

Facility: <u>BROWNS FERRY</u>		(written) Date of Examination: <u>1-28-15</u>
Developed by: Written: <u>Facility</u> <input checked="" type="checkbox"/> NRC <input type="checkbox"/> // Operating <u>Facility</u> <input checked="" type="checkbox"/> NRC <input type="checkbox"/>		
Target Date*	Task Description (Reference)	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a and b)	BM
-150	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	BM
-150	3. Facility contact briefed on security and other requirements (C.2.c) (8-5-14)	BM
-150	4. Corporate notification letter sent (C.2.d) (8-5-14)	BM
[-120]	5. Reference material due (C.1.e; C.3.c; Attachment 3) (9-29-14)	BM
{-90}	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, ES-401-1/2, ES-401N-1/2, ES-401-3, ES-401N-3, ES-401-4, and ES-401N-4, as applicable (C.1.e and f; C.3.d) (10-20-14)	BM
{-85}	7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e) (11-7-14)	BM
{-60}	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, ES-401N-6, and any Form ES-201-2, ES-201-3, ES-301-1, or ES-301-2 updates), and reference materials due (C.1.e, f, g and h; C.3.d) (12-1-14)	BM
-45	9. Written exam and operating test reviews completed. (C.3.f) (12-11-14)	BM
-30	10. Preliminary license applications (NRC Form 398's) due (C.1.i; C.2.g; ES-202) 12-15-14	BM
-21	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	N/A
-21	12. Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g) (12-11-14)	BM
-14	13. Final license applications due and Form ES-201-4 prepared (C.1.i; C.2.i; ES-202) (1-5-15)	BM
-14	14. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h) 1-26-15 1-14-15	BM
-7	15. Facility licensee management queried regarding the licensee's views on the examination. (C.2.j) (12-11-14)	BM
-7	16. 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) (12-15-14)	BM
-7	17. Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k) 1-27-15	BM
-7	18. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i) 1-19-15	BM
<p>* Target dates are generally based on facility-prepared examinations and are keyed to the examination date identified in the corporate notification letter. They are for planning purposes and may be adjusted on a case-by-case basis in coordination with the facility licensee.</p> <p>[Applies only] {Does not apply} to examinations prepared by the NRC.</p>		

Facility: BFNDate of Examination: 1-19-15

Item	Task Description	Initials		
		a	b*	c#
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	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.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	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 scenarios will not be repeated on subsequent days.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
3. W / T	a. 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	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	b. 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.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	c. 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.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	d. Check for duplication and overlap among exam sections.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	e. Check the entire exam for balance of coverage.	<i>[initials]</i>	<i>11</i>	<i>BLC</i>
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	<i>[initials]</i>	<i>11</i>	<i>BLC</i>

	Printed Name / Signature	Date
a. Author	Michael Barton / <i>[Signature]</i>	1-3-15
b. Facility Reviewer (*)	Keith Nichols / <i>[Signature]</i>	1-3-15
c. NRC Chief Examiner (#)	BRUNO CABALLERO / <i>Bruno Caballero</i>	1-9-15
d. NRC Supervisor	Eugene Guthrie / <i>[Signature]</i>	1/13/15

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

*See'd
1/17/15*

Facility: <u>BFN</u>		Date of Examination: <u>1-19-15</u>		
Item	Task Description	Initials		
		a	b*	c#
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
	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.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	<i>[initials]</i>	<i>[initials]</i>	<i>N-1</i>
	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 scenarios will not be repeated on subsequent days.	<i>[initials]</i>	<i>[initials]</i>	<i>[initials]</i>
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	<i>[initials]</i>	<i>[initials]</i>	<i>[initials]</i>
3. W / T	a. 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	<i>[initials]</i>	<i>[initials]</i>	<i>[initials]</i>
	b. 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.	<i>[initials]</i>	<i>[initials]</i>	<i>[initials]</i>
	c. 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.	<i>[initials]</i>	<i>[initials]</i>	<i>N-1</i>
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
	d. Check for duplication and overlap among exam sections.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
	e. Check the entire exam for balance of coverage.	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	<i>[initials]</i>	<i>[initials]</i>	<i>BN</i>
Printed Name / Signature		Date		
a. Author	Michael Barton / <i>[signature]</i>	1-22-15		
b. Facility Reviewer (*)	Keith Nichols / <i>[signature]</i>	1/22/2015		
c. NRC Chief Examiner (#)	BRUNO CABALLERO / <i>[signature]</i>	1-26-2015		
d. NRC Supervisor	Eugene Guthrie / <i>[signature]</i>	1/26/15		
NOTE: # Independent NRC Reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines.				

N-1: This Form ES-201-2 only applies for the written exam.

ILT 1501

ES-201

Examination Security Agreement

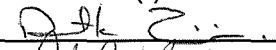

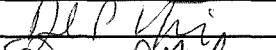
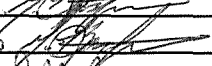
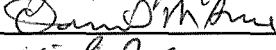
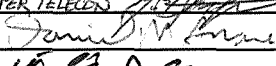
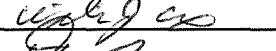
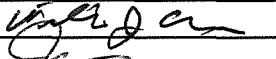


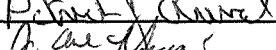
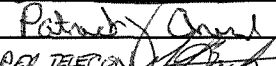
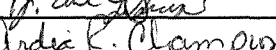
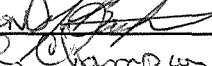
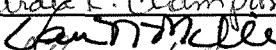

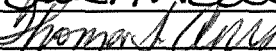
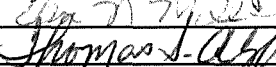
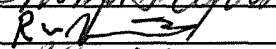
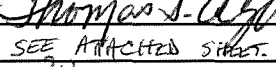
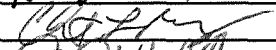


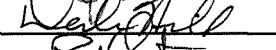
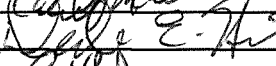
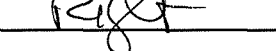
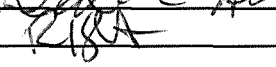

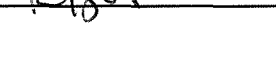
Form ES-201 -3

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 1/20 - 1/30/2015 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 1/20 - 1/30/2015. 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.	DANIEL K. ZIELINSKI	EXAM LEAD		5-5-2014	PER TELECON 	2-11-15	*
2.	DANIEL P. HULGIN	Exam Developer		5-5-2014	PER TELECON 	2-11-15	*
3.	DANIEL M. SVARE	SIM SVCS		5-12-2014		01-30-15	
4.	William J. Cox	SIM SVCS		5-12-2014		02-13-15	
5.	DANIEL P. NEWTON	SIM SVCS		5-12-2014		02-02-15	
6.	Patrick J. Arruda	SIM SVCS		5-12-2014		02-02-15	
7.	Joe Loferski	SIM SVCS		5-12-2014	PER TELECON 	2-18-15	*
8.	Archie R. Champion	SIM SVCS		5-12-14		1-28-15	
9.	Van N. Miller	SIM SVCS		5-12-14		1-29-15	
10.	Thomas S. Albright	SIM SVCS		5-14-14		2-12-15	
11.	Russell Joplin	CORP EXAM MGR		5-19-14	SEE ATTACHED SIGNED	2-17-15	
12.	Christopher L. Berneman	SIM SVCS		6/9/2014		1/30/15	
13.	David McConnell	Exam Developer		6/9/2014		1/28/15	
14.	Dale Hill	Ops Trng		7/21/2014		1/28/15	
15.	RANDY KNIGHT	OPS TRNG		7/23/2014		1/30/15	

NOTES:

* NO LONGER WORKS FOR TVA.

ILT 1501

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 1/20 - 1/30/2015 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 1/20 - 1/30/2015. 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.	Daniel K. Zieunski	Exam LEAD	[Signature]	5-5-2014	Per TELCON [Signature]	2-11-15	*
2.	Daniel P. Hulsin	Exam Developer	[Signature]	5-5-2014	Per TELCON [Signature]	2-11-15	*
3.	Daniel M. Smore	SIM SVCS	[Signature]	5-12-2014	James D. [Signature]	5-30-15	
4.	William J. Cox	SIM SVCS	[Signature]	5-12-2014	[Signature]		2-18-15
5.	DANIEL P. NEWTON	SIM SVCS	[Signature]	5-12-2014	[Signature]	02-02-15	
6.	Patrick J. Arundel	SIM SVCS	[Signature]	5-12-2014	Patrick J. Arundel	02-02-15	
7.	Joe Loforski	SIM SVCS	[Signature]	5-12-2014	[Signature]		2-18-15
8.	Archie R. Champion	SIM SVCS	[Signature]	5-12-14	Archie R. Champion	1-28-15	
9.	Van N. Miller	SIM SVCS	[Signature]	5-12-14	Van N. Miller	1-27-15	
10.	Thomas S. Albright	SIM SVCS	[Signature]	5-14-14	Thomas S. Albright	2-12-15	
11.	Russell Joplin	CORP EXAM MGR	[Signature]	5-19-14	Russell Joplin	2-17-15	
12.	Christopher L. Benjamin	SIM SVCS	[Signature]	6/9/2014	[Signature]	1/30/15	
13.	David McQuinn	Exam Developer	[Signature]	6/9/2014	[Signature]	1/28/15	
14.	Dale Hill	Ops Trng	[Signature]	7/21/2014	Dale E. Hill	1/28/15	
15.	KANDY KNIGHT	OPS TRNG	[Signature]	7/23/2014	[Signature]	1/30/15	

