiners	<i>02/14/2008</i>
4. NRC chief examiner review of operating test and written exam grading completed	<i>02/14/2008</i>
5. Responsible supervisor review completed	<i>02/21/2008</i>
6. Management (licensing official) review completed	<i>02/21/2008</i>
7. License and denial letters mailed	<i>02/21/2008</i>
8. Facility notified of results	<i>02/21/2008</i>
9. Examination report issued (refer to NRC MC 0612)	<i>02/22²⁰/2008</i>
10. Reference material returned after final resolution of any appeals	<i>N/A</i>



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

Confidential information submitted
under 10 CFR 2.390

February 13, 2008

10 CFR 55.40

Dr. William D. Travers
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30323-8931

Attention: Mr. M. T. Widmann

In the Matter of)
Tennessee Valley Authority (TVA))

Docket Nos. 50-327
50-328

**SEQUOYAH NUCLEAR PLANT (SQN) - REACTOR AND SENIOR REACTOR
OPERATOR INITIAL EXAMINATIONS - 05000327/2008301 AND 05000328/2008301**

In accordance with Examination Standard (ES) 501, "Initial Post-Examination Activities," of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," SQN is providing the following information: written examination, examination answer key, ES 401-8, examination cover sheets, seating chart, student answer sheets, and student clarifying questions.

In accordance with 10 CFR 55.49, "Integrity of Examinations and Tests," and NUREG-1021, appropriate measures have been taken to ensure examination integrity and security. The Examination Security Agreement Form ES-201-3 will be provided following the post-examination signatures.

Because of the administratively confidential nature, it is requested that the information contained in the enclosure be withheld from public disclosure in accordance with 10 CFR 2.390(a)(6). This letter contains no new commitments. If you should have any questions, please contact me at (423) 843-7170.

Sincerely,

James D. Smith
Manager, Site Licensing and
Industry Affairs

Enclosures



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

December 5, 2007

Dr. William D. Travers
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30323-8931

Attention: Mr. M. T. Widmann

In the Matter of) Docket Nos. 50-327
Tennessee Valley Authority (TVA)) 50-328

**SEQUOYAH NUCLEAR PLANT (SQN) - REACTOR AND SENIOR REACTOR
OPERATOR INITIAL EXAMINATIONS - 05000327/2008301 AND 05000328/2008301**

This letter transmits the requested information identified in NRC's letter to William R. Campbell dated August 3, 2007, for the examinations to be administrated the weeks of January 28, 2008, and February 4, 2008.

There are no commitments contained in this submittal. In accordance with 10 CFR 55.49 and NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," appropriate measures have been taken to ensure examination integrity and security. Accordingly, it is requested that this letter and the enclosed documents be withheld from public disclosure until the examinations are completed.

TVA's principal contact regarding the license examinations is Tom Jones, SQN Operations Training. Should you require additional information regarding this matter, please contact Mr. Jones at (423) 843-4206 or contact me at (423) 843-7170.

Sincerely,

for James W. Proffitt
James D. Smith
Manager, Site Licensing and
Industry Affairs

Enclosure

U.S. Nuclear Regulatory Commission
Page 2
December 5, 2007

JWP:KTS

cc: L. E. Nicholson, BR 4X-C
T. D. Wallace, STC 2H-SQN
B. A. Wetzel, BR 4X-C
EDMS, WT CA-K

The information contained within this document is the Property of the Tennessee Valley Authority and has been determined to be sensitive. Any further distribution of its contents will be on a need to know basis only as determined by the originator of the document or the recipient.

S E N S I T I V E I N F O R M A T I O N

ENCLOSURE

**TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2**

**OPERATING EXAMINATIONS FOR REACTOR OPERATOR (RO)
AND SENIOR REACTOR OPERATOR (SRO) CANDIDATES**

**Written Examination - RO and SRO Portions Including Student Reference Material
Question Development Reference Material for RO and SRO Written Examinations
Job Performance Measures for RO and SRO examinations
Four Simulator examinations
ES-201-3 - Examination Security Agreement
ES-301-2 - Control Room/In-Plant Systems Outline
ES-301-3 - Operating Test Quality Checklist
ES-301-4 - Simulator Scenario Quality Checklist
ES-301-5 - Transient and Event Checklist
ES-301-6 - Competencies Checklist
ES-401-6 - Written Examination Quality Checklist**



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

October 23, 2007

Dr. William D. Travers
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30323-8931

Attention: Mr. M. T. Widmann

In the Matter of)
Tennessee Valley Authority)

Docket Nos. 50-327
50-328

**SEQUOYAH NUCLEAR PLANT - REACTOR AND SENIOR REACTOR OPERATOR
INITIAL EXAMINATIONS - 05000327/2008301 AND 05000328/2008301**

As requested by NRC letter to TVA dated August 3, 2007, this letter transmits the examination outlines identified in NRC's letter to William R. Campbell dated August 3, 2007, for the examinations to be administrated the weeks of January 28, 2008 and February 4, 2008.

There are no commitments contained in this submittal. In accordance with 10 CFR 55.49 and NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," appropriate measures have been taken to ensure examination integrity and security. Accordingly, it is requested that this letter and the enclosed documents be withheld from public disclosure until the examinations are completed.

Please direct questions concerning this issue to me at (423) 843-7170.

Sincerely,

Glenn W. Morris
Manager, Site Licensing and
Industry Affairs

Enclosure

ENCLOSURE

**TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2**

The following are included in this enclosure:

License Examination Outlines:

ES-201-2 Examination Outline Quality Checklist
ES-201-3 Examination Security Agreement
ES-301-1 Administrative Topics JPM Outlines for RO and SRO exams
ES-301-2 Control Room/In-Plant Systems JPM Outlines for RO and SRO exams
ES-301-5 Transient and Event Checklist
ES-D-1 Simulator Scenario Outlines for 4 scenarios
ES-401-2 and 3 Written Exam Outlines for RO and SRO exams
ES-401-4 Record of Rejected K/As for RO and SRO exams
Written Exam development methodology statement



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

August 15, 2007

Dr. William D. Travers
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30323-8931

Attention: Mr. R. C. Haag

In the Matter of)
Tennessee Valley Authority)

Docket Nos. 50-327
50-328

**SEQUOYAH NUCLEAR PLANT - REACTOR AND SENIOR REACTOR OPERATOR
INITIAL EXAMINATIONS - 05000327/2008301 AND 05000328/2008301**

As requested by Mark Bates of your staff, this letter transmits the written examination outlines identified in NRC's letter to William R. Campbell dated August 3, 2007, for the examinations to be administrated the week of January 28, 2008.

Due to the administratively confidential nature of the enclosure, it is requested that the information contained in the enclosure be withheld from public disclosure until after the examinations are complete.

Please direct questions concerning this issue to me at (423) 843-7170.

Sincerely,

Glenn W. Morris
Manager, Site Licensing and
Industry Affairs

Enclosure

U.S. Nuclear Regulatory Commission
Page 2
August 15, 2007

JWP:KTS

cc: R. H. Bryan, BR 4X-C
T. D. Wallace, STC 2H-SQN
EDMS, WTC A-K

The information contained within this document is the Property of the Tennessee Valley Authority and has been determined to be sensitive. Any further distribution of its contents will be on a need to know basis only as determined by the originator of the document or the recipient.

S E N S I T I V E I N F O R M A T I O N

ENCLOSURE

**TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2**

LICENSE WRITTEN EXAMINATION OUTLINES