ES-201 **Examination Preparation Checklist** **Form ES-201-1**

Facility: Sequoyah Date of Examination: 05/13/2013

Developed by: Written - Facility X NRC ☐ // Operating - Facility X NRC ☐

Target Date*		Task Description (Reference)	Chief Examiner's Initials
-180	1.	Examination administration date confirmed (C.1.a; C.2.a and b)	
-120	2.	NRC examiners and facility contact assigned (C.1.d; C.2.e)	
-120	3.	Facility contact briefed on security and other requirements (C.2.c)	
-120	4.	Corporate notification letter sent (C.2.d)	
[-90]	[5.	Reference material due (C.1.e; C.3.c; Attachment 3)]	N/A N/A
{-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)	
{-70}	{7.	Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	
{-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)	
-30	9.	Preliminary license applications (NRC Form 398's) due (C.1.l; C.2.g; ES-202)	
-14	10.	Final license applications due and Form ES-201-4 prepared (C.1.l; C.2.i; ES-202)	
-14	11.	Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	
-14	12.	Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g)	
-7	13.	Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	
-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)	
-7	15.	Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k)	
-7	16.	Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	

* 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.

* Final authorization for operating exam ONLY *

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

Facility: **Sequoyah Nuclear Station 1 & 2** Date of Examination: **05/13/2013**

Item	Task Description	Initials a	Initials b*	Initials c#
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	**	**	*
	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.	**	**	*
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	**	**	*
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	N/A	N/A	*
2. SIMULATOR	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.			
	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.			
	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.			
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.			
	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			
	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.			
4. GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.			
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.			
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.			
	d. Check for duplication and overlap among exam sections.			
	e. Check the entire exam for balance of coverage.			
	f. Assess whether the exam fits the appropriate job level (RO or SRO).			

	Printed Name/Signature	Date
a. Author	Michael Buckner / Michael Buckner	5/6/13
b. Facility Reviewer (*)	Sam Nakamine / Sam Nakamine	5/6/13
c. NRC Chief Examiner (#)	Daniel M. Bacon / Daniel M. Bacon MICHAEL MEEKS / Michael Meeks	5/7/13
d. NRC Supervisor	NICOLE T. WIDMAYER / Nicole T. Widmayer	05/08/13

Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.
* Not applicable for NRC-prepared examination outlines

** - Written Exam outline developed by NRC
* - For operating exam only

* For Written Examination Final Approval Only *

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

Facility: **Sequoyah Nuclear Station 1 & 2** Date of Examination: **05/13/2013**

Item	Task Description	Initials a	Initials b*	Initials c#
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	++	**	
	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.	++	**	
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.			
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.			
2. SIMULATOR	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.			
	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.			
	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.			
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.		N A	
	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			
	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.			
4. GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.			
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.			
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.			
	d. Check for duplication and overlap among exam sections.			
	e. Check the entire exam for balance of coverage.			
	f. Assess whether the exam fits the appropriate job level (RO or SRO).			

	Printed Name/Signature	Date
a. Author	Michael Buckner /	5/21/13
b. Facility Reviewer (*)	Sam Nakamine /	5/21/2013
c. NRC Chief Examiner (#)	Daniel M. Bacon / Daniel M. Bacon MICHAEL MEEKS	5/21/2013
d. NRC Supervisor	MARK BLAIR T. MILLIGAN /	05/21/13

Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.
* Not applicable for NRC-prepared examination outlines

++ Written exam outline developed by NRC

ES-201 **Examination Security Agreement** **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 **5/13-20/2013** 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 **5/13-20/2013** . 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.	Michael Buckner	Project Manager / Developer	Michael Buck	7/19/2012	Michael Buck	5/23/13	
2.	JOHN B RODEN	Developer	John B Roden	9/23/2012	***		FAX
3.	OWEN B TRIOLO	Developer	Owen B Triolo	7/26/2012	Owen B Triolo	5/23/2013	
4.	Thomas E White Jr.	Developer	Thomas E White Jr	7/31/12	Thomas E White Jr	5/29/13	
5.	STEVEN V. SMITH	OTS/DEVELOPER	Steve	7/31/12	Steve	5/23/2013	
6.	Steven D Tuthill	SRO	Steven Tuthill	8/20/12	Steven Tuthill	5/23/2013	
7.	Russell W Joplin	Corp PROG MGR	Russ	8/24/12	Russ	5/23/2013	
8.	CHRISTOPHER DAHLMAN	LOR SUPERVISON	Chris Dahlman	10/22/12	Chris Dahlman	5/22/13	
9.	SAMUEL NAKAMINE	SRO / FACILITY REP.	Sam Nakamine	1/10/13	Sam Nakamine	5/23/13	
10.	Mike Bercher	SIM Tech	Mike Bercher	1/17/13	*		
11.	James D. Knight	Software Engr	James D. Knight	1/10/13	James D. Knight	5/28/13	
12.	NORMAN GOOD	~~Ops Coord~~ EAG 1-23-13 SIM. MGR.	Norman Good	1/23/13	Norman Good	5/24/13	
13.	Donald (Tony) LANGFORD	RO	Donald Langford	1/25/13	Donald Langford	6/3/13	
14.	William D. Lovell	Unit Operator	William D Lovell	1/25/13	William D Lovell	5/26/13	
15.	JOHN M. ALEXANDER	SRO	John M Alexander	1/25/13	John M Alexander	5/27/13	

NOTES:

* No longer employed with the company. 5/28/2013

*** See attached FAX. 5/28/2013

ES-201 **Examination Security Agreement** **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 5/13/2013 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 _____. 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.	Joseph Welch	SRO		2/14/13		5/26/13	
2.	KEVIN SHAHAN	RO		2/14/13		5/29/13	
3.	TIMOTHY REED	SRO		2/19/13		5/27/13	
4.	Robert S. Morey Jr	SRO		2/20/13		5/26/13	
5.	KEVIN M. MICHAEL	SRO		2/20/13	*		
6.	TIMOTHY A. HOWARD	RO		2/21/13		5/31/13	
7.	Alton Crenshaw	RO		2/20/13		5/31/13	
8.	Jeremy Laymon	RO		2/20/13		5/26/13	
9.	Ryan Radel	RO		2/20/13		5/28/13	
10.	Leslie R Morey	SRO		2/27/13		5/28/13	
11.	Phillip N. Mobley	SRO Cert Trait		3/4/13	* *		
12.	DONALD A. BOYLES	SRO		3/11/13		5/29/13	
13.	William RHYONS	RO		3/5/13		5/31/13	
14.	Kyle Bell	RO		3/6/13		5/31/13	
15.	Johnnie Edwards	SRO		3/7/13		5/28/13	

NOTES:

** No longer employed with the company. 5/28/2013

* K Michael signed off per telecon. 5/29/2013

ES-201 **Examination Security Agreement** **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 **5/13/2013** 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 **5/13/2013** . 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.	Tracy Sudoko	US/STA		3/7/13		5/29/13	
2.	Bruce Burt	US/STA		3/8/13		5/29/13	
3.	Matt Lovitt	SM/SRO		3/8/13		5/26/13	
4.	BRIAN KATE	WBN Exam Project Mgr		3/8/13	* * *		FAX
5.	Paul Parashak	US/STA		03/21/13		05/28/13	
6.	DEREK HAWES	OPERATIONS TRAINING MGR		4/17/13		5/24/13	
7.	William T. Casey	US/NOR Instructor		4/17/13		5/28/13	
8.	James K. Wilkes	SRO Liaison		4/19/13		5/23/13	
9.	David Neff	OPS Training		4/24/13		5/24/13	
10.	Lorena Boyle	RO		4-25-13		5-26-13	
11.	TIM RIEGER	SM/SRO		5-2-13		5/24/13	
12.	GARY GARNER	OPS SUPERINTENDENT		5/2/13		5/24/13	
13.	MATT LEENERTS	SM/SRO		5/3/13		5/31/13	
14.	HARRY Hoult	OPS/SRO		5-14-13		5/31/13	
15.	Shannon Anderson	Training PIC		5/6/13		5/29/13	

NOTES:

* * * See attached FAX 5/28/2013

ES-201 **Examination Security Agreement** **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 **5/13/2013** 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 **5/13/2013** . 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.	KODA SMITH	TRAINING Manager		5/10/13		5/28/13	
2.	MATTHEW McMULLIN	ILT SUPERVISOR		5/10/13		5/23/13	
3.	TED IVEY	Reactor Operator		5/11/13		5/26/13	
4.	ROBERT CAMENISCH	SRO		5/11/13		5/27/13	
5.	Jacques Olivier	SRO		5/12/13		5/28/13	
6.	Matt Reeves	IM		5/12/13		5/24/13	
7.	MAX HIMS	OPS TRAINING/CLASSCLEAN		5/13/13		5/23/13	
8.	DAVID A. SMITH	SRO		5/13/13		5/26/13	
9.	Tiffery D Dodson	OPS Instructor		5/13/13		5/28/13	
10.	ALBERT F. RODDY	OPS Inst.		5/17/13		5/31/13	
11.	James R. Parker	OPS PER Coordinator/Instructor FL		5/13/13		5/29/13	++
12.	William L Chandler	EP Training		5/13/13		5/28/13	
13.	John Shahan	I M		5/14/13		5/29/13	
14.	PAUL SIMMONS	PLANT Manager		5-15-13		5-28-13	
15.	TERRY DUNN	SRO		5/15/13		5/31/13	

NOTES:

++ signed per telecon on 5/29/13 KKS

ES-201 **Examination Security Agreement** **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 **5/13/2013** 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 **5/13/2013** . 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.	SEAN CONNORS	OPS MGR		5/16/13		5/28/13	
2.	Lee Sanders	Senior Advisor		5/17/13	***		
3.	Don Jernigan	Sr VP		5/17/13			
4.	JOHN CARLIN	VP		5/17/13		6/3/13	
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							

NOTES:

Don Jernigan signed off via e-mail 5/28/13 copy attached

*** See attached FAX

ES-201 **Examination Security Agreement** 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 5/13/2013 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 5/13/2013 . 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.	SEAN CONNORS	OPS MGR		5/16/13			
2.	Lee Sanders	Senior Advisor		5/17/13			
3.	Don Jernigan	Sr VP		5/17/13		5/28/13	** Scanned
4.	JOHN CARLIN	VP		5/17/13		**	
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							

NOTES:

Don Jernigan signed off via e-mail 5/28/13

** Scanned copy

Facility: Sequoyah Nuclear Station 1 & 2 Date of Examination: 05/13/2013

Exam Level: RO ☑ SRO ☐ Operating Test No: 2013-301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, M	2.1.23 Ability to perform specific system and integrated plant procedures during all modes of plant operation. (4.3/4.4) Perform a RWST Level Calculation and Determine Integrator Settings.
Conduct of Operations	R, D	2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc. (3.9/4.2) Given plant data, calculate Maximum Reactor Vessel Vent Time.
Equipment Control	R, M	2.2.14 Knowledge of the process for controlling equipment configuration or status. (3.9/4.3) Perform a System Operability Checklist when the ~~1~~A RHR becomes inoperable and determine the required protected train tag placement for configuration control. 2 5/7/2013
Radiation Control		Not examined
Emergency Procedures/Plan	R, N	2.4.39 Knowledge of RO responsibilities in emergency plan implementation. (3.9/3.8) Determine the required Operator allocation and make a report to the SM for an Emergency Plan turnover to the OSC Ops Advisor SRO.

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

* Type Codes & Criteria:(C)ontrol room, (S)imulator, or Class(R)oom

(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)

(N)ew or (M)odified from bank (≥ 1)

(P)revious 2 exams (≤ 1; randomly selected)

A.1.a

Given plant data The examinee will perform a RWST Level Calculation using 1-SO-62-7, Boron Concentration Control and determines the following:

- The amount of primary water to be entered into the PW integrator to be 1053 ± 1 gallons.
- The amount of boric acid solution to be entered into the BA integrator to be 629 ± 1 gallons.

A.1.b

Given plant data during a plant emergency, the examinee will determine by calculating and interpreting graphs the time required to vent the Reactor Vessel while maintaining containment hydrogen concentration below 3% using EA-0-7 Calculating Maximum Reactor Vessel Vent Time.

A.2

Given an emergent condition the 1A RHR pump is declared to be INOPERABLE. The examinee will identify the equipment required to be administratively protected to maintain configuration control and determine the placement of protected train tags using 0-GO-16 SYSTEM OPERABILITY CHECKLISTS.

A.3

Not examined.