NOTES:

* NO LONGER WORKS FOR TVA

ILT 1501

ES-201

Examination Security Agreement



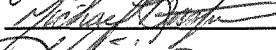
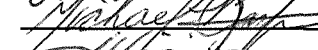



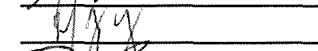

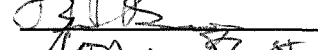
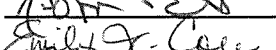

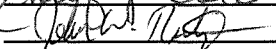
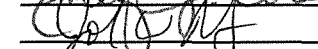
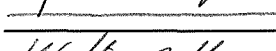




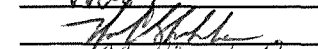
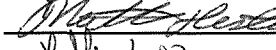
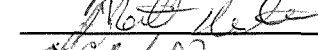
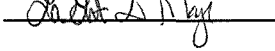
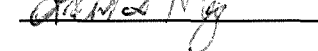




Form ES-201 -3

1. Pre-Examination

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	Allan Fisher	US		7/25/14		2-17-15	
2.	Michael Barton	EXAM LEAD		8-4-14		1-28-15	
3.	Hal J. Higgins	TRNG Supv.		8/4/14		1/28/15	
4.	Keith Nichols	US		8/6/14		1/28/15	
5.	Arthur L. McKelf	RO		9/10/14		2/16/15	
6.	Brandon Shirley	RO		9-10-14		2-13-15	
7.	Tom Bennett	US		9/11/14		2/5/15	
8.	Emily J. Cole	US		9/11/14		2/17/15	
9.	John W. Flindner	SRO		9-11-14		2-13-15	
10.							
11.	WALTER MELLER	SRO		7/17/14		2/13/15	
12.	WILLIAM SCNN	RO		7-18-14		1-29-15	
13.	NEEL SHUKLA	SRO		9/14/14		2/13/15	
14.	Matt Hester	RO		9/18/14		1/30/15	
15.	LaGrant Maye	RO		9/18/14		1/27/15	

NOTES:

1. Pre-Examination

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PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1. Eric Steele	SRO		9/19/14		1/28/15
2. JAROD BRUNSON	SRO		7/16/14		01/29/2015
3. Tina M. Higgins	PO		9-19-14		2-12-15
4. Todd Christensen	SRO		9/24/14		2/12/15
5. James A. Johnson	RO		9/24/14		2/9/15
6. MICHAEL S BROOKS	SRO		9/24/14		1/24/15
7. Nathan L McClellan	RO		9/24/14		2/9/15
8. BRIAN MAZE	SRO		9/24/14		2/9/15
9. Jerry Wheeler, Sr.	RO		9-24-14		2-10-15
10. Chris L. Vaughn	OTM		9/25/14		01/21/15
11. Brian McNiff	SM		9/26/14		1/29/15
12. Chris Young	Ops/Spec/ESons		11/4/14		2/2/15
13. Nathan L Cooper	Staff/Spec/RO		11/22/14		2/2/15
14. Arian Prichard	SRO		11/22/14		1/29/15
15. Drew Mitchell	SRO		11/24/14		2/13/15

NOTES:

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 1-19-15 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.

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PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1. <u>DL HULL</u>	<u>DIRECTOR OF OPS</u>	<u>[Signature]</u>	<u>12-2-14</u>	<u>[Signature]</u>	<u>2-13-15</u>	
2. <u>Eric Reynolds</u>	<u>Reactor Operator</u>	<u>[Signature]</u>	<u>12/15/14</u>	<u>[Signature]</u>	<u>2/9/15</u>	
3. <u>Joseph Higgins</u>	<u>Reactor Operator</u>	<u>[Signature]</u>	<u>12/15/14</u>	<u>[Signature]</u>	<u>2/10/15</u>	
4. <u>Douglas Warren</u>	<u>UNIT SUVR</u>	<u>[Signature]</u>	<u>12/15/14</u>	<u>[Signature]</u>	<u>1/3/15</u>	
5. <u>Bradley D. Holloway</u>	<u>Unit Supervisor</u>	<u>[Signature]</u>	<u>12/16/14</u>	<u>[Signature]</u>	<u>2/11/15</u>	
6. <u>Ricky L. Fugate</u>	<u>Reactor Operator</u>	<u>[Signature]</u>	<u>12-30-14</u>	<u>[Signature]</u>	<u>2-2-15</u>	
7. <u>Eric J. Lambert</u>	<u>Reactor Operator</u>	<u>[Signature]</u>	<u>12-30-14</u>	<u>[Signature]</u>	<u>2-4-15</u>	
8. <u>Wesley Conkle</u>	<u>Unit Supervisor</u>	<u>[Signature]</u>	<u>12-31-14</u>	<u>[Signature]</u>	<u>1/29/15</u>	
9. <u>Thomas Jackle</u>	<u>Unit Supervisor</u>	<u>[Signature]</u>	<u>1-2-15</u>	<u>[Signature]</u>	<u>2/10/15</u>	
10. <u>Jon HENSEL</u>	<u>UNIT SUPERVISOR</u>	<u>[Signature]</u>	<u>1-2-15</u>	<u>[Signature]</u>	<u>2/12-15</u>	
11. <u>Scott Bohling</u>	<u>OPS INSTRUCTOR</u>	<u>[Signature]</u>	<u>1-14-15</u>	<u>[Signature]</u>	<u>2/2-15</u>	
12. <u>Wesley Childers</u>	<u>OPS INSTRUCTOR</u>	<u>[Signature]</u>	<u>1-14-15</u>	<u>[Signature]</u>	<u>1/28/15</u>	
13. <u>Jonathan Duke</u>	<u>Unit Operator</u>	<u>[Signature]</u>	<u>1-8-15</u>	<u>[Signature]</u>	<u>1/30/15</u>	
14. <u>James Dawson Jones</u>						
15. <u>Matthew Steer</u>	<u>Unit Operator</u>	<u>[Signature]</u>	<u>1/30/15</u>			

NOTES:

ILT 1501

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 1/20 - 1/30/2015 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.

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	Alton FISHIE	US	<i>[Signature]</i>	7/25/14	<i>[Signature]</i>	2-17-15	<i>[Signature]</i> 2-12-15
2.	MICHAEL BARTON	EXAM LEAD	<i>[Signature]</i>	8/4/14			
3.	Hol J. Higgins	TRNG Supv	<i>[Signature]</i>	1/4/14			
4.	Keith Nichols	US	<i>[Signature]</i>	8/6/14			
5.	Arthur McKelf	RD	<i>[Signature]</i>	9/10/14			
6.	Brendon Shady	RD	<i>[Signature]</i>	-10-1			
7.	Joe Bennett	US	<i>[Signature]</i>	9/11/14			
8.	Emily T Cole	US	<i>[Signature]</i>	9/11/14			
9.	John W. DINGER	3LO	<i>[Signature]</i>	9/11/14			
10.	MICHAEL D. GIBSON	PEER REVIEWER	<i>[Signature]</i>	9/16/14	PER TELECON <i>[Signature]</i>	2-11-15	*
11.							
12.							
13.							
14.							
15.							

NOTES

* NO LONGER WORKS FOR TVA.




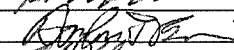
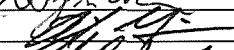
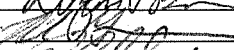
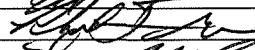
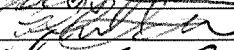
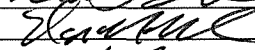
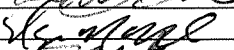
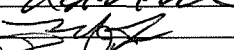
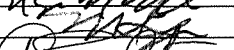
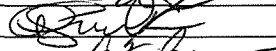
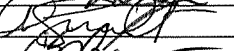
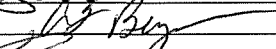

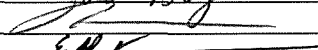
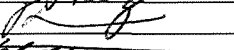
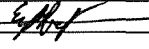
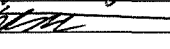
photo copy
RECEIVED BACK
FROM PEER
IN NORTH CAROLINA
via FAX

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1.	BOBBI MILLSAPS	VO		1/18/15		2/3/15	
2.	DOUG PIERCE	INSTRUCTOR		1/19/15		1/28/15	
3.	RICKT GIVENS	INSTRUCTOR		1-19-15		1-28-15	
4.	Phil Irwin	Instructor		1-19-15		1/29/15	
5.	ROGER BOND	INSTRUCTOR		1-19-15		1-29-15	
6.	MICHAEL T HARPE	INSTRUCTOR		1-19-15		1-29-15	
7.	MICHAEL SCHUTE	INSTRUCTOR		1-19-15		1/28/15	
8.	AARON S BERGERON	TRAINING DIRECTOR		1-19-15		2-3-15	
9.	DAVID HUGGINS	INSTRUCTOR		1-21-15		1/28/15	
10.	See S. Galt	VO		2-2-15		1/28 N-1	2-12-15
11.							
12.							
13.							
14.							
15.							

NOTES:

N-1 HAD PREVIOUSLY SIGNED ON 12-30-14

Facility: BFNDate of Examination: 01/19/2015Examination Level: SROOperating Test Number: 1501

Administrative Topic (see Note)	Type Code *	Describe activity to be performed
Conduct of Operations COO-1	D,R	2.1.25: Work Hour Limitations JPM-551 R1
Conduct of Operations COO-2	N,R	2.1.20: Reactor Recirc Pump Start Limitations JPM-639 R0
Equipment Control EC-2	N,R	2.2.25: Perform a Loss of Safety Function Determination JPM 633 R0
Radiation Control RC-1	D,R	2.3.7: Review of radiological survey map JPM-544 R2
Emergency Plan EP-1	D,R	2.4.41 Knowledge of the emergency action level thresholds and classifications JPM-621TC R1
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, Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs and RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected) (S)imulator		

*Rec'd
1/19/15*

Senior Reactor Operator**1. Work Hour Limitations**

- Direct
- NPG-SPP-03.21, Work Hour Limitations
- Determine Work Hour limitation will be exceeded and complete first part of Attachment 2 of NPG-SPP-03.21.
- 2.1.5 Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc. RO 2.9*

2. Determine if a Reactor Recirc Pump can be started (Unit 2 or 3)

- New
- 2/3-SR-3.4.9.3&4, Reactor Recirculation Pump Start Limitations
- Perform 2/3-SR-3.4.9.3&4 and determine that the A Recirc Pump can be started
- 2.1.20 Ability to interpret and execute procedure steps RO 4.6

3. Perform a Loss of Safety Function Determination

- New
- OPDP-8, LCO Tracking
- Perform a Loss of Safety Function Determination for 2-LIS-3-203A and 2-LIS-203C
- 2.2.25 Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits. SRO 4.2

4. Review of radiological survey map to determine if a task can be completed without exceeding exposure limits

- Direct from Bank
- Review of radiological survey map to determine if a task can be completed without exceeding exposure limits.
- 2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions. SRO 3.6

5. Classify the event per REP (Uncontrolled water level decrease in SFSP)

- Direct From Bank
- The event is classified as an ALERT based on uncontrolled water level decrease in spent fuel pool with irradiated fuel assemblies expected to result in irradiated fuel assemblies being uncovered.
- 2.4.41 Knowledge of the emergency action level thresholds and classifications. Importance SRO 4.6

Facility: <u>Browns Ferry NPP</u> Date of Examination: <u>01/19/2015</u> Examination Level: <u>RO</u> Operating Test Number: <u>1501</u>		
Administrative Topic (see Note)	Type Code *	Describe activity to be performed
Conduct of Operations	D,R	2.1.25: Work Hour Limitations JPM – 551 R1
Conduct of Operations	N,R	2.1.20: Reactor Recirc Pump Start Limitations JPM-639 R0
Equipment Control	N,R	2.2.12: 1-SI-4.7.A.2.A Complete Primary Containment Nitrogen Consumption and Leakage Surveillance, evaluate Acceptance Criteria JPM-638 R0
Radiation Control	D,R	2.3.7: Review of radiological survey map JPM-544 R2
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, Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs and RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected) (S)imulator		

Reid
1/7/1

Reactor Operator

1. Work Hour Limitations

- Direct
- NPG-SPP-03.21, Work Hour Limitations
- Determine Work Hour limitation will be exceeded and complete first part of Attachment 2 of NPG-SPP-03.21.
- 2.1.5 Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc. RO 2.9*

2. Determine if a Reactor Recirc Pump can be started (Unit 2 or 3)

- New
- 2/3-SR-3.4.9.3&4, Reactor Recirculation Pump Start Limitations
- Perform 2/3-SR-3.4.9.3&4 and determine that one Recirc Pump can be started
- 2.1.20 Ability to interpret and execute procedure steps RO 4.6

3. Complete Primary Containment Nitrogen Consumption and Leakage Surveillance and evaluate Acceptance Criteria (Unit 1)

- New
- 1-SI-4.7.A.2.A, Primary Containment Nitrogen Consumption and Leakage
- Completes Surveillance and determines that it does meet acceptance criteria.
- 2.2.12 Knowledge of surveillance procedures. RO 3.7

4. Review of radiological survey map to determine if a task can be completed without exceeding exposure limits

- Direct from Bank
- Calculates whole body dose to complete assigned tasks and determines that both the TVA annual limit and the dose margin will be exceeded.
- 2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions. Importance RO 3.5

Facility: Browns Ferry NPPDate of Examination: 1/19/2015Exam Level: ROOperating Test No.: 1501**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. EOI Appendix-3A SLC Injection, Failure of pump flow and discharge pressure. JPM 613 A	A, D, S	1
b. HPCI started in Pressure Control IAW 2/3-EOI Appendix 11C/ Respond to HPCI Steam Leak JPM 627A	L, A, M, E, S	3
c. Place SDC in service IAW 2/3-EOI Appendix 17D JPM 628	N, L, S	4
d. RWM Functional Test for Startup Surveillance JPM 399	D, S	7
e. 2/3-EOI Appendix-13, Emergency Vent JPM 55A	A, D, EN, S	5
f. Restore Offsite Power to 4KV Shutdown Bd 0/3-OI-82 JPM 631	D, S	6
g. Restore Fuel Pool Level with RHRSW JPM 632	D, S	9
h. Injection Sys Lineup - RCIC JPM 18 A	A, D, S	2

In-Plant Systems[@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. Vent Scram Air Header JPM 312	D, R, E	1
j. Stuck open SRV JPM 247A	A, D, R, E	3
k. Reset the Unit 1 Excess Flow Check Valve JPM 636	N, R	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 (C)ontrol room (D)irect from bank (E)mergency or abnormal in-plant (EN)gineered safety feature (L)ow-Power / Shutdown (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams (R)CA (S)imulator	4-6/2-3 $\leq 9 / \leq 8 / \leq 4$ $\geq 1 / \geq 1 / \geq 1$ - / - / ≥ 1 (control room system) $\geq 1 / \geq 1 / \geq 1$ $\geq 2 / \geq 2 / \geq 1$ $\leq 3 / \leq 3 / \leq 2$ (randomly selected) $\geq 1 / \geq 1 / \geq 1$

Rec'd
1/7/15

Control Room Systems:

- a. **Control Room Initiate SLC, Failure of pump flow and discharge pressure. (Unit 2 or 3)**
 - Direct / Simulator /Alternate Path
 - 2-EOI-Appendix 3A complete with SLC injecting to the RPV.
 - 211000 Standby Liquid Control System; A3.08 Ability to monitor automatic operations of the STANDBY LIQUID CONTROL SYSTEM including: System Initiation. IMPORTANCE: RO 4.2 SRO 4.2
 - The Operator starts SLC and recognizes that there is no indication of SLC injection to the vessel. He then starts the other SLC pump.

- b. **HPCI started in Pressure Control IAW 2/3-EOI Appendix-11C/Respond to HPCI Steam Leak (Unit 2 or 3)**
 - Alternate Path / Modified / Simulator / Low Power / Emergency
 - 2/3-EOI Appendix-11C, Alternate Pressure Control System Lineup HPCI / 2/3-ARP-9-3F
 - 206000 High Pressure Coolant Injection System A2.10 Ability to (a) predict the impacts of the following on the HIGH PRESSURE COOLANT INJECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: System Isolation. IMPORTANCE: RO 4.0 SRO 4.1
 - The operator starts HPCI in pressure control IAW 2/3-EOI Appendix-11C. Subsequently, HPCI experiences a failure to isolate when a HPCI Steam Leak develops. The operator must respond IAW 2/3-ARP-9-3F (window 18) and trip HPCI and manually close the HPCI Steam Line inboard and outboard Isolation valves.

- c. **Place RHR in Shutdown Cooling in accordance with EOI Appendix 17D (Unit 2 or 3)**
 - New / Simulator / Low Power
 - 2/3-EOI Appendix-17D, RHR System Operation Shutdown Cooling
 - 205000 Shutdown Cooling System (RHR Shutdown Cooling Mode) A4.01 Ability to manually operate and/or monitor in the control room: SDC/RHR Pumps IMPORTANCE: RO 3.7 SRO 3.7
 - Operator places Loop I of RHR in SDC IAW EOI Appendix 17D.

d. RWM Functional Test for Startup Surveillance (Unit 2 or 3)

- Direct / Simulator
- 2-OI-85
- 201006 Rod Worth Minimizer System A3.01 Ability to monitor automatic operations of the RWM system including: System window and light indication.
IMPORTANCE: RO 4.0 SRO 4.1
- Operator performs RWM Functional Test for Startup Surveillance.

e. 2/3-EOI Appendix-13, Emergency Vent (Unit 2 or 3)

- Alternate Path /Engineered Safety Feature /Direct from Bank /Simulator
- 2/3-EOI Appendix-13, Emergency Venting Primary Containment
- 223001 Primary Containment System and Auxiliaries A2. Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.07 High drywell pressure IMPORTANCE RO 4.2 SRO 4.3
- Operator is directed to emergency vent Primary Containment to restore and maintain Drywell Pressure below 55 psig as directed by 2/3-EOI Appendix-13, Emergency Venting Primary Containment. Emergency Venting of the Suppression Chamber through the Hardened Wetwell Vents will be unsuccessful and the operator will vent the Drywell to Secondary Containment via Primary Containment vent duct failure.

f. Restore Offsite Power to 4KV Shutdown Bd (Unit 2 or 3)

- Direct / Simulator
- 0/3-OI-82, Standby Diesel Generator System
- 264000 Emergency Generators (Diesel/Jet) A2.01 Ability to (a) predict the impacts of the following on the EMERGENCY GENERATORS (DIESEL/JET) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Parallel operation of emergency generator IMPORTANCE: RO 3.5 SRO 3.6
- Operator performs operations necessary to restore offsite power to 4kV SD BD A/3EA.

g. Restore Fuel Pool Level with RHRSW

- Direct / Simulator
- 2/3-AOI-78-1, Fuel Pool Cleanup System Failure
- 233000 Fuel Pool Cooling and Clean-up A2.02 Ability to (a) predict the impacts of the following on Fuel Pool Cooling and Clean-up; and (b) based on those predications, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low pool level IMPORTANCE: RO 3.1 SRO 3.3
- Operator commences to restore Fuel Pool level IAW 2/3-AOI-78-1.

h. RCIC started in RPV level control – 2 EOI-Appendix-5C / Respond to flow controller failure

- Direct from Bank / Simulator / Alternate Path
- 2-EOI-Appendix-5C Injection System Lineup - RCIC
- 217000 Reactor Core Isolation Cooling System A2.11 Ability to predict the impacts of the following on the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC); and based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Inadequate System Flow. IMPORTANCE RO 3.1 SRO 3.2
- Operator starts up RCIC and injects to the RPV. Subsequently, RCIC flow controller fails in automatic and the operator takes manual control to inject to the RPV.