A.4

Given a major plant fire is in progress in the Auxiliary Building 690 elevation penetration room with the Site Emergency Plan in progress. The examinee will direct Assistant Unit Operators (AUO) to perform local actions as required by the location of the fire. The examinee will select the correct appendix based on location for the AUO task assignment and will determine which AUO will perform the specified task based on the level of AUO qualification using AOP-N.08 APPENDIX R FIRE SAFE SHUTDOWN. The examinee will prepare a report to the Shift Manager the choices made when the Shift Manager gives a turnover for personnel accountability during the Emergency Plan when the Operations Support Center is activated.

Facility: Sequoyah Nuclear Station 1 & 2 Date of Examination: 05/13/2013

Exam Level: RO ☐ SRO ☑ Operating Test No: 2013-301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, M	2.1.23 Ability to perform specific system and integrated plant procedures during all modes of plant operation. (4.3/4.4) Perform a RWST Level Calculation and Determine Integrator Settings.
Conduct of Operations	R, D	2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc. (3.9/4.2) Given plant data, calculate Maximum Reactor Vessel Vent Time.
Equipment Control	R, N	2.2.18 Knowledge of the process for managing maintenance activities during shutdown operations, such as risk assessments, work prioritization, etc. (2.6/3.9) Determine Switchyard Access Requirements During an Outage Condition.
Radiation Control	R, D	2.3.6 Ability to approve release permits. (2.0./3.8) Approve a Monitor Tank Release with 0-RE-90-122 INOPERABLE.
Emergency Procedures/Plan	R, M	2.4.41 Knowledge of the emergency action level thresholds and classifications. (4.6) Classify The Event Using The EPIP-1 and Complete a State Notification Form.

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

* Type Codes & Criteria:(C)ontrol room, (S)imulator, or Class(R)oom

(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)

(N)ew or (M)odified from bank (≥ 1)

(P)revious 2 exams (≤ 1; randomly selected)

A.1.a

Given plant data The examinee will perform a RWST Level Calculation using 1-SO-62-7, Boron Concentration Control and determines the following:

- The amount of primary water to be entered into the PW integrator to be 1053 ± 1 gallons.
- The amount of boric acid solution to be entered into the BA integrator to be 629 ± 1 gallons.

A.1.b

Given plant data during a plant emergency, the examinee will determine by calculating and interpreting graphs the time required to vent the Reactor Vessel while maintaining containment hydrogen concentration below 3% using EA-0-7 Calculating Maximum Reactor Vessel Vent Time.

A.2

Given a situation while acting as the Work Control Center (WCC) Supervisor, the examinee will determine the following prior to allowing a work group access to the switchyard using OPDP-2 Switchyard Access and Switching Order Execution:

- Pre-job brief requirements.
- Switchyard access gate requirements.
- Vehicle speed limit.
- Vehicle escort requirement.

The requirements listed are necessary to maintain switchyard integrity during switchyard entry and are the responsibility if a Sequoyah Senior Reactor Operator.

This task is based on a Sequoyah internal operating event.

A.3

Given a situation while acting as the Unit Supervisor when a Waste Disposal System Monitor tank liquid release is planned with Radiation Monitor 0-RE-90-122 INOPERABLE, the examinee will determine the following prior to authorizing the release using 0-SO-77-1 WASTE DISPOSAL SYSTEM (LIQUID):

- Valves required to be Independently Verified.
- Location of jumper placement to allow for 0-RCV-77-43 operation.

Additionally the examinee will determine the following additional Chemistry Department requirements prior to authorizing the release using 0-SI-CEM-077-400.1 Liquid Waste Effluent Batch Release:

- Independent sample requirement
- Independent analysis requirement
- Independent release rate verification.

The requirements listed are necessary to demonstrate the appropriate administrative controls that are in place to preclude the possibility of an inadvertent release radioactive in excess of limits to the public.

A.4

Acting as the Site Emergency Director and given data for a plant emergency in the simulator, the examinee will interpret the data from the event and determine the correct Emergency Classification of Site Area Emergency, and subsequently complete a state notification form.

Facility: Sequoyah Nuclear Station 1 & 2	Date of Examination: 05/13/2013
Exam Level: RO √ SRO-I ☐ SRO-U ☐	Operating Test No: 2013-301

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. Perform a 0-SI-OPS-085-011.0 Reactivity Control Systems Moveable Control Assemblies Test. K/A 001.A2.11 (4.4/4.7)	M, A, S	1
b. Align ECCS & CS Pumps to the Containment Sump K/A 006 A4.07 (4.4/4.4)	M, A, EN, L, S	2
c. Terminate SI and establish Normal Charging. K/A EPE E02 EA1.1 (4.0/3.9)	D, A, EN, L, S	3
d. Respond to a High RCP Stator Temperature Alarm. K/A APE 015/017 AA1.03 (3.7/3.8)	M, L,S	4P
e. Align ERCW to the AFW Pumps. K/A EPE E05 EA 1.1 (4.1/4.0)	N, L, S	4S
f. Start up of the A Hydrogen Recombiner K/A 028 A4.01 (4.0/4.0)	D, L, S	5
g. Transfer 1A-A 6.9 KV SD Board from Alternate to Normal Supply. 064 A4.01 (4.0/4.3)	D, A, S	6
h. Shutdown Containment Purge. 029 A1.03 (3.0 / 3.3)	N, L, S	8
In-Plant Systems (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Perform a Local EDG Start with a Failure of ERCW Valve to Auto Open. K/A 062 A4.07 (3.1/3.1)	D, A, E	6
j. Perform a Local Alignment of U-2 TDAFW Level Control Valves. K/A 061A2.07 (3.4/3.5)	M, R, E,L	4S
k. Respond to Loss of Control Air System. K/A APE 065 AA1.04 (3.5/3.4)	D, E, L	8

@ 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
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(EN)gineered safety feature	- / - / ≥1 (control room system)
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

a. The examinee will perform a control rod testing in MODE 1 using 0-SI-OPS-085-011.0 Reactivity Control Systems Moveable Control Assemblies starting with Control Bank C. During the test an uncontrolled rod movement occurs, the examinee will use the alternate path and transition to AOP-C.01, Rod Control System Malfunctions to initiate a manual Reactor trip.

b. The examinee will assume the shift with a LOCA is in progress and ECCS pumps are running with the suction path aligned from the RWST. After assuming the shift, an RWST Low Level condition occurs and the examinee will transition to ES-1.3, Transfer to Cold Leg Recirculation to align Cold Leg Recirculation. While performing ES-1.3, RHR suction valve 74-21 fails to close, the examinee will use the alternate path and manually close FCV-63-1 RHR Pump Suction from RWST. The examinee will subsequently complete the alignment of Cold Leg Recirculation with the ECCS pumps suction path aligned to the containment sump.

c. The examinee will assume the shift in MODE 3 following a Safety Injection. The examinee will terminate safety injection by stopping one charging pump, isolating the CCPIT and will attempt to establish charging flow using E-0, REACTOR TRIP OR SAFETY INJECTION. While aligning Charging flow, Normal Charging Isolation valve FCV-62-85 will not open, the examinee will use the alternate path and manually align Charging by opening Alternate Charging Isolation valve FCV-62-85.

d. The examinee will assume the shift in MODE 3 and will be directed to respond to plant conditions. The #2 Reactor Coolant Pump (RCP) will develop a high temperature condition on the motor stator. The examinee will address the ARP and transition to AOP-R.04, Reactor Coolant Pump Malfunctions. Based on plant conditions with the plant in MODE 3, the examinee will stop the #2 RCP and close the Loop 2 Pressurizer Spray valve.

e. The examinee will assume the shift in MODE 3 with a large leak in the Condensate Storage Tank and a Loss of Offsite Power. The examinee will align Essential Raw Cooling Water (Service Water) to the motor driven Auxiliary Feed Pumps (AFW) using EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW section 4.10 before the AFW pumps trip due to excessive cavitation.

f. The examinee will assume the shift following an accident. The examinee will determine the Containment Pressure correction factor and will place "A-A" Hydrogen Recombiner in service using EA-268-1, Placing Hydrogen Recombiner in Service.

g. The examinee will assume the shift in MODE 1 with 1A 6.9 Kv Shutdown Board to the aligned to the alternate power source. The examinee will be directed to transfer 1A-A 6.9kV Shutdown Board to Normal Feeder at 1-M-1 using 0-SO-202-4, 6900V Shutdown Boards, Section 8.1.5. The transfer to the normal power supply will fail, and the 1A Emergency Diesel Generator (EDG) will fail to auto start resulting in a loss of power to the 1A 6.9 Kv Shutdown Board. The examinee will use the alternate path to manually start the 1A EDG using 0-SO-202-4, 6900V Shutdown Boards.

h. The examinee will assume the shift in MODE 5 with Lower Containment Purge "A" Train in service. The examinee will remove Lower Containment Purge "A" Train from service using 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION.

i. The examinee will perform a normal, local start of the 1A Diesel Generator using 0-SO-82-1 Diesel Generator 1A-A section 8.2. While performing the start of the 1A Diesel Generator, the examinee will determine FCV-67-66 Emerg Dsl Htxs A1 & A2 Sup Vlv from Hdr A failed to automatically open. The examinee will use the alternate path and manually open 1-FCV-67-68D Emerg Dsl Htxs A1 & A2 Sup Vlv From Hdr B to establish cooling water flow to the 1A Diesel Generator.

j. The examinee will assume the shift in MODE 3 during a Loss of Essential Raw Cooling Water (ERCW) condition. The examinee will perform local actions to align the backup air supply isolation valves to the U-2 TDAFW Level Control Valves.

k. The examinee will assume the shift in MODE 3 during a Loss of Control and Service Air. The examinee will perform local actions to start and manually load the Station Air Compressors using EA-32-2, Establishing Control and Service Air.

Facility: Sequoyah Nuclear Station 1 & 2	Date of Examination: 05/13/2013
Exam Level: RO ☐ SRO-I √ SRO-U ☐	Operating Test No: 2013-301

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. Perform a 0-SI-OPS-085-011.0 Reactivity Control Systems Moveable Control Assemblies Test. K/A 001.A2.11 (4.4/4.7)	M, A, S	1
b. Align ECCS & CS Pumps to the Containment Sump K/A 006 A4.07 (4.4/4.4)	M, A, EN, L, S	2
c. Terminate SI and establish Normal Charging. K/A EPE E02 EA1.1 (4.0/3.9)	D, A, EN, L, S	3
d. Respond to a High RCP Stator Temperature Alarm. K/A APE 015/017 AA1.03 (3.7/3.8)	M, L, S	4P
e. Align ERCW to the AFW Pumps. K/A EPE E05 EA 1.1 (4.1/4.0)	N, L, S	4S
f. Not examined.		
g. Transfer 1A-A 6.9 KV SD Board from Alternate to Normal Supply. K/A 062 A4.07 (3.1/3.1)	D, A, S	6
h. Shutdown Containment Purge. 029 A1.03 (3.0 / 3.3)	N, L, S	8
In-Plant Systems (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Perform a Local EDG Start with a Failure of ERCW Valve to Auto Open. K/A 064 A4.01 (4.0/4.3)	D, A, E	6
j. Perform a Local Alignment of U-2 TDAFW Level Control Valves. K/A 061A2.07 (3.4/3.5)	M, R, E,L	4S
k. Respond to Loss of Control Air System. K/A APE 065 AA1.04 (3.5/3.4)	D, E, L	8

@ 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
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(EN)gineered safety feature	- / - / ≥1 (control room system)
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

a. The examinee will perform a control rod testing in MODE 1 using 0-SI-OPS-085-011.0 Reactivity Control Systems Moveable Control Assemblies starting with Control Bank C. During the test an uncontrolled rod movement occurs, the examinee will use the alternate path and transition to AOP-C.01, Rod Control System Malfunctions to initiate a manual Reactor trip.

b. The examinee will assume the shift with a LOCA is in progress and ECCS pumps are running with the suction path aligned from the RWST. After assuming the shift, an RWST Low Level condition occurs and the examinee will transition to ES-1.3, Transfer to Cold Leg Recirculation to align Cold Leg Recirculation. While performing ES-1.3, RHR suction valve 74-21 fails to close, the examinee will use the alternate path and manually close FCV-63-1 RHR Pump Suction from RWST. The examinee will subsequently complete the alignment of Cold Leg Recirculation with the ECCS pumps suction path aligned to the containment sump.

c. The examinee will assume the shift in MODE 3 following a Safety Injection. The examinee will terminate safety injection by stopping one charging pump, isolating the CCPIT and will attempt to establish charging flow using E-0, REACTOR TRIP OR SAFETY INJECTION. While aligning Charging flow, Normal Charging Isolation valve FCV-62-85 will not open, the examinee will use the alternate path and manually align Charging by opening Alternate Charging Isolation valve FCV-62-85.