In-Plant Systems:**i. Vent the SCRAM pilot Air Header IAW 1/2/3-EOI Appendix-1B (U1/U2/U3)**

- Direct from Bank / Emergency or Abnormal In-Plant / RCA Entry
- EOI Appendix-1B, Venting and Repressurizing the SCRAM Pilot Air Header
- 201003 Control Rod and Drive Mechanism Ability to (a) predict the impacts of the following on the CONTROL ROD AND DRIVE MECHANISM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.05 Reactor Scram IMPORTANCE RO 4.1 SRO 4.1
- Simulate component manipulations required to vent and subsequently re-pressurize the scram pilot air header as directed by EOI Appendix-1B.

j. Stuck Open SRV 1-22 (Unit 3)

- Direct from Bank / RCA Entry / Emergency or Abnormal In-Plant / Alternate Path
- 3-AOI-1-1 Relief Valve Stuck Open
- 239002 Relief / Safety Valves A2.03 Ability to (a) predict the impacts of the following on the RELIEF/SAFETY VALVES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Stuck open SRV IMPORTANCE: RO 4.1 SRO 4.2
- Operator attempts to close a stuck open SRV from the Remote Shutdown Panel, when that fails the operator opens the supply breakers or removes fuses to remove power from the SRV. The SRV will close when power is removed.

k. Reset the Unit 1 Excess Flow Check Valve

- New / RCA Entry
- 0-OI-32, Control Air System
- 300000 Instrument Air System (IAS) A2. Ability to (a) predict the impacts of the following on the INSTRUMENT AIR SYSTEM and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: A2.01 Air dryer and filter malfunctions IMPORTANCE RO 2.9 SRO 2.8
- Simulates field actions to Reset the Unit 1 Excess Flow Check Valve in accordance with 0-OI-32.

Facility: Browns Ferry NPPDate of Examination: 1/19/2015Exam Level: SROUOperating Test No.: 1501**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
b. HPCI started in Pressure Control IAW 2/3-EOI Appendix 11C/ Respond to HPCI Steam Leak JPM 627A	L, A, M, E, S	3
c. Place SDC in service IAW 2/3-EOI Appendix 17D JPM 628	N, L, S	4
e. 2/3-EOI Appendix-13, Emergency Vent JPM 55A	A, D, EN, S	5

In-Plant Systems[@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

j. Stuck open SRV JPM 247A	A, D, R, E	3
k. Reset the Unit 1 Excess Flow Check Valve JPM 636	N, R	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 (C)ontrol room (D)irect from bank (E)mergency or abnormal in-plant (EN)gineered safety feature (L)ow-Power / Shutdown (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams (R)CA (S)imulator	4-6/2-3 $\leq 9/\leq 8/\leq 4$ $\geq 1/\geq 1/\geq 1$ - / - / ≥ 1 (control room system) $\geq 1/\geq 1/\geq 1$ $\geq 2/\geq 2/\geq 1$ $\leq 3/\leq 3/\leq 2$ (randomly selected) $\geq 1/\geq 1/\geq 1$

Reid
1/1/15

Control Room Systems:**b. HPCI started in Pressure Control IAW 2/3-EOI Appendix-11C/Respond to HPCI Steam Leak (Unit 2 or 3)**

- Alternate Path / Modified / Simulator / Low Power / Emergency
- 2/3-EOI Appendix-11C, Alternate Pressure Control System Lineup HPCI / 2/3-ARP-9-3F
- 206000 High Pressure Coolant Injection System A2.10 Ability to (a) predict the impacts of the following on the HIGH PRESSURE COOLANT INJECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: System Isolation. IMPORTANCE: RO 4.0 SRO 4.1
- The operator starts HPCI in pressure control IAW 2/3-EOI Appendix-11C. Subsequently, HPCI experiences a failure to isolate when a HPCI Steam Leak develops. The operator must respond IAW 2/3-ARP-9-3F (window 18) and trip HPCI and manually close the HPCI Steam Line inboard and outboard Isolation valves.

c. Place RHR in Shutdown Cooling in accordance with EOI Appendix 17D (Unit 2 or 3)

- New / Simulator / Low Power
- 2/3-EOI Appendix-17D, RHR System Operation Shutdown Cooling
- 205000 Shutdown Cooling System (RHR Shutdown Cooling Mode) A4.01 Ability to manually operate and/or monitor in the control room: SDC/RHR Pumps IMPORTANCE: RO 3.7 SRO 3.7
- Operator places Loop I of RHR in SDC IAW EOI Appendix 17D.

e. 2/3-EOI Appendix-13, Emergency Vent (Unit 2 or 3)

- Alternate Path / Engineered Safety Feature / Direct from Bank / Simulator
- 2/3-EOI Appendix-13, Emergency Venting Primary Containment
- 223001 Primary Containment System and Auxiliaries A2. Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.07 High drywell pressure IMPORTANCE RO 4.2 SRO 4.3
- Operator is directed to emergency vent Primary Containment to restore and maintain Drywell Pressure below 55 psig as directed by 2/3-EOI Appendix-13, Emergency Venting Primary Containment. Emergency Venting of the Suppression Chamber through the Hardened Wetwell Vents will be unsuccessful and the operator will vent the Drywell to Secondary Containment via Primary Containment vent duct failure.

j. Stuck Open SRV 1-22 (Unit 3)

- Direct from Bank / RCA Entry / Emergency or Abnormal In-Plant / Alternate Path
- 3-AOI-1-1 Relief Valve Stuck Open
- 239002 Relief / Safety Valves A2.03 Ability to (a) predict the impacts of the following on the RELIEF/SAFETY VALVES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Stuck open SRV IMPORTANCE: RO 4.1 SRO 4.2
- Operator attempts to close a stuck open SRV from the Remote Shutdown Panel, when that fails the operator opens the supply breakers or removes fuses to remove power from the SRV. The SRV will close when power is removed.

k. Reset the Unit 1 Excess Flow Check Valve

- New / RCA Entry
- 0-OI-32, Control Air System
- 300000 Instrument Air System (IAS) A2. Ability to (a) predict the impacts of the following on the INSTRUMENT AIR SYSTEM and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: A2.01 Air dryer and filter malfunctions IMPORTANCE RO 2.9 SRO 2.8
- Simulates field actions to Reset the Unit 1 Excess Flow Check Valve in accordance with 0-OI-32.

Facility: Browns Ferry NPPDate of Examination: 1/19/2015Exam Level: SROIOperating Test No.: 1501**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. EOI Appendix-3A SLC Injection, Failure of pump flow and discharge pressure. JPM 613 A	A, D, S	1
b. HPCI started in Pressure Control IAW 2/3-EOI Appendix 11C/ Respond to HPCI Steam Leak JPM 627A	L, A, M, E, S	3
c. Place SDC in service IAW 2/3-EOI Appendix 17D JPM 628	N, L, S	4
d. RWM Functional Test for Startup Surveillance JPM 399	D, S	7
e. 2/3-EOI Appendix-13, Emergency Vent JPM 55A	A, D, EN, S	5
f. Restore Offsite Power to 4KV Shutdown Bd 0/3-OI-82 JPM 631	D, S	6
g. Restore Fuel Pool Level with RHRSW JPM 632	D, S	9

In-Plant Systems[@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. Vent Scram Air Header JPM 312	D, R, E	1
j. Stuck open SRV JPM 247A	A, D, R, E	3
k. Reset the Unit 1 Excess Flow Check Valve JPM 636	N, R	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	4-6/2-3
(C)ontrol room	
(D)irect from bank	$\leq 9/\leq 8/\leq 4$
(E)mergency or abnormal in-plant	$\geq 1/\geq 1/\geq 1$
(EN)gineered safety feature	- / - / ≥ 1 (control room system)
(L)ow-Power / Shutdown	$\geq 1/\geq 1/\geq 1$
(N)ew or (M)odified from bank including 1(A)	$\geq 2/\geq 2/\geq 1$
(P)revious 2 exams	$\leq 3/\leq 3/\leq 2$ (randomly selected)
(R)CA	$\geq 1/\geq 1/\geq 1$
(S)imulator	

Rec'd
1/17/15

Control Room Systems:

- a. Control Room Initiate SLC, Failure of pump flow and discharge pressure. (Unit 2 or 3)**
- Direct / Simulator /Alternate Path
 - 2-EOI-Appendix 3A complete with SLC injecting to the RPV.
 - 211000 Standby Liquid Control System; A3.08 Ability to monitor automatic operations of the STANDBY LIQUID CONTROL SYSTEM including: System Initiation. IMPORTANCE: RO 4.2 SRO 4.2
 - The Operator starts SLC and recognizes that there is no indication of SLC injection to the vessel. He then starts the other SLC pump.
- b. HPCI started in Pressure Control IAW 2/3-EOI Appendix-11C/Respond to HPCI Steam Leak (Unit 2 or 3)**
- Alternate Path / Modified / Simulator / Low Power / Emergency
 - 2/3-EOI Appendix-11C, Alternate Pressure Control System Lineup HPCI / 2/3-ARP-9-3F
 - 206000 High Pressure Coolant Injection System A2.10 Ability to (a) predict the impacts of the following on the HIGH PRESSURE COOLANT INJECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: System Isolation. IMPORTANCE: RO 4.0 SRO 4.1
 - The operator starts HPCI in pressure control IAW 2/3-EOI Appendix-11C. Subsequently, HPCI experiences a failure to isolate when a HPCI Steam Leak develops. The operator must respond IAW 2/3-ARP-9-3F (window 18) and trip HPCI and manually close the HPCI Steam Line inboard and outboard Isolation valves.
- c. Place RHR in Shutdown Cooling in accordance with EOI Appendix 17D (Unit 2 or 3)**
- New / Simulator / Low Power
 - 2/3-EOI Appendix-17D, RHR System Operation Shutdown Cooling
 - 205000 Shutdown Cooling System (RHR Shutdown Cooling Mode) A4.01 Ability to manually operate and/or monitor in the control room: SDC/RHR Pumps IMPORTANCE: RO 3.7 SRO 3.7
 - Operator places Loop I of RHR in SDC IAW EOI Appendix 17D.

d. RWM Functional Test for Startup Surveillance (Unit 2 or 3)

- Direct / Simulator
- 2-OI-85
- 201006 Rod Worth Minimizer System A3.01 Ability to monitor automatic operations of the RWM system including: System window and light indication.
IMPORTANCE: RO 4.0 SRO 4.1
- Operator performs RWM Functional Test for Startup Surveillance.

e. 2/3-EOI Appendix-13, Emergency Vent (Unit 2 or 3)

- Alternate Path /Engineered Safety Feature /Direct from Bank /Simulator
- 2/3-EOI Appendix-13, Emergency Venting Primary Containment
- 223001 Primary Containment System and Auxiliaries A2. Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.07 High drywell pressure IMPORTANCE RO 4.2 SRO 4.3
- Operator is directed to emergency vent Primary Containment to restore and maintain Drywell Pressure below 55 psig as directed by 2/3-EOI Appendix-13, Emergency Venting Primary Containment. Emergency Venting of the Suppression Chamber through the Hardened Wetwell Vents will be unsuccessful and the operator will vent the Drywell to Secondary Containment via Primary Containment vent duct failure.

f. Restore Offsite Power to 4KV Shutdown Bd (Unit 2 or 3)

- Direct / Simulator
- 0/3-OI-82, Standby Diesel Generator System
- 264000 Emergency Generators (Diesel/Jet) A2.01 Ability to (a) predict the impacts of the following on the EMERGENCY GENERATORS (DIESEL/JET) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Parallel operation of emergency generator IMPORTANCE: RO 3.5 SRO 3.6
- Operator performs operations necessary to restore offsite power to 4kV SD BD A/3EA.

g. Restore Fuel Pool Level with RHRSW

- Direct / Simulator
- 2/3-AOI-78-1, Fuel Pool Cleanup System Failure
- 233000 Fuel Pool Cooling and Clean-up A2.02 Ability to (a) predict the impacts of the following on Fuel Pool Cooling and Clean-up; and (b) based on those predications, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low pool level IMPORTANCE: RO 3.1 SRO 3.3
- Operator commences to restore Fuel Pool level IAW 2/3-AOI-78-1.

In-Plant Systems:**i. Vent the SCRAM pilot Air Header IAW 1/2/3-EOI Appendix-1B (U1/U2/U3)**

- Direct from Bank / Emergency or Abnormal In-Plant / RCA Entry
- EOI Appendix-1B, Venting and Repressurizing the SCRAM Pilot Air Header
- 201003 Control Rod and Drive Mechanism Ability to (a) predict the impacts of the following on the CONTROL ROD AND DRIVE MECHANISM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A2.05 Reactor Scram IMPORTANCE RO 4.1 SRO 4.1
- Simulate component manipulations required to vent and subsequently re-pressurize the scram pilot air header as directed by EOI Appendix-1B.

j. Stuck Open SRV 1-22 (Unit 3)

- Direct from Bank / RCA Entry / Emergency or Abnormal In-Plant / Alternate Path
- 3-AOI-1-1 Relief Valve Stuck Open
- 239002 Relief / Safety Valves A2.03 Ability to (a) predict the impacts of the following on the RELIEF/SAFETY VALVES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Stuck open SRV IMPORTANCE: RO 4.1 SRO 4.2
- Operator attempts to close a stuck open SRV from the Remote Shutdown Panel, when that fails the operator opens the supply breakers or removes fuses to remove power from the SRV. The SRV will close when power is removed.

k. Reset the Unit 1 Excess Flow Check Valve

- New / RCA Entry
- 0-OI-32, Control Air System
- 300000 Instrument Air System (IAS) A2. Ability to (a) predict the impacts of the following on the INSTRUMENT AIR SYSTEM and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: A2.01 Air dryer and filter malfunctions IMPORTANCE RO 2.9 SRO 2.8
- Simulates field actions to Reset the Unit 1 Excess Flow Check Valve in accordance with 0-OI-32.

Facility: <u>BFN</u>		Date of Examination: <u>1-14-15</u>		Operating Test Number: <u>1501</u>	
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).	<u>JA</u>	<u>JA</u>	<u>BAU</u>	
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	<u>JA</u>	<u>JA</u>	<u>BAU</u>	
c.	The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)	<u>JA</u>	<u>JA</u>	<u>BAU</u>	
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	<u>JA</u>	<u>JA</u>	<u>BAU</u>	
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	<u>JA</u>	<u>JA</u>	<u>BAU</u>	
2. Walk-Through Criteria			--	--	--
a.	Each JPM includes the following, as applicable: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> – 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 	<u>JA</u>	<u>JA</u>	<u>BAU</u>	
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.	<u>JA</u>	<u>JA</u>	<u>BAU</u>	
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.			<u>JA</u>	<u>JA</u>	<u>BAU</u>
Printed Name / Signature		Date			
a.	Author <u>MICHAEL BARTEN</u> / <u>[Signature]</u>	<u>1-7-15</u>			
b.	Facility Reviewer(*) <u>Keith Nichols</u> / <u>[Signature]</u>	<u>1-10-15</u>			
c.	NRC Chief Examiner (#) <u>BRUNO CABALLERO</u> / <u>[Signature]</u>	<u>1-12-15</u>			
d.	NRC Supervisor <u>Eugene Gutierrez</u> / <u>[Signature]</u>	<u>1/14/15</u>			
NOTE: * The facility signature is not applicable for NRC-developed tests. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.					

Facility: BFN		Date of Exam: 1-19-15	Scenario Numbers: 2 / 3 / 4	Operating Test No.: 15-01
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.	<i>[Signature]</i>	L1	BNL
2.	The scenarios consist mostly of related events.	<i>[Signature]</i>	L1	BNL
3.	Each event description consists of <ul style="list-style-type: none"> the point in the scenario when it is to be initiated the malfunction(s) that are entered to initiate the event the symptoms/cues that will be visible to the crew the expected operator actions (by shift position) the event termination point (if applicable) 	<i>[Signature]</i>	L1	BNL
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.	<i>[Signature]</i>	L1	BNL
5.	The events are valid with regard to physics and thermodynamics.	<i>[Signature]</i>	L1	BNL
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	<i>[Signature]</i>	L1	BNL
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.	<i>[Signature]</i>	L1	BNL
8.	The simulator modeling is not altered.	<i>[Signature]</i>	L1	BNL
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.	<i>[Signature]</i>	L1	BNL
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.	<i>[Signature]</i>	L1	BNL
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	<i>[Signature]</i>	L1	BNL
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).	<i>[Signature]</i>	L1	BNL
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	<i>[Signature]</i>	L1	BNL
Target Quantitative Attributes (Per Scenario; See Section D.5.d)		Actual Attributes	--	--
1.	Total malfunctions (5-8)	7 / 8 / 8	<i>[Signature]</i>	L1 BNL
2.	Malfunctions after EOP entry (1-2)	2 / 2 / 1	<i>[Signature]</i>	L1 BNL
3.	Abnormal events (2-4)	2 / 2 / 3	<i>[Signature]</i>	L1 BNL
4.	Major transients (1-2)	1 / 1 / 2	<i>[Signature]</i>	L1 BNL
5.	EOPs entered/requiring substantive actions (1-2)	2 / 2 / 2	<i>[Signature]</i>	L1 BNL
6.	EOP contingencies requiring substantive actions (0-2)	1 / 1 / 1	<i>[Signature]</i>	L1 BNL
7.	Critical tasks (2-3)	2 / 3 / 2	<i>[Signature]</i>	L1 BNL

nee'd
1/21/15

Facility: Browns Ferry NPP			Date of Exam: January 2015			Operating			Test No.: ILT 1501									
A P P L I C A N T	E V E N T T Y P E	Scenarios												T O T A L	M I N I M U M (*)			
		Spare (1)			2			3			4							
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION							
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P					
															R	I	U	
RO SRO-I SRO-U #1	RX																	
	NOR				1			1							2			1
	I/C				2,3,4,5,8			3,4,5,6,10							10			2
	MAJ				7			8							2			1
	TS				2, 4			3,5,6							5			2
RO SRO-I SRO-U #2	RX												4		1		1	
	NOR				1			1							2		1	
	I/C				2,3,4,5,8			3,4,5,6,10					1		11		4	
	MAJ				7			8					6		3		2	
	TS				2, 4			3,5,6							5		2	
RO SRO-I SRO-U #2	RX																	
	NOR				1			1							2			1
	I/C				2,3,4,5,8			3,4,5,6,10							10			2
	MAJ				7			8							2			1
	TS				2, 4			3,5,6							5			2