d. The examinee will assume the shift in MODE 3 and will be directed to respond to plant conditions. The #2 Reactor Coolant Pump (RCP) will develop a high temperature condition on the motor stator. The examinee will address the ARP and transition to AOP-R.04, Reactor Coolant Pump Malfunctions. Based on plant conditions with the plant in MODE 3, the examinee will stop the #2 RCP and close the Loop 2 Pressurizer Spray valve.

e. The examinee will assume the shift in MODE 3 with a large leak in the Condensate Storage Tank and a Loss of Offsite Power. The examinee will align Essential Raw Cooling Water (Service Water) to the motor driven Auxiliary Feed Pumps (AFW) using EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW section 4.10 before the AFW pumps trip due to excessive cavitation.

f. Not examined.

g. The examinee will assume the shift in MODE 1 with 1A 6.9 Kv Shutdown Board to the aligned to the alternate power source. The examinee will be directed to transfer 1A-A 6.9kV Shutdown Board to Normal Feeder at 1-M-1 using 0-SO-202-4, 6900V Shutdown Boards, Section 8.1.5. The transfer to the normal power supply will fail, and the 1A Emergency Diesel Generator (EDG) will fail to auto start resulting in a loss of power to the 1A 6.9 Kv Shutdown Board. The examinee will use the alternate path to manually start the 1A EDG using 0-SO-202-4, 6900V Shutdown Boards.

h. The examinee will assume the shift in MODE 5 with Lower Containment Purge "A" Train in service. The examinee will remove Lower Containment Purge "A" Train from service using 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION.

i. The examinee will perform a normal, local start of the 1A Diesel Generator using 0-SO-82-1 Diesel Generator 1A-A section 8.2. While performing the start of the 1A Diesel Generator, the examinee will determine FCV-67-66 Emerg Dsl Htxs A1 & A2 Sup Vlv from Hdr A failed to automatically open. The examinee will use the alternate path and manually open 1-FCV-67-68D Emerg Dsl Htxs A1 & A2 Sup Vlv From Hdr B to establish cooling water flow to the 1A Diesel Generator.

j. The examinee will assume the shift in MODE 3 during a Loss of Essential Raw Cooling Water (ERCW) condition. The examinee will perform local actions to align the backup air supply isolation valves to the U-2 TDAFW Level Control Valves.

k. The examinee will assume the shift in MODE 3 during a Loss of Control and Service Air. The examinee will perform local actions to start and manually load the Station Air Compressors using EA-32-2, Establishing Control and Service Air.

Facility: Sequoyah Nuclear Station 1 & 2	Date of Examination: 05/13/2013
Exam Level: RO ☐ SRO-I ☐ SRO-U √	Operating Test No: 2013-301

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. Perform a 0-SI-OPS-085-011.0 Reactivity Control Systems Moveable Control Assemblies Test. K/A 001.A2.11 (4.4/4.7)	M, A, S	1
b. Align ECCS & CS Pumps to the Containment Sump K/A 006 A4.07 (4.4/4.4)	M, A, EN, L, S	2
c. Terminate SI and establish Normal Charging. K/A EPE E02 EA1.1 (4.0/3.9)	D, A, EN, L, S	3
d. Not Examined		
e. Not Examined		
f. Not Examined		
g. Not Examined		
h. Not Examined		
In-Plant Systems (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Not Examined		
j. Perform a Local Alignment of U-2 TDAFW Level Control Valves. K/A 061A2.07 (3.4/3.5)	M, R, E,L	4S
k. Respond to Loss of Control Air System. K/A APE 065 AA1.04 (3.5/3.4)	D, E, L	8

@ 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
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(EN)gineered safety feature	- / - / ≥1 (control room system)
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

a. The examinee will perform a control rod testing in MODE 1 using 0-SI-OPS-085-011.0 Reactivity Control Systems Moveable Control Assemblies starting with Control Bank C. During the test an uncontrolled rod movement occurs, the examinee will use the alternate path and transition to AOP-C.01, Rod Control System Malfunctions to initiate a manual Reactor trip.

b. The examinee will assume the shift with a LOCA is in progress and ECCS pumps are running with the suction path aligned from the RWST. After assuming the shift, an RWST Low Level condition occurs and the examinee will transition to ES-1.3, Transfer to Cold Leg Recirculation to align Cold Leg Recirculation. While performing ES-1.3, RHR suction valve 74-21 fails to close, the examinee will use the alternate path and manually close FCV-63-1 RHR Pump Suction from RWST. The examinee will subsequently complete the alignment of Cold Leg Recirculation with the ECCS pumps suction path aligned to the containment sump.

c. The examinee will assume the shift in MODE 3 following a Safety Injection. The examinee will terminate safety injection by stopping one charging pump, isolating the CCPIT and will attempt to establish charging flow using E-0, REACTOR TRIP OR SAFETY INJECTION. While aligning Charging flow, Normal Charging Isolation valve FCV-62-85 will not open, the examinee will use the alternate path and manually align Charging by opening Alternate Charging Isolation valve FCV-62-85.

d. Not Examined.

e. Not Examined.

f. Not Examined.

g. Not Examined.

h. Not Examined.

i. Not Examined.

j. The examinee will assume the shift in MODE 3 during a Loss of Essential Raw Cooling Water (ERCW) condition. The examinee will perform local actions to align the backup air supply isolation valves to the U-2 TDAFW Level Control Valves.

k. The examinee will assume the shift in MODE 3 during a Loss of Control and Service Air. The examinee will perform local actions to start and manually load the Station Air Compressors using EA-32-2, Establishing Control and Service Air.

– FINAL AUTHORIZATION FOR OPERATING EXAM –

ES-301 **Operating Test Quality Checklist** **Form ES-301-3**

Facility: **Sequoyah Nuclear Station 1 & 2** Date of Examination: **05/13/2013** Operating Test Number: **2013-301**

	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).			
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.			
c.	The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)			
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.			
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.			
	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			
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.			
	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.				

		Printed Name / Signature	Date
a.	Author	Michael Buckner / Michael Buck	5/6/13
b.	Facility Reviewer(*)	Sam Nakamine Sam Nakamine	5/6/13
c.	NRC Chief Examiner (#)	Daniel M. Bacon Daniel M. Bacon MICHAEL MEEKS /	5/7/13 Michael Meeks
d.	NRC Supervisor	MALCOLM T. WIDMANN /	05/08/13

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

ES-301 **Simulator Scenario Quality Checklist** **Form ES-301-4**

Facility: **Sequoyah Station 1 & 2** Date of Exam: **05/13/2013** Scenario Numbers: **1 / 2 / 3/** Operating Test No.: **2013-301**

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.			
2.	The scenarios consist mostly of related events.			
3.	Each event description consists of • the point in the scenario when it is to be initiated • the malfunction(s) that are entered to initiate the event • the symptoms/cues that will be visible to the crew • the expected operator actions (by shift position) • the event termination point (if applicable)			
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.			
5.	The events are valid with regard to physics and thermodynamics.			
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.			
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.	N/A	N/A	N/A
8.	The simulator modeling is not altered.			
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.			
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.			
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).			
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).			
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.			

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

ES-301 **Transient and Event Checklist** **Form ES-301-5**

Facility: Sequoyah Nuclear Plant 1 & 2 Date of Exam: 5/13/2013 Operating Test No.: 2013-301

APPLICANT	EVENT TYPE	Scenarios												TOTAL	MINIMUM(*)		
		1			3												
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U
RO X SRO-I ☐ SRO-U ☐	RX		4											1	1	1	0
	NOR						1							1	1	1	1
	I/C		1,3				3,8							4	4	4	2
	MAJ		6				6							2	2	2	1
	TS													0	0	2	2
RO X SRO-I ☐ SRO-U ☐	RX					1								1	1	1	0
	NOR			4										1	1	1	1
	I/C			2,5		2,4								4	4	4	2
	MAJ			6		6								2	2	2	1
	TS													0	0	2	2
RO ☐ SRO-I ☐ SRO-U X	RX													0	1	1	0
	NOR	4			1									2	1	1	1
	I/C	1,2,3 5			2,3,4									7	4	4	2
	MAJ	6			6									2	2	2	1
	TS	1,3			2,4,5									5	0	2	2
RO ☐ SRO-I ☐ SRO-U ☐	RX														1	1	0
	NOR														1	1	1
	I/C														4	4	2
	MAJ														2	2	1
	TS														0	2	2

Instructions:

1. Check 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 serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.

2. 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.

3. Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility: Sequoyah Nuclear Plant 1 & 2 Date of Exam: 5/13/2013 Operating Test No.: 2013-301

APPLICANT	EVENT TYPE	Scenarios												TOTAL	MINIMUM(*)		
		1			3												
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U
RO ☐ SRO-I X SRO-U ☐	RX		4											1	1	1	0
	NOR				1									1	1	1	1
	I/C		1,3		2,3,4									5	4	4	2
	MAJ		6,8		5									3	2	2	1
	TS				2,4									2	0	2	2
RO ☐ SRO-I X SRO-U ☐	RX					1								1	1	1	0
	NOR	4												1	1	1	1
	I/C	1,2 3,5				2,4								6	4	4	2
	MAJ	6				6								2	2	2	1
	TS	1,3												2	0	2	2
RO ☐ SRO-I ☐ SRO-U ☐	RX														1	1	0
	NOR														1	1	1
	I/C														4	4	2
	MAJ														2	2	1
	TS														0	2	2
RO ☐ SRO-I ☐ SRO-U ☐	RX														1	1	0
	NOR														1	1	1
	I/C														4	4	2
	MAJ														2	2	1
	TS														0	2	2

Facility: **Sequoyah Nuclear Plant 1 & 2** Date of Examination: **5/13/2013** Operating Test No.: **2013-301**

Competencies	APPLICANTS														
	RO X SRO-I ☐ SRO-U ☐				RO ☐ SRO-I X SRO-U ☐				RO ☐ SRO-I ☐ SRO-U X				RO ☐ SRO-I ☐ SRO-U ☐		
	SCENARIO				SCENARIO				SCENARIO				SCENARIO		
	1	2	3		1	2	3		1	2	3				
Interpret/Diagnose Events and Conditions	1,2, 3,5, 6,7, 8	1,2, 4,5, 6,7	2,3, 4,5, 6,7, 8		1,2, 3,5, 6,7, 8	1,2, 4,5, 6,7	2,3,4, 5,6,7, 8		1,2,3, 5,6,7, 8	1,2,4, 5,6,7	2,3, 4,5, 6,7, 8				
Comply With and Use Procedures (1)	1,2, 3,4, 5,6, 7,8	1,2, 3,4, 5,6, 7	1,2, 3,4, 5,6, 7,8		1,2, 3,4, 5,6, 7,8	1,2, 3,4, 5,6, 7	1,2,3, 4,5,6, 7,8		1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7	1,2, 3,4, 5,6, 7,8				
Operate Control Boards (2)	1,2, 3,4, 5,6, 7,8	1,2, 3,4, 5,6, 7	1,2, 3,4, 6,7, 8		1,3, 4,6, 8	2,3, 5,6, 7	1,2,4, 6,7								
Communicate and Interact	1,2, 3,4, 5,6, 7,8	1,2, 3,4, 5,6, 7	1,2, 3,4, 5,6, 7,8		1,2, 3,4, 5,6, 7,8	1,2, 3,4, 5,6, 7	1,2,3, 4,5,6, 7,8		1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7	1,2, 3,4, 5,6, 7,8				
Demonstrate Supervisory Ability (3)					1,2, 3,4, 5,6, 7,8	1,2, 3,4, 5,6, 7	1,2,3, 4,5,6, 7,8		1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7	1,2, 3,4, 5,6, 7,8				
Comply With and Use Tech. Specs. (3)					1,3	1,2	2,4,5		1,3	1,2	2,4, 5				

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

Instructions:

Check 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: SEQUOYAH Date of Exam: MAY 2013

Tier	Group	RO K/A Category Points												SRO-Only Points		
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	A2	G*	Total
1. Emergency & Abnormal Plant Evolutions	1	3	3	3	N/A			3	3	N/A		3	18	3	3	6
	2	1	1	2				1	2			2	9	2	2	4
	Tier Totals	4	4	5				4	5			5	27	5	5	10
2. Plant Systems	1	3	2	3	2	2	3	3	2	3	3	2	28	3	2	5
	2	1	1	1	1	1	1	1	1	1	1	0	10	MO 2	1	3
	Tier Totals	4	3	4	3	3	4	4	3	4	4	2	38	5	3	8
3. Generic Knowledge and Abilities Categories		1			2			3			4		10	1	2	3	4	7
		2			3			2			3			1	2	2	2	

1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the ATier Totals@ in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ⋈ from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to section D.1.b of ES-401 for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
7. *The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. Refer to section D.1.b of ES-401 for the applicable KAs.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics=importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note # 1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43..

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
007EK1.02	Reactor Trip - Stabilization - Recovery / 1	3.4	3.8	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Shutdown margin
008AK2.01	Pressurizer Vapor Space Accident / 3	2.7	2.7	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Valves
009EK1.02	Small Break LOCA / 3	3.5	4.2	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Use of steam tables
011EG2.1.31	Large Break LOCA / 3	4.6	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to locate control room switches, controls and indications and to determine that they are correctly reflecting the desired plant lineup.
015AG2.1.28	RCP Malfunctions / 4	4.1	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the purpose and function of major system components and controls.
022AK3.05	Loss of Rx Coolant Makeup / 2	3.2	3.4	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Need to avoid plant transients
025AK2.05	Loss of RHR System / 4	2.6	2.6	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Reactor building sump
026AA1.06	Loss of Component Cooling Water / 8	2.9	2.9	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Control of flow rates to components cooled by the CCWS
029EA1.09	ATWS / 1	4	3.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Manual rod control
040AA2.02	Steam Line Rupture - Excessive Heat Transfer / 4	4.6	4.7	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Conditions requiring a reactor trip
054AK1.01	Loss of Main Feedwater / 4	4.1	4.3	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	MFW line break depressurizes the S/G (similar to a steam line break)

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
056AG2.4.4	Loss of Off-site Power / 6	4.5	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.
062AA2.01	Loss of Nuclear Svc Water / 4	2.9	3.5	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Location of a leak in the SWS
065AK3.08	Loss of Instrument Air / 8	3.7	3.9	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Actions contained in EOP for loss of instrument air
077AA1.03	Generator Voltage and Electric Grid Disturbances / 6	3.8	3.7	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Voltatge regulator controls
WE04EA2.2	LOCA Outside Containment / 3	3.6	4.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.
WE05EK2.2	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	3.9	4.2	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems and relations between the proper operation of these systems to the operation of the facility.
WE11EK3.4	Loss of Emergency Coolant Recirc. / 4	3.6	3.8	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
001AA2.05	Continuous Rod Withdrawal / 1	4.4	4.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Uncontrolled rod withdrawal from available indications
032AG2.1.23	Loss of Source Range NI / 7	4.3	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform specific system and integrated plant procedures during all modes of plant operation.
036AK2.02	Fuel Handling Accident / 8	3.4	3.9	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Radiation monitoring equipment (portable and installed)
037AG2.2.44	Steam Generator Tube Leak / 3	4.2	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions
059AK3.01	Accidental Liquid RadWaste Rel. / 9	3.5	3.9	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Termination of a release of radioactive liquid
074EA2.07	Inad. Core Cooling / 4	4.1	4.7	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	The difference between a LOCA and inadequate core cooling from trends and indicators
WE03EK1.1	LOCA Cooldown - Depress. / 4	3.4	4.0	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Components, capacity, and function of emergency systems.
WE14EA1.1	Loss of CTMT Integrity / 5	3.7	3.7	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.
WE15EK3.1	Containment Flooding / 5	2.7	2.9	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Facility operating characteristics during transient conditions, including coolant chemistry and the effects of temperature, pressure and reactivity changes and operating limitations and reasons for these operating characteristics.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
003K6.02	Reactor Coolant Pump	2.7	3.1	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	RCP seals and seal water supply
004A2.06	Chemical and Volume Control	4.2	4.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Inadvertent boration/dilution
004A4.12	Chemical and Volume Control	3.8	3.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Boration/dilution batch control
005A1.03	Residual Heat Removal	2.5	2.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Closed cooling water flow rate and temperature
006K5.05	Emergency Core Cooling	3.4	3.8	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Effects of pressure on a solid system
007A3.01	Pressurizer Relief/Quench Tank	2.7	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Components which discharge to the PRT
007G2.1.20	Pressurizer Relief/Quench Tank	4.6	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to execute procedure steps.
008A3.01	Component Cooling Water	3.2	3.0	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Setpoints on instrument signal levels for normal operations, warnings and trips that are applicable to the CCWS
010K6.01	Pressurizer Pressure Control	2.7	3.1	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Pressure detection systems
010K6.03	Pressurizer Pressure Control	3.2	3.6	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	PZR sprays and heaters
012K2.01	Reactor Protection	3.3	3.7	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	RPS channels, components and interconnections

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
013K4.07	Engineered Safety Features Actuation	3.7	4.1	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Power supply loss
022K4.03	Containment Cooling	3.6	4.0	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Automatic containment isolation
025A4.02	Ice Condenser	2.7	2.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Containment vent fans
026A1.02	Containment Spray	3.6	3.9	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Containment temperature
026K1.01	Containment Spray	4.2	4.2	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	ECCS
039K3.06	Main and Reheat Steam	2.8	3.1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	SDS
039K5.08	Main and Reheat Steam	3.6	3.6	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Effect of steam removal on reactivity
059A3.04	Main Feedwater	2.5	2.6	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Turbine driven feed pump
061K2.01	Auxiliary/Emergency Feedwater	3.2	3.3	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	AFW system MOVs
062A2.09	AC Electrical Distribution	2.7	3.0	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Consequences of exceeding current limitations
063A1.01	DC Electrical Distribution	2.5	3.3	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Battery capacity as it is affected by discharge rate

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
063K3.02	DC Electrical Distribution	3.5	3.7	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Components using DC control power
064K3.03	Emergency Diesel Generator	3.6	3.9	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	ED/G (manual loads)
073K1.01	Process Radiation Monitoring	3.6	3.9	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Those systems served by PRMs
076A4.02	Service Water	2.6	2.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	SWS valves
078G2.4.35	Instrument Air	3.8	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of local auxiliary operator tasks during emergency and the resultant operational effects
103K1.01	Containment	3.6	3.9	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	CCS

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
002K5.07	Reactor Coolant	3.6	3.9	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Reactivity effects of RCS boron, pressure and temperature
015A1.02	Nuclear Instrumentation	3.5	3.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	SUR
016A3.01	Non-nuclear Instrumentation	2.9	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Automatic selection of NNIS inputs to control systems
027K2.01	Containment Iodine Removal	3.1	3.4	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Fans
033A2.01	Spent Fuel Pool Cooling	3.0	3.5	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Inadequate SDM
034K6.02	Fuel Handling Equipment	2.6	3.3	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Radiation monitoring systems
071K3.05	Waste Gas Disposal	3.2	3.2	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	ARM and PRM systems
072A4.01	Area Radiation Monitoring	3.0	3.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Alarm and interlock setpoint checks and adjustments
079K4.01	Station Air	2.9	3.2	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Cross-connect with IAS
086K1.03	Fire Protection	3.4	3.5	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	AFW system

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.15	Conduct of operations	2.7	3.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of administrative requirements for temporary management directives such as standing orders, night orders, Operations memos, etc.
G2.1.43	Conduct of operations	4.1	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to use procedures to determine the effects on reactivity of plant changes
G2.2.22	Equipment Control	4.0	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of limiting conditions for operations and safety limits.
G2.2.42	Equipment Control	3.9	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
G2.2.43	Equipment Control	3.0	3.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the process used to track inoperable alarms
G2.3.11	Radiation Control	3.8	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to control radiation releases.
G2.3.5	Radiation Control	2.9	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to use radiation monitoring systems
G2.4.3	Emergency Procedures/Plans	3.7	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to identify post-accident instrumentation.
G2.4.8	Emergency Procedures/Plans	3.8	4.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of how abnormal operating procedures are used in conjunction with EOPs.
G2.4.9	Emergency Procedures/Plans	3.8	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
007EA2.02	Reactor Trip - Stabilization - Recovery / 1	4.3	4.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Proper actions to be taken if the automatic safety func- tions have not taken place
011EA2.08	Large Break LOCA / 3	3.4	3.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Conditions necessary for recovery when accident reaches stable phase
025AA2.05	Loss of RHR System / 4	3.1	3.5	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Limitations on LPI flow and temperature rates of change
026AG2.4.45	Loss of Component Cooling Water / 8	4.1	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to prioritize and interpret the significance of each annunciator or alarm.
056AG2.2.40	Loss of Off-site Power / 6	3.4	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to apply technical specifications for a system.
062AG2.1.23	Loss of Nuclear Svc Water / 4	4.3	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform specific system and integrated plant procedures during all modes of plant operation.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
003AG2.2.36	Dropped Control Rod / 1	3.1	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions of operations
028AG2.4.47	Pressurizer Level Malfunction / 2	4.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.
068AA2.06	Control Room Evac. / 8	4.1	4.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	RCS pressure
WE10EA2.2	Natural Circ. With Seam Void/ 4	3.4	3.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
003G2.4.11	Reactor Coolant Pump	4.0	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of abnormal condition procedures.
010A2.02	Pressurizer Pressure Control	3.9	3.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Spray valve failures
012A2.05	Reactor Protection	3.1	3.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Faulty or erratic operation of detectors and function generators
025G2.2.25	Ice Condenser	3.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.
073A2.01	Process Radiation Monitoring	2.5	2.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Erratic or failed power supply

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
014A2.04	Rod Position Indication	3.4	3.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Misaligned rod
028A2.03	Hydrogen Recombiner and Purge Control	3.4	4.0	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	The hydrogen air concentration in excess of limit flame propagation or detonation with resulting equipment damage in containment
055G2.4.30	Condenser Air Removal	2.7	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of events related to system operations/status that must be reported to internal orginizations or outside agencies.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.4	Conduct of operations	3.3	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license statur, 10CFR55 etc.
G2.2.17	Equipment Control	2.6	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the process for managing maintenance activities during power operations.
G2.2.36	Equipment Control	3.1	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions of operations
G2.3.6	Radiation Control	2.0	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to aprove release permits
G2.3.7	Radiation Control	3.5	3.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to comply with radiation work permit requirements during normal or abnormal conditions
G2.4.18	Emergency Procedures/Plans	3.3	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the specific bases for EOPs.
G2.4.29	Emergency Procedures/Plans	3.1	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the emergency plan.

Tier / Group	Randomly Selected K/A	Reason for Rejection
RO		
T1G1	056 ~~A1.05~~ AG2.2.4 6/12/13	Unable to write an operationally valid question due to Sequoyah station not having different procedures between units for Loss of Offsite Power. (Rejected and randomly re-selected K/A 056 G2.4.4)
T1G2	059 AK3.02	Unable to write an operationally valid question because the ROs at SQN are not responsible for making E-plan calls. (Rejected and randomly re-selected K/A 059 AK3.01)
T2G1	008 A3.06	Unable to write an operationally valid question due to operators at SQN station not having indications for CCW equipment listed in K/A in the Main Control Room. (Rejected and randomly re-selected K/A 008 A3.01)
T2G1	026 A1.05	Unable to write an operationally valid question due to SQN station not having the equipment listed in the K/A. (Rejected and randomly re-selected K/A 026 A1.02)
T3	G 2.4.26	Unable to write an operationally valid question due to ROs not having any Fire Brigade duties at SQN station. (Rejected and randomly re-selected K/A G 2.4.8)
T1 G2	051 AA1.04	Unable to write an operationally valid question for this K/A due to the separation of Condenser Vacuum and Rod Position Indication. (Rejected and randomly re-selected 032 AG2.1.23

SRO		
T1G2	028 AG2.4.50	Unable to write an operationally valid question at the SRO level (Rejected and randomly re-selected K/A 028 AG2.4.47)
T2G1	003 G2.4.34	Unable to write an operationally valid question due to ROs not having any tasks associated with RCPs after the Main Control Room is abandoned. (Rejected and randomly re-selected K/A 003 G 2.4.11)
	073 A2.03	Unable to write an operationally valid question for this K/A due to not being able to provide sufficient data in stem for operators to determine that an instrument had "drifted" vs "failed". (Rejected and randomly re-selected K/A 073 A2.01)
T2G2	055 G 2.1.31	Unable to write an operationally valid question for this K/A at the SRO level. (Rejected and randomly re-selected K/A 055 G 2.4.30)
T3	G 2.2.3	Unable to write an operationally valid question due not having any valid operational differences in the way the two units are operated. (Rejected and randomly re-selected K/A G 2.2.36)
	G ~~2.4.22~~ 6/14/13 2.4.22	Unable to write an operationally valid question for this K/A at the SRO level. (Rejected and randomly re-selected K/A G 2.4.18)

ES-401 **Written Examination Quality Checklist** **Form ES-401-6**

Facility: **Sequoyah Nuclear Plant 1 & 2** Date of Exam: **05/13/2013** Exam Level: RO X SRO X

	Item Description	Initial a	Initial b*	Initial c#	
1.	Questions and answers are technically accurate and applicable to the facility.	JTB	[illegible]	[illegible]	MM
2.	a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	JTB	[illegible]	[illegible]	MM
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401	JTB	[illegible]	[illegible]	MM
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).	N/A	N/A	[illegible]	MM
5.	Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: __ the audit exam was systematically and randomly developed; or __ the audit exam was completed before the license exam was started; or __ the examinations were developed independently; or X the licensee certifies that there is no duplication; or __ other (explain)	JTB	[illegible]	[illegible]	MM
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.	JTB	[illegible]	[illegible]	MM
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.	JTB	[illegible]	[illegible]	MM
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.	JTB	[illegible]	[illegible]	MM
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.	JTB	[illegible]	[illegible]	MM
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.	JTB	[illegible]	[illegible]	MM
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.	JTB	[illegible]	[illegible]	MM

	Bank	Modified	New
	47 / 8	4 / 5	24 / 12

	Memory	C/A
	32 / 7	43 / 18

	Printed Name / Signature	Date
a. Author	Michael Buckner / [signature]	05/21/13
b. Facility Reviewer (*)	Sam Nakamine / [signature]	05/21/2013
c. NRC Chief Examiner (#)	Daniel M. Bacon / [signature] MICHAEL MEERS / [signature]	05/21/2013
d. NRC Regional Supervisor	MALCOLM T. WIDMAYER / [signature]	05/21/13

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.