Instructions:

- 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.
- Reactivity manipulations may be conducted under normal or controlled abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Reid
1/7/15

Facility: Browns Ferry NPP			Date of Exam: January 2015			Operating			Test No.: ILT 1501								
APPLICANT	EVENT TYPE	Scenarios												TOTAL	MINIMUM (*)		
		Spare (1)			2			3			4						
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP				
RO #1	RX					4								1	1		
	NOR									1				1	1		
	I/C					6				4,6,10				4	4		
	MAJ					7				8				2	2		
	TS																
RO #2	RX								2					1	1		
	NOR						1							1	1		
	I/C						4,8,9		3,5,7,9					7	4		
	MAJ						5		8					2	2		
	TS																
RO #3	RX					4								1	1		
	NOR									1				1	1		
	I/C					6				4,6,10				4	4		
	MAJ					7				8				2	2		
	TS																
RO #4	RX								2					1	1		
	NOR						1							1	1		
	I/C						4,8,9		3,5,7,9					7	4		
	MAJ						5		8					2	2		
	TS																
RO #5	RX					4								1	1		
	NOR									1			1	2	1		
	I/C					6				4,6,10		2,3,4,5,7,9	10	4			
	MAJ					7				8		4	3	2			
	TS																
RO #6	RX								2					1	1		
	NOR						1						1	1			
	I/C						4,8,9		3,5,7,9				7	4			
	MAJ						5		8				2	2			
	TS																

Instructions:

- 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.
- Reactivity manipulations may be conducted under normal or controlled abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility: <u>BFN</u>		Date of Examination: <u>1-19-15</u>		Operating Test No.: <u>1</u>												
Competencies	APPLICANTS															
	RO <input type="checkbox"/> 1 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> 2 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> 3 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Interpret/Diagnose Events and Conditions	67	367 89			67	367 89	146 810		67	367 89			28 39 5	24 567	23 578 9	
Comply With and Use Procedures (1)	56 7	136 789			56 7	136 789	146 810		56 7	136 789			23 58 9	267 8	23 57 89	
Operate Control Boards (2)	56 79 10	136 79			56 79 10	136 79	146 810		56 79 10	136 79					23 58 9	
Communicate and Interact	256 79 10	136 789			256 79 10	136 789	146 810 235		256 79 10	136 789			All	All	235 789	
Demonstrate Supervisory Ability (3)													59	67		
Comply With and Use Tech. Specs. (3)													23 8	26		
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.

Reid on
12/10/14

Facility: BFA		Date of Examination: 1-19-15		Operating Test No.: 1												
Competencies	APPLICANTS															
	RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Interpret/Diagnose Events and Conditions	2,3 5,8 9	2,4,5 6,7			2,3 5,8 9	2,4 5,6,7										
Comply With and Use Procedures (1)	2,3 5,8 9	2,6,7 9			2,3 5,8 9	2,6,7 9										
Operate Control Boards (2)																
Communicate and Interact	All	All			All	All										
Demonstrate Supervisory Ability (3)	5,9	6,7			5,9	6,7										
Comply With and Use Tech. Specs. (3)	2,3 8	2,6			2,3 8	2,6										
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.

*Rec'd on
12/10/14*

Facility: BFN		Date of Examination: 1-19-15		Operating Test No.: 1												
Competencies	APPLICANTS															
	RO <input checked="" type="checkbox"/> 4 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input checked="" type="checkbox"/> 5 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input checked="" type="checkbox"/> 6 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Interpret/Diagnose Events and Conditions	28 910	456 7			28 910	45 67			28 910	45 67						
Comply With and Use Procedures (1)	12 89	45 67			12 89	45 67			12 89	45 67						
Operate Control Boards (2)	12 89 11	46 7			12 89 11	46 7			12 89 11	46 7						
Communicate and Interact	125 689 11	45 67			12 568 911	45 67			12 568 911	45 67						
Demonstrate Supervisory Ability (3)																
Comply With and Use Tech. Specs. (3)																
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.

*Reid on
12/10/12*

Facility: Browns Ferry		Date of Exam: <u>January 2015</u>																			
Tier	Group	RO K/A Category Points												SRO-Only Points							
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2	G*	Total					
1. Emergency & Abnormal Plant Evolutions	1	4	3	4				3	3				3	20	4	3	7				
	2	1	1	1	N/A			2	0	N/A			2	7	2	1	3				
	Tier Totals	5	4	5				5	3				5	27	6	4	10				
2. Plant Systems	1	3	2	3	2	2	2	3	3	1	3	2	26	3	2	5					
	2	1	1	2	1	1	1	1	1	1	1	1	12	0	2	3					
	Tier Totals	4	3	5	3	3	3	4	4	2	4	3	38	5	3	8					
3. Generic Knowledge and Abilities Categories		1		2		3		4		10		1		2		3		4		7	
		2		3		3		2				2		2		1		2			

Note:

1. *BM* *Q* 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 "Tier Totals" in each K/A category shall not be less than two).
2. *BM* *Q* The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ± 1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. *BM* *Q* 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/evolutions 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. *BM* *Q* 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. *BM* *Q* 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. *BM* *Q* Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- 7.* *BM* *Q* 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 K/As.
8. *BM* *Q* 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. *BM* *Q* 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.

ES-401		BWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO) (SRO)							Form ES-401-1	
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#	
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4					R		(R) AA2.02			
295003 Partial or Complete Loss of AC / 6				R			(R) AA1.02			
295004 Partial or Total Loss of DC Pwr / 6	R						(R) AK1.05			
295005 Main Turbine Generator Trip / 3						R	(R) G2.4.21			
295006 SCRAM / 1		R				S	(R) AK2.06 (S) G2.4.30			
295016 Control Room Abandonment / 7						R	(R) G2.4.45			
295018 Partial or Total Loss of CCW / 8	R						(R) AK1.01			
295019 Partial or Total Loss of Inst. Air / 8			R				(R) AK3.02			
295021 Loss of Shutdown Cooling / 4	R				S		(R) AK1.01 (S) AA2.02			
295023 Refueling Acc / 8	R				S		(R) AK1.03 (S) G2.4.21			
295024 High Drywell Pressure / 5		R					(R) EK2.03			
295025 High Reactor Pressure / 3						R	(R) G2.2.44			
295026 Suppression Pool High Water Temp. / 5			R		S		(R) EK3.04 (S) EA2.03			
295027 High Containment Temperature / 5										
295028 High Drywell Temperature / 5			R		S		(R) EK3.05 (S) EA2.05			
295030 Low Suppression Pool Wtr Lvl / 5				R			(R) EA2.04			
295031 Reactor Low Water Level / 2				R			(R) EA1.04			
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1				R	S		(R) EA1.08 (S) EA2.03			
295038 High Off-site Release Rate / 9		R			S		(R) EK2.02 (S) G2.4.41			
600000 Plant Fire On Site / 8					R		(R) AA2.02			
700000 Generator Voltage and Electric Grid Disturbances / 6			R				(R) AK3.01			
K/A Category Totals:	4	3	4	3	3	3	Group Point Total:		20/7	

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KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
295001AA2.02	Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	3.1	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Neutron monitoring.....
295003AA1.02	Partial or Complete Loss of AC / 6	4.2	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Emergency generators.....
295005G2.4.21	Main Turbine Generator Trip / 3	4.0	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the parameters and logic used to assess the status of safety functions
295006AK2.06	SCRAM / 1	4.2	4.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor power.....
295018AK1.01	Partial or Total Loss of CCW / 8	3.5	3.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Effects on component/system operations.....
295019AK3.02	Partial or Total Loss of Inst. Air / 8	3.5	3.4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standby air compressor operation.....
295021AK1.01	Loss of Shutdown Cooling / 4	3.6	3.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Decay heat.....
295024EK2.03	High Drywell Pressure / 5	3.8	3.8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LPCS: Plant-Specific.....
295026EK3.04	Suppression Pool High Water Temp. / 5	3.7	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SBLC injection.....
295028EK3.05	High Drywell Temperature / 5	3.6	3.7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor SCRAM.....
295030EA2.04	Low Suppression Pool Wtr Lvl / 5	3.5	3.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drywell/ suppression chamber differential pressure: Mark-I&II.....

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
295031EA1.04 295031 EA1.05	Reactor Low Water Level / 2	RO 4.3 SRO 4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High pressure core spray: Plant-Specific..... BFW has no high press core spray New → Reactor Core Isolation System
295037EA1.08	SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1	3.6 3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rod control and information system: Plant-Specific...
600000AA2.02	Plant Fire On Site / 8	2.8 2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damper position
700000AK3.01 AOI-57-IF + ARPs + GOI	Generator Voltage and Electric Grid Disturbances	3.9 4.2 3.6 3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor and Turbine trip criteria 7-22-14 no turb/Rx trip criteria Replaced w/ AK3.02 Actions in ASP for voltage and grid disturbance
295004AK1.05	Partial or Total Loss of DC Pwr / 6	3.3 3.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loss of breaker protection.....
295016G2.4.45	Control Room Abandonment / 7	4.1 4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to prioritize and interpret the significance of each annunciator or alarm.
295023AK1.03	Refueling Acc Cooling Mode / 8	3.7 4.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inadvertent criticality.....
295025G2.2.44	High Reactor Pressure / 3	4.2 4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	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
295038EK2.02	High Off-site Release Rate / 9	3.6 3.8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Offgas system.....

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
295006G2.4.30	SCRAM / 1	2.7	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of events related to system operations/status that must be reported to internal organizations or outside agencies.
295021AA2.02	Loss of Shutdown Cooling / 4	3.4	3.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RHR/shutdown cooling system flow
295023G2.4.21	Refueling Acc Cooling Mode / 8	4.0	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the parameters and logic used to assess the status of safety functions
295026EA2.03	Suppression Pool High Water Temp. / 5	3.9	4.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor pressure.....
295028EA2.05	High Drywell Temperature / 5	3.6	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Torus/suppression chamber pressure: Plant-Specific...
295037EA2.03	SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1	4.3	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SBLC tank level.....
295038G2.4.41	High Off-site Release Rate / 9	2.9	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the emergency action level thresholds and classifications.

ES-401		BWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO/SRO)							Form ES-401-1	
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#	
295002 Loss of Main Condenser Vac / 3						R	(N) 62.4.11			
295007 High Reactor Pressure / 3										
295008 High Reactor Water Level / 2										
295009 Low Reactor Water Level / 2				R			(N) AA1.04			
295010 High Drywell Pressure / 5										
295011 High Containment Temp / 5										
295012 High Drywell Temperature / 5										
295013 High Suppression Pool Temp. / 5										
295014 Inadvertent Reactivity Addition / 1										
295015 Incomplete SCRAM / 1					S		(S) AA2.01			
295017 High Off-site Release Rate / 9	R						(R) AK1.02			
295020 Inadvertent Cont. Isolation / 5 & 7			R				(N) AK3.01			
295022 Loss of CRD Pumps / 1										
295029 High Suppression Pool Wtr Lvl / 5						R	(N) 62.1.7			
295032 High Secondary Containment Area Temperature / 5					S		(S) EA2.02			
295033 High Secondary Containment Area Radiation Levels / 9		R					(N) EK2.01			
295034 Secondary Containment Ventilation High Radiation / 9						S	(S) 62.4.45			
295035 Secondary Containment High Differential Pressure / 5				R			(N) EA1.01			
295036 Secondary Containment High Sump/Area Water Level / 5										
500000 High CTMT Hydrogen Conc. / 5										
K/A Category Point Totals:	1	1	1	2	0	2	Group Point Total:		7/3	

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KA	NAME / SAFETY FUNCTION:	IR	RO	SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
295002G2.4.11	Loss of Main Condenser Vac / 3	4.0	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of abnormal condition procedures.
295009AA1.04	Low Reactor Water Level / 2	2.7	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor water cleanup.....
295017AK1.02	High Off-site Release Rate / 9	3.8	4.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Protection of the general public.....
295020AK3.01	Inadvertent Cont. Isolation / 5 & 7	3.8	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor SCRAM.....
295029G2.1.7	High Suppression Pool Wtr Lvl / 5	4.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.
295033EK2.01	High Secondary Containment Area Radiation Levels / 9	3.8	4.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Area radiation monitoring system.....
295035EA1.01	Secondary Containment High Differential Pressure / 5	3.6	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Secondary containment ventilation system.....

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
295015AA2.01	Incomplete SCRAM / 1	4.1	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor power.....
295032EA2.02	High Secondary Containment Area Temperature / 5	3.3	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Equipment operability.....
295034G2.4.45	Secondary Containment Ventilation High Radiation / 9	4.1	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to prioritize and interpret the significance of each annunciator or alarm.

ES-401														BWR Examination Outline Plant Systems - Tier 2/Group 1 (RO/SRO)														Form ES-401-1	
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#															
203000 RHR/LPCI: Injection Mode											R S	(R) 62.2.38 (S) 62.2.39																	
205000 Shutdown Cooling						R						(R) K6.04																	
206000 HPCI		R										(R) K2.04																	
207000 Isolation (Emergency) Condenser																													
209001 LPCS						R				R		(R) A4.03 (R) K6.04																	
209002 HPCS																													
211000 SLC								R				(R) A2.05																	
212000 RPS								R				(R) A2.21																	
215003 IRM	R			R								(R) K1.02 (R) K4.04																	
215004 Source Range Monitor					R		R				S	(R) A1.05 (R) K5.03	(S) 62.4.47																
215005 APRM / LPRM				R				S				(R) K4.01	(S) A2.04																
217000 RCIC	R											(R) K1.04																	
218000 ADS					R			S				(R) K5.01	(S) A2.02																
223002 PCIS/Nuclear Steam Supply Shutoff								S			R	(R) 62.1.7	(S) A2.04																
239002 SRVs			R						R			(R) A3.02 (R) K3.03																	
259002 Reactor Water Level Control			R					R				(R) A2.04 (R) K3.03																	
261000 SGTS							R					(R) A1.02																	
262001 AC Electrical Distribution		R										(R) K2.01																	
262002 UPS (AC/DC)										R		(R) A4.01																	
263000 DC Electrical Distribution	R											(R) K1.01																	
264000 EDGs							R					(R) A1.01																	
300000 Instrument Air										R		(R) A4.01																	
400000 Component Cooling Water			R									(R) K3.01																	
K/A Category Point Totals:	3	2	3	2	2	2	3	3	1	3	2	Group Point Total:		26/5															

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KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
203000G2.2.38	RHR/LPCI: Injection Mode	3.6	4.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of conditions and limitations in the facility license.
205000K6.04	Shutdown Cooling	3.6	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor water level
206000K2.04	HPCI	2.5	2.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Turbine control circuits: BWR-2,3,4
209001A4.03	LPCS	3.7	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Injection valves
209001K6.04	LPCS	2.8	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D.C. power
211000A2.05	SLC	3.1 3.6	3.4 3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loss of SBLC tank heaters. Discriminating RO question goes to SMO Tech Specs or annunciator setpoint (minutes). AZ.02 Failure of explosive JMW to fire
212000A2.21	RPS	3.6	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Failure of individual relays to reposition: Plant- Specific
215003K1.02	IRM	3.6	3.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor manual control
215003K4.04	IRM	2.9	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Varying system sensitivity levels using range switches
215004A1.05	Source Range Monitor	3.6	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SCRAM, rod block, and period alarm trip setpoints
215004K5.03	Source Range Monitor	2.8	2.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Changing detector position

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
215005K4.01	APRM / LPRM	3.7	3.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rod withdrawal blocks
217000K1.04	RCIC	2.6	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Main condenser
218000K5.01	ADS	3.8	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ADS logic operation
223002G2.1.7	PCIS/Nuclear Steam Supply Shutoff	4.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.
239002A3.02	SRVs	4.3	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SRV operation on high reactor pressure
239002K3.03	SRVs	4.3	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ability to rapidly depressurize the reactor
259002A2.04	Reactor Water Level Control	3.0	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RFP runout condition: Plant-Specific
259002K3.03	Reactor Water Level Control	2.7	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rod worth minimizer: Plant-Specific
261000A1.02	SGTS	3.1	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Primary containment pressure
262001K2.01	AC Electrical Distribution	3.3	3.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Off-site sources of power
262002A4.01	UPS (AC/DC)	2.8	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Transfer from alternative source to preferred source

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
263000K1.01	DC Electrical Distribution	3.3	3.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A.C. electrical distribution
264000A1.01	EDGs	3.0	3.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lube oil temperature
300000A4.01	Instrument Air	2.6	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure gauges
400000K3.01	Component Cooling Water	2.9	3.3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loads cooled by CCWS

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
203000G2.2.39	RHR/LPCI: Injection Mode	3.9	4.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of less than one hour technical specification action statements for systems. <i>Ability to determine operability and/or avail of safety.</i>
6/9/14	G.2.2.37	3.6/4.6												
215004G2.4.47	Source Range Monitor	4.2	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.
215005A2.04	APRM / LPRM	3.8	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SCRAM trip signals
218000A2.02	ADS	3.5	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Large break LOCA
223002A2.04	PCIS/Nuclear Steam Supply Shutoff	2.9	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Process <u>radiation monitoring system</u> failures
9/16/14	A2.07	2.7/2.9												Basis: MSL rad monitors are the only PCIS/NSSS rad. monitors and they cause no isolations.
Q#90														