ES-401 **Written Examination Review Worksheet** **Form ES-401-9**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation

Instructions

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

1. Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.
2. Enter the level of difficulty (LOD) of each question using a 1 – 5 (easy – difficult) rating scale (questions in the 2 – 4 range are acceptable).
3. Check the appropriate box if a psychometric flaw is identified:
   - The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).
   - The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).
   - The answer choices are a collection of unrelated true/false statements.
   - The distractors are not credible; single implausible distractors should be repaired, more than one is unacceptable.
   - One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).
4. Check the appropriate box if a job content error is identified:
   - The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).
   - The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be known from memory).
   - The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).
   - The question requires reverse logic or application compared to the job requirements.
5. Check questions that are sampled for conformance with the approved K/A and those that are *designated SRO-only* (K/A and license level mismatches are unacceptable).
6. Enter question source: (B)ank, (M)odified, or (N)ew. Check that (M)odified questions meet criteria of ES-401 Section D.2.f.
7. Based on the reviewer's judgment, is the question as written (U)nsatisfactory (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?
8. At a minimum, explain any "U" ratings (e.g., how the Appendix B psychometric attributes are not being met).

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
1	H	2	X	X								Y		M	E	K/A 007EK1.02 1. Q=K/A, Q=RO level 2. Remove the statement “to satisfy shutdown margin”. Not needed for the questions, potential teaching in the statement. 3. Recommend question to be Based on the given conditions, iaw ES 0.1 Emergency boration _____. 4. Last bullet should state Tave is 539 degrees and stable. Remove any question whether temperature “stabilizing” means higher than the emergency boration requirement. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
2	H	2				X						Y		B	E	K/A 008AK2.01 1. Q=K/A, Q=RO level 2. Distracter C and D are in essentially the same location and provide the same thermodynamic properties. With two distracters being the same, a candidate would have a 50/50 pick between A and B. Need to replace C or D with another plausible location. 3. Used on the Watts Bar 08/2010 exam. 04/18/2013 Facility Licensee modified one distracter to provide an alternate location. Q appears SAT at this time.
3	H	2		X		X						Y		B	U	K/A 009EK1.02 1. Q=K/A, Q=RO level 2. The bullet in the initial conditions that states, “the next step is to depressurize the RCS to refill the Pressurizer” needs to be removed. This provides a very good cue to the applicants. The statement “In response to a small break LOCA” can be removed, fact that you are in ES-1.2 gives the same information. 3. The second part of the answer for choices C and D needs to be a full sentence like A and B. 4. Used on the Sequoyah 01/2009 retake exam. 5. Change Tave to Thot due to being in NC. 6. The second part of distracters A and B is not plausible. There is no cause and effect relationship between the cooldown and refilling the Pressurizer. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC, and also modified the second part of distracters A and B. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
4	H	2		X								Y		N	U	K/A 011EG2.1.31 1. Q=K/A, Q=RO level 2. **Overlaps with systems JPM B.** 3. Distracter analysis does not match with initial conditions. 4. Question or JPM needs to be changed Q is U due to excessive overlap with op. test. 04/18/2013 Facility Licensee modified JPM to eliminate overlap as requested by NRC. Q appears SAT at this time. 05/20/2013 Minor typographical change provided to licensee for question statement. Q appears SAT at this time.
5	F	2	X									Y		N	E	K/A 015AG2.1.28 1. Q=K/A, Q=RO level 2. Need to choose different numbers for the second part of the question. AOP-R.04 step 2.2.1.b requires a reactor trip and RCP shutdown if leakoff flow is greater than 8 gpm. The current answer selected is equal to 8 gpm. It could easily be argued that the other distracter is correct. 3. Also need to specify whether or not the reactor trip would be an immediate manual since leakoff flow less than 8 gpm would lead to a shutdown or tripped reactor and securing of the RCP. 4. **Overlaps with SRO question #86** 04/18/2013 Facility Licensee modified Q as requested by NRC. Overlap will be assessed on the SRO question. Q appears SAT at this time. 05/20/2013 No overlap. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
6	H	2	X			X						Y		N	U	K/A 022AK3.05 1. Q=K/A, Q=RO level 2. Choice A is not fully correct. Per AOP-M.09 a reactor trip is required if a reactor shutdown is required or desired. It does not specify for a power reduction. 3. Distracter B does not attempt to answer the question stated in the stem. It is a true/false statement. 4. Distracter D is not plausible because boration for the initial effects of Xenon only accounts for a power change in one direction. 5. Distracter C is not plausible. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee provided completely modified Q to address NRC concerns. Newly modified Q appears SAT at this time. 05/20/2013 Minor typographical changes provided to licensee for initial conditions. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
7	H	2	X									Y		B	E	K/A 025AK2.05 1. Q=K/A, Q=RO level 2. The word containment in the fourth bullet of the initial conditions is missing the letter "e". 3. Need to better specify what procedure is currently in effect, either directly or by providing more conditions. If already exited ES-1.3, EA-63-8 seeks TSC guidance prior to securing pumps. 4. Question used on Sequoyah 01/2008 exam. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Format 2nd bullet in the initial conditions the same as the others 3. Second question statement should have is/are to make all choices grammatically correct. 4. Need to be consisted regarding the nomenclature of containment spray pumps in the stem and answer choices (all Cntmt or all Containment) 5. Need to state in accordance with ES 1.3 for both question statements 05/20/2013 Licensee made necessary corrections. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
8	F	2				X						Y		N	E	K/A 026AA1.06 1. Q=K/A, Q=RO level 2. Plausibility for second part of choices C and D is weak. Why would an operator increase flow with no indication of temperature? Recommend simply asking if a flow rate adjustment is or is not required (not the direction of adjustment), or providing a plausible SFP temperature that is rising in the stem. 04/18/2013 Facility Licensee modified Q as requested by NRC (adjusted yes or no). Q appears SAT at this time. 5/20/2013 Need procedure reference for first part question statement (AOP M.03) and ask what is required to **first** be done vice what will be done. 05/21/2013 Licensee made required changes. Q appears SAT at this time.
9	H	2				X						Y		N	U	K/A 029EA1.09 1. Q=K/A, Q=RO level 2. Distracter C and D are not plausible with rod speed currently at 72 steps/min. Why would FR-S.1 direct lowering the speed of rod insertion? Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q could be evaluated as an E due to ease of fix (change 72 spm to 'maximum rate'). Q appears SAT at this time.
10	H	2	X				X					Y		N	E	K/A 040AA2.02 1. Q=K/A, Q=RO level 2. Need to be more specific in initial conditions and/or stem question to place applicant at a specific step in procedure. Per AOP-S.05, could trip due to personnel safety at 0701. Recommend providing a leak location. 3. Distracter analysis numbers do not match changes of MWe in table. 4. Based on a Tave/Tref calculation (using turbine power since Tref is not provided) the mismatch will be greater than 5 degrees prior to 0703. 04/18/2013 Facility Licensee modified Q as requested by NRC. Modified Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
11	H	2	X			X						Y		M	E	K/A 054AK1.01 1. Q=K/A, Q=RO level 2. Need to place the word “initiate” in front of “SI” in the stem question. 3. Recommend placing a value and increasing for containment pressure in the initial conditions since no indication is given for leak size and an initial value is given for hotwell level. Need to remove slowly from hotwell level decreasing in stem since this makes distracters A and B implausible. The actions stated in the stem question are not required by the AOP until containment pressure approaches 1.5 psig. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Need to remove “will” from the second question statement 3. Recommend using the word lower or decrease versus drop in the second question statement. 4. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 5/20/2013 Licensee made necessary corrections. Q appears SAT at this time.
12	F	2	X			X						Y		N	E	K/A 056G2.4.4 1. Original K/A was rejected and replaced. 2. Q=K/A, Q=RO level 3. Normal and abnormal are not very precise for the second choices. It could be argued that it is abnormal to have any diesels running. Recommend giving the last two bullets for initial conditions and just asking how many or what diesels should be operating. 4. Another option: (1) Entry conditions are met for the following procedure:_____ (2) EDG status <u>is/is not</u> what is expected for the given plant conditions. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
13	H	3	X			X						Y		N	S	K/A 062AA2.01 1. Q=K/A, Q=RO level 2. Are there any sump high level alarms associated with the YARD AREA? 04/18/2013 Facility Licensee provided information as requested by NRC. Q appears SAT at this time w/no modification needed.
14	F	2		X								Y		B	E	K/A 065AK3.08 1. Q=K/A, Q=RO level 2. Q distracters contain 4 independent actions and 4 independent reasons. Due to K/A match concerns, recommend to change question to ask only reasons. Can cut out everything in the distracters before the word “to.” 04/18/2013 Facility Licensee modified Q as requested by NRC. K/A is met because asking overall mitigative strategy implies the reason for taking actions. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Distracter A is not plausible because it is how distracter B is accomplished (or vice versa). Another distracter needs to be selected that controls another pressure or flow. 3. Can you control S/G locally from the AUX Bldg? May or may not be plausible for that reason also. Maybe need to remove the AUX Bldg. from the stem question. 5/20/2013 Licensee made necessary corrections. Q appears SAT at this time.
15	F	2	S									Y		B	S	K/A 077AA1.03 1. Q=K/A, Q=RO level 2. Question used on Sequoyah 09/2010 exam. 3. Add statement in stem that everything is in auto/no equipment out of service. 04/18/2013 Facility Licensee requested to not modify the Q as requested by NRC. Chief Examiner agreed with the lack of change. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
16	F	2				X						Y		B	E	K/A W/E04EA2.2 1. Q=K/A, Q=RO level 2. Question used on Sequoyah 2010 exam. 3. To make second part of distracter A and C plausible (what if pzr level offscale low due to the LOCA?), add "or RVLIS level rising." 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
17	F	2										Y		B	E	K/A W/E05EK2.2 1. Q=K/A, Q=RO level 2. Question used on Sequoyah 02/2010 exam 3. Every system listed in second part of distracters after the first system is unnecessary. Change second part of question to ask whether TDAFW pump or MDAFW pump would be used first. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
18	H	2		X		X						Y		N	U	K/A W/E11EK3.4 1. Q=K/A, Q=RO level 2. RO level because it is only asking major mitigation strategy. 3. The second part answers and distracters contain cues that can be derived from the stem or references. 4. The second part of distracters B and C is not plausible. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
19	H	2	X									Y		N	E	K/A 001AA2.05 1. Q=K/A, Q=RO level 2. Need quotes around all procedure titles (or none). Need to be consistent throughout the exam. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
20	F	2				X						Y		B	U	K/A 036AK2.02 1. Q=K/A, Q=RO level 2. The answer is not totally correct. The AB is evacuated also IAW AOP-M.04. Also, per AOP-M.04 you check vice ensure containment isolation has actuated. 3. It is not plausible to evacuate only non-essential personnel or just the immediate or fuel handling area when the given radiation monitors are in alarm. Also, SFP and Rx Cavity levels have no effect on a dropped assembly. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC and provided a new format to all distracters. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Splitting out the questions is good. 3. Distracters A(1) and D(1) not plausible due to actually dropping a fuel assembly, all three of the monitors are in alarm and no other condition that would bring an automatic isolation into doubt. 4. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 5. Evacuation on previous version is not SRO only. See note on page 12 of 42 of AOP-M.04. 6. Need to specify “manual isolation” in the second part question. Question U due to two non plausible distracters. 5/20/2013 Licensee made necessary corrections. Q appears SAT at this time.
21	F	2	X									Y		N	E	K/A 037AG2.2.44 1. Q=K/A, Q=RO level 2. Need to state what step 1 of AOP-R.01 is in the initial conditions. 3. Need to indicate that normal letdown is in service in the initial conditions. 4. Need to put quotes around the procedure titles. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
22	H	2				X						Y		N	U	K/A 051AA1.04 1. Q=K/A, Q=RO level 2. It is not plausible for generator output to rise if condenser pressure increases. This part is GFES. If testing the effect of turbine control being in IMPOUT, the choices should be lower or none. If applicant incorrectly believed that the turbine controls would adjust to maintain MWe constant, then the choice would be none. 3. Above the POAH with a given steam demand, rod motion maintains temperature vice power. 4. Recommend basing the stem question on the current/given conditions and using full sentences in the stem question. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Still have issue with plausibility of distracter B at this time. Q was tabled, may need another K/A. Randomly selected a new K/A (032 AG 2.1.23). See question 22A.
22A	H	2				X						Y		B	U	05/01/2013 K/A 032 AG2.1.23 1. Q=K/A, Q= RO 2. Distracter A is not plausible. Why would you press reset and start on a SR Audio Count Rate Drawer when no SR instruments are energized. 3. Distracter B is not plausible because there is no switch identified as a source range manual block switch in any of the applicable procedures. 4. Choice C (correct answer) does not identify a switch nomenclature that is used in any of the applicable procedures for this situation. 5. See recommendation provided separately. Question is U due to two non plausible distracters. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Distracters C and D are the same 3. Will discuss plausibility of distracters C(1) and D(1) Question U due to two non plausible distracters 5/20/2013 Facility modified first part question and distracters provided by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
23	F	2	X									Y		M	E	K/A 059AK3.01 1. Original K/A was rejected and replaced. 2. Q=K/A 3. Do not believe the acronym “LCO” is applicable to the ODCM. 4. Question: Is this SRO level knowledge (bases of ODCM)? Question rated as “E” due to information being listed in lesson plan. 04/18/2013 Facility Licensee made slight modification as requested by NRC. Based on licensee input and lesson plan material, Q does not cover SRO-only information. Q appears SAT at this time.
24	H	3										Y		N	E	K/A 074EA2.07 1. Q=K/A, Q=RO level 2. Modify stem to state that “all RCPs are stopped.” 3. Modify second bullet to ensure that FRP monitoring is allowed. The team has made from E-0 to another procedure, etc. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
25	H	2				X						Y		M	U	K/A W/E03EK1.1 1. Not plausible to stop the only running CCP. 2. Not plausible for SCM to remain the same with temperature rising even if pressure had also risen, it is not a linear relationship. 3. Choice B second part states, “the running CPP”. 4. Remove bullet concerning small break LOCA from stem. 5. Put procedure title in quotes. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC, second part distracter modified to choose between “establish normal charging” and “shutdown second SIP.” Q appears SAT at this time.
26	H	2	X									Y		B	E	K/A W/E14EA1.1 1. Q=K/A, Q=RO level 2. Used on Sequoyah 0109 NRC exam. 3. Need to add opened from the MCR to the stem question. 4. Distracter analysis for choice A lists one incorrect valve number. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
27	F	2		X								Y		B	E	K/A W/E15EK3.1 1. Q=K/A, Q=RO level 2. Used on Sequoyah 09/2010 exam 3. Need to remove "the containment sump" from the second part question in the stem. 4. Need to reduce second part answer and distracters to only ensure adequate SDM and determine level of activity. 5. Need to add Which ONE of the following to the beginning of the stem question. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Need to discuss what the two possibly correct answers were. It does not seem right that adding a true statement to the end of each choice would change anything. 3. The question choice formatting needs to be corrected. 4. Recommend basing the question on the given conditions: "Based on the given conditions, which ONE of following completes the statements below? 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.
28	H	2										Y		B	S	K/A 003K6.02 1. Q=K/A, Q=RO level Q appears SAT at this time.
29	H	2	x				x					Y		B	E	K/A 004A2.06 1. Q=K/A, Q=RO level 2. Question used on Watts Bar 10/2011exam. 3. Need to ask the action the RO is required to take in the stem question, 4. Need to add that the instantaneous thermal power (U1118) is below applicable limits to the stem conditions. 5. For second part of B and D, replace initiate normal boration with perform RCS boration using O-SO-62-7. (more closely match procedural action format) 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
30	F	2										Y		N	E	K/A 004A.4.12 1. Q=K/A, Q=RO level 2. Add that the dilution has terminated automatically to the stem. 3. Be clear at which point in the procedural restoration lineup the question is asking. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
31	H	2										N		B	U	K/A 005A1.03 1. Question does not match the K/A. The question does not address closed cooling water (CCS) flow rate or temperature in any way. Q is U due to not meeting the K/A 04/18/2013 Facility Licensee provided a modified Q to address concerns raised by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Need to correct question choice formatting 3. Possibly no correct answer. Per GO-1 the heat exchanger outlet valve is also throttled and a note states that CCS may be throttled. Per RHR lesson plan, these RHR butterfly valves have 500 gpm leak by and CCS may have to be throttled. May need to define the specific time period in the stem question. 4. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
32	H	2					X					Y		B	E	K/A 006K5.05 1. Q=K/A, Q=RO level 2. Used on CPNPP 03/2010 NRC exam. 3. Choice A is also correct and needs to be changed. 4. Replace “affect” in stem with “effect.” 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Distracter D is not plausible. 2. Distracter C is a subset of Distracter D. 3. E-0 does not identify the adverse effect anywhere, it just tells you what to do. 4. If it is identified in EPM-3-E-0, then state that vice E-0 in the stem question. 5. EPM-3-E-0 discusses filling the pressurizer not pressurizing to the PORV setpoint. 6. It is not RO knowledge to be able to cross reference one statement in the EPM to another statement in the WOG Generic Executive Volume. 7. Distracter B is not plausible. Question U due to two non plausible distracters and license level mismatch as written. 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.
33	F	2										Y		B	S	K/A 007A3.01 1. Q=K/A, Q=RO level 2. Used on the Watts Bar 06/2011 exam. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
34	H	2				X	X					Y		B	E	K/A 007G2.1.20 1. Q=K/A, Q=RO level 2. Choice C is partially correct. If temperature did not reduce to less than 120 degrees prior to level reaching 88%, you would stop there then drain some and fill again. An applicant may discount choice D because of knowing you would stop at 88% if the desired reduction in temperature had not yet occurred. Need to tighten up the answer and distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Removed setpoints from the various distracters, opened up the second part Q. Q appears SAT at this time.
35	F	2				X						Y		B	E	K/A 008A3.01 1. Original K/A was rejected and replaced. 2. Q=K/A, Q=RO level 3. The distracters with miniflow valve open are not plausible, because these pumps do not have them. Recommend just removing that portion of the distracter. 4. Remove periods at end of answer and distracters. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
36	H	2	X									Y		N	E	K/A 010K6.01 1. Q=K/A, Q=RO level 2. Recommend adding to the first part question statement: Before any operator actions occur, the failure ____ result in the Pressurizer backup heaters being automatically energized. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
37	H	2		X								Y		B	E	K/A 010K6.03 1. Q=K/A, Q=RO level 2. Used on the Sequoyah 1/2008 NRC exam 3. Remove assume from stem, replace with if. Remove capitalization from no operator actions. 4. For second part question, just ask if reactor automatically trips or does not automatically trip. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
38	F	2										Y		B	E	K/A 012K2.01 1. Q=K/A, Q=RO level 2. Used on the Watts Bar 10/2011 NRC exam. 3. Distracter analysis for choice A has does not indicate that the answer is correct. 4. Question: Is there a difference between a small v and capital V for voltage? Just needs to be a consistent format throughout the exam. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.
39	H	3				X						Y		B	E	K/A 013K4.07 1. Q=K/A, Q=RO level 2. Do not believe it is plausible for both trains of slave relays (ECCS equipment) to actuate when only one train of master relays actuate (choice C). 3. Recommend for stem question: If no operator actions, which ONE of the following identifies how SSPS and ECCS will automatically respond? 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
40	F	2										Y		B	S	K/A 022K4.03 1. Q=K/A, Q=RO level 2. Used on Sequoyah 1/2009 NRC exam. 3. Reviewed lesson plan. There appears to be enough differences in the systems to make choices A and B acceptable as separate distracters. 04/18/2013 Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
41	H	3										Y		M	E	K/A 025A4.02 1. Q=K/A, Q=RO level 2. Recommend only asking if red light is lit or not for second part of question. 3. Recommend using Phase A isolation for distracters on first part choices A and B. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
42	F	2				X		X				Y		B	U	K/A 026A1.02 1. Original K/A was rejected and replaced. 2. Q=K/A, SRO level. 3. 125 °F is not plausible for a containment design temperature. 4. Second part of stem question needs wording at the end corrected. 5. Recommend testing the above the line TS containment temperature requirements for upper and lower containment for the first part question (105 degrees and 125 degrees). This is above the line TS information. Q is U due to more than one non-plausible distracter and license level mismatch. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Need to identify the Tech Spec in the first question statement (3.6.1.5 ……) 3. Based on the distracter analysis provided, B is not the correct answer. The distracter analysis is incorrect. 4. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 5. Need to reformat the first bullet 05/21/2013 Requested that the licensee add the applicable TS name to the first question statement. Facility licensee made changes as requested. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
43	F	2				X						Y		B	E	K/A 026K1.01 1. Q=K/A, Q=RO level 2. Question used on Watts Bar 2006 NRC exam. 3. Choice C is not plausible. It is common knowledge that operating a pump with the suction valve closed will damage the pump. 4. Recommend adding to the stem statement that the valve cannot be opened using the switch in the MCR. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
44	H	3										Y		B	S	K/A 039K3.06 1. Q=K/A, Q=RO level 2. Question used on the Watts Bar 06/2011 NRC exam. 04/18/2013 Q appears SAT at this time.
45	H	2	X			X						Y		B	U	K/A 039K5.08 1. Q=K/A, Q=RO level 2. Choice D distracter analysis states that the MSIVs would eventually close to stop the cool down. If this led to a reactor trip it would be a negative reactivity addition. Need to tighten up the stem question to specify initial effect, etc. Need to specify timing. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
46	H	3				X						Y		B	U	K/A 059A3.04 1. Q=K/A, Q=RO level 2. The distracter analysis for choice A does not make sense. Why would it be plausible to think that you would need to increase output if steam pressure was less? Whether median or average, when the highest number is failed the indicated steam pressure would decrease. 3. Based on choice C distracter analysis, this could possibly be another correct answer or is not plausible. 4. Based on 1-SO-98-1, it would transfer to manual if two of the three instruments failed. If a transfer to manual occurred, would the output remain the same? Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee presented modified Q as requested by NRC with four new distracters (version 546). Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
47	F	2										Y		N	S	K/A 061K2.01 1. Q=K/A, Q=RO level 2. Use upper or lower case V for voltage consistently throughout the exam.
48	H	2	X									Y		B	E	K/A 062A2.09 1. Q=K/A, Q=RO level 2. Add a stem bullet that the unit remains at power. 3. Recommend for second part question: The appropriate procedure does or does not require a manual reactor trip. 4. Need to remove the “s” from recloses in choice C and D. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 3. “Operation of the overcurrent relay will cause” does not need to be in the first question statement since it is stated in the initial conditions 4. Recommend adding “automatically” to the first question statement. 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.
49	F	2				X		X				Y		B	U	K/A 063A1.01 1. Q=K/A, SRO level (coping time/FSAR basis) 2. Choices A and B are not plausible, stripping loads are a major mitigation strategy for ECA 0.0. 3. Recommend asking time for stripping loads for 125 VDC batteries and DC air-side seal oil pump breakers. 4. **Overlap with SRO #99.** Q is U due to more than one non-plausible distracter and license level mismatch. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
50	H	3					X					Y		B	E	K/A 063K3.02 1. Q=K/A, Q=RO level 2. Question used on the Watts Bar 10/2011 exam. 3. Recommend adding information in the stem indicating that a blackout has not occurred. 4. Need to capitalize the S, I in safety injection. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
51	H	3				X						Y		N	U	K/A 064K3.03 1. Q=K/A, Q=RO level 2. Choice A and D not plausible: if MW control works, why would VAR control not work? also if MW control does not work, why would VAR control work? cause/effect relationship? Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee presented a fully modified Q to incorporate NRC comments. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. With changing the SDBD that has the loss of voltage to the opposite train on the other unit, this makes this a simple unit and train separation issue 3. LOD = 1 4. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 5. Need to capitalize “one” in the question statement to be consistent. Question U due to two non plausible distracters and LOD = 1. 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
52	H	2				X						Y		B	U	K/A 073K1.01 1. Q=K/A, Q=RO level 2. Used on the Sequoyah 09/2010 NRC exam. 3. A design resulting in a negative pressure during a high radiation condition is not plausible. The control building ventilation lesson plan states that the system maintains a positive pressure at all times except during a tornado. It does not seem plausible that an Emergency Air **Pressurization** fan would create a negative pressure in the space it is discharging to. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
53	H	2				X			X			Y		N	E	K/A 076A4.02 1. Q=K/A, Q=RO level 2. Need to discuss if knowledge of whether the valve opens at 40 vice 200 rpm is minutia since the D/G immediately accelerates to 400 rpm. The procedure does not discuss valve position versus rpm. 3. Replace ERCW valve with the specific valve nomenclature in second part question. 4. JPM I is an alternate path JPM where this valve fails to open. The procedure that is given for the JPM does not specify the rpm value or shutting down the diesel. 5. Include procedure reference for “normal start”. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Requested minor editorial change on valve nomenclature. Facility licensee made changes as requested. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
54	F	2				X						Y		N	U	K/A 078G2.4.35 1. Q=K/A, Q=RO level 2. Choices A and B do not appear to be plausible. When does a field operator have the capability to reset a phase B signal? Also, nothing in the stem deals with starting or stopping compressors. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
55	F	2				X						Y		N	E	K/A 103K1.01 1. Q=K/A, Q=RO level 2. Based on the A-A cooler being preferred and that the PZR enclosure may heat up if the other three were operating; then even if the A-A tripped and another one was in A-P Auto and auto started, the PZR enclosure would still heat up. This could render the second part of distracters C and D implausible. 3. Recommend asking if the standby cooler would auto start or not. Could specify the switch position. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 3. Based on logic and knowing that one unit has 2 UCCUs and the other has 4 UCCUs and given the fact that two of them are running in the initial conditions, distracters A(2) and B(2) are not plausible. You could never say that there were or were not any additional coolers available to place in service on <u>both</u> units. 4. Question: Is it possible that a loss of all cooling in the lower compartment would not eventually cause an increase in temperature in the upper compartment? This may be a timing issue. Question U due to two non plausible distracters 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
56	F	2										Y		N	E	K/A 002K5.07 1. Q=K/A, Q=RO level 2. In GO-2 step 5.3.[9], you will borate or deborate if ECB does not approximately equal the actual boron concentration. What is the definition of approximately? Need to clarify or this could lead to no correct answer. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Requested minor editorial change on stem statement. Facility licensee made changes as requested. Q appears SAT at this time.
57	F	2										Y		N	E	K/A 015A1.02 1. Q=K/A, Q=RO level 2. Recommend adding a power level to the stem (5 X 10 -4% and rising). 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Requested minor editorial change on stem statement. Facility licensee made changes as requested. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
58	H	3				X						Y		B	U	K/A 016A3.01 1. Q=K/A, Q=RO level 2. Question used on the Watts Bar 06/2011 NRC exam 3. Due to the first part of the stem question noting a larger affect, choices B and D are eliminated as plausible choices. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = RO 2. Recommend basing the question on the given conditions: “Based on the given conditions, which ONE of following completes the statements below? 3. There could be a time issue with this question based on overshoot of level. Recommend adding bullets to the initial conditions that state that charging is in manual and that the failure of a temperature instrument results in a 5% difference between program and actual pressurizer level. Then ask “Based on the given conditions, if no operator actions occurred, WOOTF completes the statements below? 1. The instrument that failed is the _____ . 2. The pressurizer backup heaters _____ be automatically energized. 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
59	F	1				X						Y		B	U	K/A 027K2.01 1. Q=K/A, Q=RO level 2. LOD=1 due to being entirely a train question. How could distracters A, D be plausible even if cross train/cross unit power supplies? Q is U due to more than one non-plausible distracter, LOD=1. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Requested minor editorial change on stem statement. Facility licensee made changes as requested. Q appears SAT at this time.
60	F	2										Y		N	S	K/A 033A2.01 1. Q=K/A, Q=RO level. Q appears SAT at this time.
61	H	2	X									Y		B	E	K/A 034K6.02 1. Q=K/A, Q=RO level 2. Need to specify which technical specification in the stem question. 3. Used on the Sequoyah 1/2009 NRC retake exam. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
62	H	2				X						Y		B	E	K/A 071K3.05 1. Q=K/A, Q=RO level 2. Not plausible for the waste gas radiation monitor to detect the release when it is leaking outside of the tank and there is also no release in progress. 3. What is the document/basis/lesson plan can be used to ensure choice A is the one and only correct answer? 04/18/2013 Facility Licensee significantly modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
63	F	2				X						Y		N	U	K/A 072A4.01 1. Q=K/A, Q=RO level 2. Distracters B(2) and D(2) are not plausible for an area radiation monitor, ARMs do not have any sample flow. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
64	F	2	X									Y		N	E	K/A 079K4.01 1. Q=K/A, Q=RO level 2. Need to remove the extra wording for choices A(1) and C(1) to make the choices symmetrical. This is extra information and provides teaching in the stem. 3. Need to add wording in the second part of the stem questions that specifies if the valve has closed. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
65	F	2										Y		N	S	K/A 086K1.03 1. Q=K/A, Q=RO level 2. Add the procedure reference to the question statement. Q appears SAT at this time.
66	F	2	X					X				Y		B	E	K/A G2.1.15 1. Q=K/A, Question appears SRO level 2. Need to see reference ODM-Y? 3. The stem question needs to be worded to form a complete sentence. Q is U due to license level mismatch. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Requested minor editorial change on stem statement. Facility licensee made changes as requested. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
67	H	4				X						Y		B	U	K/A G2.1.43 1. Q=K/A, Q=RO level 2. The title of the procedure makes the first part of C and D very weakly plausible. 3. The second part of distracter A and C are not plausible. How does rate of power change affect MTC? Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
68	H	2	X									Y		B	E	K/A G2.2.22 1. Q=K/A, Q=RO level 2. Need to adjust the stem question to allow for the multiple number distracters to be grammatically correct if placed in the sentence. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
69	H	2										Y		B	S	K/A G2.2.42 1. Q=K/A, Q=RO level Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
70	H	2										Y		N	E	K/A G2.2.43 1. Q=K/A, Q=RO level 2. Recommend modifications to the Q statement and distracters to reduce the Q to the logical minimums as follows: (1) In accordance with OPDP-4, "Annunciator Disablement," the MINIMUM level of authorization required to disable the nuisance alarm ___(1)___ the Unit Supervisor. (2) In accordance with OPDP-4, it ___(2)___ required to make an entry regarding the annunciator disablement in the narrative log. (1) is/is NOT (2) is/is NOT 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. New question may not be RO level. Declaring an alarm a nuisance alarm appears to be more of an SRO duty per OPDP-4. A lot of evaluation seems to be required. 2. Answer selected for previous question may have been incorrect. Per OPDP-4 the US or SM may sign the sheet, but another portion seems to indicate that SM approval may be required. 3. Recommend asking how disabled annunciator is identified at Sequoyah for one of the questions. Blue dot or orange sticker on window, etc. 05/21/2013 Q appears SAT at this time.
71	H	1				X						Y		B	U	K/A G2.3.11 1. Q=K/A, Q=RO level 2. Distracters not plausible, LOD = 1. Only need to ID ruptured S/G. 3. Need to understand where in the procedure this question is asked to ensure 'B' is the one and only one correct answer; if the operators were in E-3 and had already set the atmospheric valve to the higher setpoint, would they continue to adjust the setpoint higher? Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
72	F	2	X									Y		B	E	K/A G2.3.5 1. Q=K/A, Q=RO level 2. Recommend splitting stem question into two separate questions. 3. Used on the Sequoyah 2/2010 NRC exam. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
73	F	2				X	X					Y		B	E	K/A G2.4.8 1. Original K/A was rejected and replaced. 2. Q=K/A, Q=RO level 3. Used on the Sequoyah 01/2009 exam. 4. Distracter 'A' is a potential correct answer. First part of distracters 'C' and 'D' would need to be enhanced to specify which procedure the team is going to enter. 5. Because the second part distracters are all unique choices, can eliminate the need for the first part question. Better way to ask may be to use specific examples from EPM-4 3.11.7.B asking what are requirements to perform the AOP in ES-0.1? 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Identified during final review that distracter D(2) did not correlate to the stem question. Contacted licensee to make corrections.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
74	H	2	X			X						Y		N	E	K/A G2.4.3 1. Q=K/A, Q=RO level 2. Potential for logical elimination of distracters 'A' and 'C' based upon differences between the pictures' labels and nomenclature. 3. Need to make the picture of 1-PR-1-2 bigger and clearer; it is hard to recognize the boxed "C2" in the corner. Putting the picture on another page is fine. 4. Recommendation: given the change in 3. above, replace the distracters with the following: A. 1-PI-1-2A is a PAM indication. 1-PR-1-2 is NOT a PAM indication. B. 1-PI-1-2A is NOT a PAM indication. 1-PR-1-2 is a PAM indication. C. Both 1-PI-1-2A AND 1-PR-1-2 are PAM indications. D. Neither 1-PI-1-2A NOR 1-PR-1-2 are PAM indications. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Knowledge of FSAR is generally more of an SRO level requirement. 2. Recommend tying question to EPM-4 Section 3.6.2. This is more of an RO requirement (instruments to using while performing EOP actions). 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.
75	H	2	X									Y		B	E	K/A G2.4.9 1. Q=K/A, Q=RO level 2. Need to add to the initial conditions in the stem that one CCP is operating. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
																SRO Questions

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
76	H	2	X			X						Y	N	N	U	K/A 007EA2.02 1. Q=K/A, Question is weak SRO only 2. Question needs to ask what procedure the crew is required to implement. 3. Second part of question is RO level. 4. Distracters A(1) and B(1) are not plausible because yellow path entry is optional. 5. Potential fix: use EA-3-8 procedure for first part distracters 'A' and 'B'? Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
77	H	3	X			X						Y	Y	N	E	K/A 011EA2.08 1. Q=K/A, Q= SRO only 2. Distracter D is non plausible because no time is given post-LOCA. Distracter A is weakly plausible because subcooling is zero. 3. Remove “slowly” from trends in stem conditions. 4. Q, with above recommendations: “Given the following plant conditions: -Unit 2 was operating at 100% power when a LOCA occurred <u>four (4) hours ago.</u> -The operating crew is performing E-1, “Loss of Reactor or Secondary Coolant,” and has reached the step to “MONITOR SI termination criteria.” -Current conditions are: Core Exit T/Cs - 220 °F and stable RCS pressure - 16 psig and stable PZR level - 0% RVLIS Lower Range - 43% and trending up Containment pressure - 5.7 psig and trending down All 4 SG NR levels - 32-34% and stable SG 2, 3, & 4 pressures - 880 psig and stable SG 1 pressure - 820 psig and trending down RWST level - 26% and trending down Which ONE of the following completes the below statement? Based on the above conditions, the Unit Supervisor is required to transition to _____ . A. ES-1.1, “SI Termination” B. E-2, “Faulted Steam Generator” C. ES-1.3, “Transfer to RHR Containment Sump” D. ES-1.4, “Transfer to Hot Leg Recirculation” 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = SRO only 2. The time for the second bullet needs to be 1200. 3. Need to remove reference to fold out page for choice B. Requested minor editorial change on stem statement. Facility licensee made changes as requested. Q appears SAT at this time. 05/21/2013 Requested RCS pressure in initial conditions be changed back to 10# as previously discussed. Facility licensee made changes as requested. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
78	H	3	X									Y	Y	N	E	K/A 025AA2.05 1. Q=K/A, Q= SRO only 2. Minor editorial, change "…and the crew will ___(2)___" to "…and the crew is required to ___(2)___". 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
79	H	2										Y	N	N	U	K/A 026AG2.4.45 1. Q=K/A, Question is not SRO only 2. Question can be answered solely using RO systems knowledge. RO knowledge to know first listed annunciator is CCW system related, off the Train A header. There are no other annunciators or radiation monitors listed in alarm that would imply an RCS (or charging/letdown) system issue. Q is U due to license level mismatch. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
80	H	3	X			X						Y	Y	N	U	K/A 056AG2.2.40 1. Q=K/A, Q= SRO only 2. The question appears to be asking the maximum amount of time that can be taken to get outside of the mode of applicability for the given conditions without restoring compliance. 3. Should give the applicable pages from Unit 2 TS book since the question is being asked for Unit 2 also. 4. Choice B is not plausible because more time is given for Unit 2 which is already in Mode 4. 5. Choice D is not plausible because the same amount of time is given for Unit 2 which is already in Mode 4. 6. Second bullet needs to give a stable RCS temperature instead of stating MODE 4 with a cooldown in progress. 7. Recommendation: use Unit 2 only and come up with four separate plausible times. Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Q = K/A, Q = SRO only 2. Need to take out the time 0700. The time is irrelevant. 3. Need to discuss what the change did and how the previous question was not operationally valid. 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
81	H	2				X						Y	N	M	E	K/A 062AG2.1.23 1. Q=K/A, Question is not SRO only 2. First part of this question can be answered solely by knowing notes and cautions in procedures. ROs are required to know notes and cautions in procedures. ROs are also required to know RED/ORANGE path entry conditions. 3. Distracters A, C NP due to the reactor remaining at power. Q is U due to more than one non-plausible distracter and license level mismatch. 04/18/2013 Facility Licensee discussed Q with NRC. NRC agreed with explanation provided by facility licensee. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Need to remove reason for orange path in FR-S.1 in fourth bullet (IRNI positive startup rate). This provides teaching in the stem. 2. Need to remove the reference to ten minutes in the fourth bullet and add that the crew is at the step for dispatching the AUO in the previous bullet. 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
82	H	2	X	X								Y	Y	N	E	K/A 003AG2.2.36 1. Q=K/A, Q= SRO only 2. The second part question seems to provide a cue for the first part since there is no condition in the initial conditions that would be plausible to prevent recovery within one hour. 3. Need to specify which TS in the stem question. 4. Need to provide references for all > 1 hour TS questions, and ensure the question is not a direct lookup. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q still asks a greater than 1 hour TS action from memory. NRC tabled the Q and will re-attack with another approach. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Distracters A(1) and B(1) are not plausible when given the TS and reading the action statement which specifies the amount of power reduction required from Rated Thermal Power. This is essentially a direct lookup. The difference between current power and RTP and the choices given is 9% in each case. The previously supplied recommendation had a calculation that originated from 1.00 vice 1.02. 2. With the recovery in progress there is the possibility of no correct answer. 3. Need to provide conditions that specify the time till recovery will be accomplished. If it is greater than 24 hrs, will be required to be reduced to less than 50%. Question U due to two non plausible distracters 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
83	H	3				X						Y	Y	N	U	K/A 028AG2.4.50 1. Q=K/A, Q= SRO only 2. Distracter B and C TS 3.0.3 actions (shutdown) are not plausible with only one instrument out of service. 3. Recommend basing the stem question on the current conditions, otherwise the first part of distracters C and D could be correct at a certain time. 4. Without giving the specifics of the first failure, it may not be plausible that the alarm came in for the first failure. 5. Need to provide references for all >1 hour TS questions, and ensure the question is not a direct lookup. Q is U due to more than one non-plausible distracter. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Question no longer meets the K/A. 2. Not operationally valid. Operators not required to remember all instrument numbers specified in TS tables. LOD = 5 3. Too many references 4. **K/A rejected and replaced with K/A 028 AG2.4.4.47** 5. Recommended replacement attached. Question is U due to no longer matching K/A and LOD = 5 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.
84	H	2	X				X					Y	Y	M	E	K/A 068AA2.06 1. Q=K/A, but Q is a weak K/A match on the SRO level. 2. Partial: distracter 'A' is a potentially correct answer because the timing of "prior to the cooldown" is not specific enough. Perhaps give a specific time associated with the first part question? 3. Benefit of doubt given on SRO link to K/A match; first part of the Q can be answered with RO level knowledge. 4. Spelling of "arrise" in the 0500 condition bullet. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
85	H	4				X	X		X			Y	Y	B	U	K/A W/E10EA2.2 1. Q=K/A, Q=SRO only. 2. Distracter B is not plausible because you cannot transition directly from ES-0.1 to ES-0.3. 3. Distracter D is not plausible because the restoration of offsite power is not guaranteed in the stem, and you do not know the leak rate in the CST. 4. As written, 'A' is a subset of 'C' and is potentially a correct answer. 5. Would it be operationally valid to require knowledge of the TS bases to the level of this Q without a reference? Q is U due to more than one non-plausible distracter. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 5/09/2013 Facility requested to modify question following in-office review and validation. Additional comments below reflect the modified questions. 1. Changing the answer to A would indicate that the question no longer matches the K/A 2. Bullet formatting needs to be corrected. 3. Need to explain why the answer changed. Question is U due to no longer matching K/A 05/21/2013 Facility licensee made changes as required. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
86	H	2					X					Y	N	N	U	K/A 003G2.4.11 1. Original K/A was rejected and replaced. 2. Q=K/A, not SRO-only knowledge. First part of Q can be answered with only RO level knowledge due to procedure section titles. 3. Second part of distracters A, B are potentially correct, and not independent of second part of distracters C, D; even if you are going to S/D and stop the pump in 8 hours, wouldn't you also initiate a SR to repair/replace the seal? 4. **There is an overlap issue with this question and question 5 on the RO exam; Q5 gives similar conditions and states that the conditions result in a #2 seal failure.** Q is U due to license level mismatch. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
87	H	2					X					Y	Y	B	E	K/A 010A2.02 1. Q=K/A, Q=SRO only. 2. Need to change the words "ineffective" in both stem questions to "inadequate as defined by E-3" or reword and use the words "not adequate as defined by E-3" in order to match the words in the note and steps in E-3. This could also prevent interpretation problems with the word ineffective. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
88	F	2										Y	Y	B	S	K/A 012A2.05 1. Q=K/A, Q=SRO only Q appears SAT at this time. 05/21/2013 Minor typographical changes provided to licensee for initial conditions and stem questions. Q appears SAT at this time.
89	F	3					X					Y	Y	N	U	K/A 025G2.2.25 1. Q=K/A, Q=SRO only 2. Multiple correct answers. Sodium tetraborate solution assists in maintaining a basic pH of 9.0 to 9.5, which minimizes the occurrence of corrosion. Need to develop another distracter for the second part Q. Q is U due to multiple correct answers. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
90	F	2				X			X			Y	Y	N	E	K/A 073A2.01 1. Original K/A was rejected and replaced. 2. Q=K/A, Q=SRO only based on ODCM actions greater than one hour. 3. First part of Q is RO-level knowledge of automatic rad monitor actions. 4. Need to provide references for all questions asking application of greater than one hour specifications, and ensure that the resulting Q statement does not result in a direct look-up. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
91	H	2	X				X					Y	Y	N	E	K/A 014A2.04 1. Q=K/A, Q=SRO only 2. Grammatically awkward statements in third and fifth bullets, need to make them more clearly stated. Misspelled “conditions” in Q statement. 3. As written, B and D are also potentially correct answers because taking those actions would result in meeting the requirements of the TS LCO. 4. A is a non-plausible distracter. There are no IRPIs in the question that have failed, and TS statements are not written with the first part statements giving a longer completion time than the alternative (or) action. Need to develop a plausible alternative to the ‘A’ distracter. 5. Potential fixes: specifically ask what the TS required action(s) is/are as stated in the TS, instead of what actions are required. Ensure the distracters are all logically independent of each other. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Minor typographical changes provided to licensee for initial conditions. Q appears SAT at this time.
92	H	4										Y	Y	B	S	K/A 028A2.03 1. Q=K/A, Q=SRO only. Q appears SAT at this time. 05/21/2013 Minor typographical changes provided to licensee for initial conditions and stem questions. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
93	F	2		X								Y	Y	N	U	K/A 055G2.4.30 1. Original K/A was rejected and replaced. 2. Q=K/A, Q=SRO only. 3. First part of the Q is RO level knowledge. 4. **Second part of this Q overlaps with Admin JPM SRO A.1.a with notifications—SM is only required to notify Site Ops management and Duty Plant Manager. Need to develop another approach to second part of this Q or the admin JPM.** Q is U due to excessive overlap with op. test. 04/18/2013 Facility Licensee completely changed out the administrative JPM to remove the overlap concern. Q appears SAT at this time. 05/21/2013 Minor typographical changes provided to licensee for the stem statement and stem questions. Q appears SAT at this time.
94	F	3	X									Y	Y	B	E	K/A G2.1.4 1. In second part Q statement, need to change "…Shift Manager shall arrange for…" to "…Shift Manager is required to arrange for…"; recommend underline/bold "maximum" 2. This Q was asked on the Dec 2012 NRC exam. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Minor typographical changes provided to licensee for stem statement. Q appears SAT at this time.
95	H	3						X				Y	Y	B	E	K/A G2.2.17 1. Q=K/A, Q=SRO only 2. Recommend providing entire procedure NPG-SPP-07.3 as a reference for this Q. 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
96	H	3						X	X			Y	Y	M	E	K/A G2.2.36 1. Original K/A was rejected and replaced. 2. Distracter analysis provided for this question does not support A as the correct answer. 3. Need to provide references for all questions asking application of greater than one hour specifications, and ensure that the resulting Q statement does not result in a direct look-up. 4. Potential fix: change second part of Q to ask when the latest time the first performance of O-SI-OPS-082-007.W is required to be completed, and use 1 hr vs. 1.25 hrs as the two distracters (i.e. applying the 25% SR extension frequency). 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
97	H	3				X	X					Y	Y	B	E	K/A G2.3.6 1. Q=K/A, Q=SRO only. 2. Spelling error “addtional” in distracter ‘B’ 3. Partial/cred distracters: C, D are not logically independent of each other and grammatically the “NOT permitted” phrasing does not work with the Q statement. Recommend revising as follows: “Provided ODCM compliance is maintained, this Monitor Tank release is permitted _____ . A. only after the Shift Manager obtains the Operations Superintendent approval B. after the US/SRO grants approval, without any additional signatures/approvals needed. C. only after the contents of the Monitor Tank are reprocessed to lower activity D. only after 0-RM-90-122 has been returned to an OPERABLE status” 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.
98	F	3										Y	Y	M	S	K/A G2.3.7 1. Q=K/A, Q=SRO only Q appears SAT at this time.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
99	H	2	X	X		X						Y	Y	B	E	K/A G2.4.18 1. Original K/A was rejected and replaced. 2. Q=K/A, Q=SRO only. 3. **Overlap: As currently written, Q 99 provides a way to eliminate two distracters of RO Q 49 (the fact that no operator actions would be needed to strip DC busses on ECA-0.0 situation).** 4. Distracter A is not plausible as currently written. The second part Q statement provided a cue that 250V DC loads would be shed using EA-250-2. 5. Need to remove "…when shedding 250V DC loads" from second part Q statement (teaching in stem) 6. Need to remove "…turbine is at zero speed…" from second part distracters B and D to ensure they are the correct choice (procedure mainly discusses turbine heat load) 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time. 05/21/2013 Minor typographical changes provided to licensee for stem statement. Q appears SAT at this time.
100	F	2	X									Y	Y	B	E	K/A G2.4.29 1. Q=K/A, Q=SRO only 2. Need to change "…the SED is to…" to "…the SED is required to…" 3. Recommend change: " … and notification __is/is NOT__ required to be made to the State of Tennessee." for second part of Q. 4. **On p. 21 of NPG-SPP-03.5, which is provided as a reference to Q98, the NOTE following 3.1 B. step 2 provides the answer to the first part of Q100. When this procedure is given as a reference, information from section 3.1 B must be fully redacted [contact examiners if assistance is needed on .pdf redaction].** 04/18/2013 Facility Licensee modified Q as requested by NRC. Q appears SAT at this time.

ES-403	Written Examination Grading Quality Checklist	Form ES-403-1

Facility: **Sequoyah Station Units 1 & 2** Date of Exam: **5/23/13** Exam Level: RO **X** SRO **X**

	Item Description	Initials a	Initials b	Initials c	
1.	Clean answer sheets copied before grading	[illegible]	[illegible]	[illegible]	MM ①
2.	Answer key changes and question deletions justified and documented	N/A	N/A	N/A	N/A
3.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	[illegible]	[illegible]	[illegible]	MM
4.	Grading for all borderline cases (80 ±2% overall and 70 or 80, as applicable, ±4% on the SRO-only) reviewed in detail	[illegible]	[illegible]	[illegible]	MM
5.	All other failing examinations checked to ensure that grades are justified	[illegible]	[illegible]	[illegible]	MM
6.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	[illegible]	[illegible]	[illegible]	MM

	Printed Name/Signature	Date
a. Grader	Michael Buckner / Michael Buck	5/29/13
b. Facility Reviewer(*)	Sam Nakamine / Sam Nak	5/29/13
c. NRC Chief Examiner (*)	Daniel M. Bacon / Daniel M. Bacon	6/3/13 06/06/13
d. NRC Supervisor (*)	MALCOLM T. WIDMANN / [illegible]	06/21/13

(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.

① D. BACON CHIEF EXAMINER UNDER/INSTRUCTION; M. MEEKS CHIEF EXAMINER OF RECORD.