ES-401		BWR Examination Outline Plant Systems - Tier 2/Group 2 (RO, SRO)												Form ES-401-1	
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#	
201001 CRD Hydraulic								S				(S) A2.08			
201002 RMCS															
201003 Control Rod and Drive Mechanism															
201004 RSCS															
201005 RCIS															
201006 RWM							R					(R) A2.05			
202001 Recirculation							R					(R) A1.07			
202002 Recirculation Flow Control															
204000 RWCU															
214000 RPIS															
215001 Traversing In-core Probe	R										S	(R) K1.02 (S) G2.1.20			
215002 RBM															
216000 Nuclear Boiler Inst.															
219000 RHR/LPCI: Torus/Pool Cooling Mode															
223001 Primary CTMT and Aux.						R						(R) K6.10			
226001 RHR/LPCI: CTMT Spray Mode			R									(R) K3.02			
230000 RHR/LPCI: Torus/Pool Spray Mode	R											(R) K2.02			
233000 Fuel Pool Cooling/Cleanup									R			(R) A4.05			
234000 Fuel Handling Equipment															
239001 Main and Reheat Steam				R								(R) K4.05			
239003 MSIV Leakage Control															
241000 Reactor/Turbine Pressure Regulator															
245000 Main Turbine Gen. / Aux.															
256000 Reactor Condensate											R	(R) G2.2.4			
259001 Reactor Feedwater															
268000 Radwaste															
271000 Offgas			R									(R) K3.02			
272000 Radiation Monitoring								S				(S) A2.02			
286000 Fire Protection															
288000 Plant Ventilation															
290001 Secondary CTMT															
290003 Control Room HVAC									R			(R) A3.02			
290002 Reactor Vessel Internals					R							(R) K5.03			
K/A Category Point Totals:	1	1	2	1	1	1	1	1	1	1	1	Group Point Total:		12/3	

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
201006A2.05	RWM	3.1	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Out of sequence rod movement; P-Spec(Not-BWR6)
202002A1.07	Recirculation Flow Control	3.1	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recirculation loop flow: Plant-Specific
215001K1.02	Traversing In-core Probe	2.5	3.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Process computer: (Not-BWR1)
223001K6.10	Primary CTMT and Aux.	3.0	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Containment vacuum relief system: Mark-III BFW is Mark I, Mark III N/A Drywell vacuum relief system
226001K3.02	RHR/LPCI: CTMT Spray Mode	3.5	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Containment/drywell/suppression chamber temperature
230000K2.02	RHR/LPCI: Torus/Pool Spray Mode	2.8	2.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pumps
233000A4.05	Fuel Pool Cooling/Cleanup	2.7	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pool temperature
239001K4.05	Main and Reheat Steam	3.1	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Steam flow measurement
256000G2.2.4	Reactor Condensate	3.6	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility.
271000K3.02	Offgas	3.3	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Off-site radioactive release rate
290002K5.03	Reactor Vessel Internals	2.7	3.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Burnable poisons

KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

RO SRO

290003A3.02 Control Room HVAC

3.0 3.4

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ ☐ ☐

Initiation/failure of fire protection system

7-22-14

There is no initiation

6

8/6/14
No automatic
operator or interlock
features associated
w/ CR HVAC
and Fire Prot.

Fire Detection
initiates
preaction
sprinkler

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
201001A2.08	CRD Hydraulic	2.8	2.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inadequate system flow
215001G2.1.20	Traversing In-core Probe	4.6	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to execute procedure steps.
272000A2.02	Radiation Monitoring	3.3	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor protection system power failure

Facility: Browns Ferry		Date of Exam:				
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1. 19	Ability to use plant computers to evaluate sys or comp status	3.9	1		
	2.1. 6	Ability to manage the control crew during plant transients	3.8	1		
	2.1.					
	2.1. 34	Knowledge of primary and secondary plant chemistry limits			3.5	1
	2.1. 7	Ability to evaluate plant perf and make operational judgments			4.7	1
	2.1.					
	Subtotal			2		2
2. Equipment Control	2.2. 17	Knowledge of the process for managing maintenance activities	2.6	1		
	2.2. 2	Ability to manipulate the console controls as required	4.6	1		
	2.2. 40	Ability to apply Technical Specifications for a system	3.4	1		
	2.2.					
	2.2. 19	Knowledge of maintenance work order requirements			3.4	1
	2.2. 21	Knowledge of pre- and post-maintenance operability requirements			4.1	1
	Subtotal			3		2
3. Radiation Control	2.3. 11	Ability to control radiation releases	3.8	1		
	2.3. 15	Knowledge of radiation monitoring systems	2.9	1		
	2.3. 7	Ability to comply with RWP requirements	3.5	1		
	2.3.					
	2.3. 14	Knowledge of radiation or contamination hazards			3.8	1
	2.3.					
	Subtotal			3		1
4. Emergency Procedures / Plan	2.4. 29	Knowledge of the emergency plan	3.1	1		
	2.4. 5	Knowledge of the organization of the operating proc network	3.7	1		
	2.4.					
	2.4. 11	Knowledge of abnormal condition procedures			4.2	1
	2.4. 29	Knowledge of the emergency plan			4.4	1
	2.4.					
	Subtotal			2		2
Tier 3 Point Total				10		7

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
G2.1.19	Conduct of operations	3.9	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to use plant computer to evaluate system or component status.
G2.1.6	Conduct of operations	3.8	4.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to manage the control room crew during plant transients.
G2.2.17	Equipment Control	2.6	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the process for managing maintenance activities during power operations.
G2.2.2	Equipment Control	4.6	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.
G2.2.40	Equipment Control	3.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to apply technical specifications for a system.
G2.3.11	Radiation Control	3.8	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to control radiation releases.
G2.3.15	Radiation Control	2.9	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiation monitoring systems
G2.3.7	Radiation Control	3.5	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to comply with radiation work permit requirements during normal or abnormal conditions
G2.4.29	Emergency Procedures/Plans	3.1	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the emergency plan.
G2.4.5	Emergency Procedures/Plans	3.7	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the organization of the operating procedures network for normal, abnormal and emergency evolutions.

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
G2.1.34	Conduct of operations	2.7	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of primary and secondary chemistry limits
G2.1.7	Conduct of operations	4.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.
G2.2.19	Equipment Control	2.3	3.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of maintenance work order requirements.
G2.2.21	Equipment Control	2.9	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of pre- and post-maintenance operability requirements.
G2.3.14	Radiation Control	3.4	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities
G2.4.11	Emergency Procedures/Plans	4.0	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of abnormal condition procedures.
G2.4.29	Emergency Procedures/Plans	3.1	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the emergency plan.

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Reid
1/7/15

Facility: Brown's Ferry Nuclear Plant		Date of Exam: 1/19/2015		Exam Level: RO ■ SRO ■																
Item Description			Initial																	
			a	b*	c*															
1.	Questions and answers are technically accurate and applicable to the facility.		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
2.	a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
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).		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
5.	Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input type="checkbox"/> the audit exam was systematically and randomly developed; or <input checked="" type="checkbox"/> the audit exam was completed before the license exam was started; or <input type="checkbox"/> the examinations were developed independently; or <input type="checkbox"/> the licensee certifies that there is no duplication; or <input type="checkbox"/> other (explain)		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
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.	<table border="1"> <tr> <td>RO/SRO</td> <td>RO/SRO</td> <td>RO/SRO</td> </tr> <tr> <td>Bank</td> <td>Modified</td> <td>New</td> </tr> <tr> <td>29% / 28%</td> <td>6% / 20%</td> <td>64% / 60%</td> </tr> <tr> <td>21 / 6</td> <td>5 / 5</td> <td>48 / 15</td> </tr> <tr> <td>22 / 5</td> <td></td> <td></td> </tr> </table>	RO/SRO	RO/SRO	RO/SRO	Bank	Modified	New	29% / 28%	6% / 20%	64% / 60%	21 / 6	5 / 5	48 / 15	22 / 5			<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
RO/SRO	RO/SRO	RO/SRO																		
Bank	Modified	New																		
29% / 28%	6% / 20%	64% / 60%																		
21 / 6	5 / 5	48 / 15																		
22 / 5																				
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.	<table border="1"> <tr> <td>Memory</td> <td>C/A</td> </tr> <tr> <td>RO/SRO</td> <td>RO/SRO</td> </tr> <tr> <td>52 / 28</td> <td>48 / 72</td> </tr> <tr> <td>(9%)</td> <td>(9%)</td> </tr> </table>	Memory	C/A	RO/SRO	RO/SRO	52 / 28	48 / 72	(9%)	(9%)	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>							
Memory	C/A																			
RO/SRO	RO/SRO																			
52 / 28	48 / 72																			
(9%)	(9%)																			
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
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.		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
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.		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>															
a. Author		Printed Name / Signature	Date																	
b. Facility Reviewer (*)		Michael Barton / <i>[Signature]</i>	1-22-15																	
c. NRC Chief Examiner (#)		Keith Nichols / <i>[Signature]</i>	1/22/2015																	
d. NRC Regional Supervisor		BRUNO CABALLERO / <i>[Signature]</i>	1-26-15																	
		Eugene Guthrie / <i>[Signature]</i>	1/26/15																	
Note: * The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.																				

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
			These are the comments that BFN received back from NRC Bruno Caballero 9-2-14													8-20-14: Licensee provided 10 sample (early) questions (5 RO + 5 SRO) for review. One RO and Two SRO questions were unacceptable.
Gen			NRC Review comments													Gen For Tech Spec questions, instead of duplicating Required Conditions (A.1, C.2, etc.) with words in each choice, use the alphanumeric designator when the reference is already being provided as a reference.
Gen			MAB Review comments Keith Nichols comments													Gen For Tech Spec questions, in the stem, use a timeline. This broadens the possibilities for the four choices and ensures each choice is plausible.
Gen																Gen Whenever possible; write the question so that a reference is not required to be provided to the applicants. Refer to OL Feedback Item 401.53. Try to only target 5 to 6 SRO questions where a reference is needed. Almost always the EPIP-1 and offsite agency notification procedure are two references that a need exists for on the SRO portion.
																RO DRAFT EXAM SUBMITTAL (preliminary) RESULTS: There were 15 unacceptable questions (20%): <ul style="list-style-type: none"> Cred Dist: 5, 14, 18, 19, 26, 42, 56, 63, 68, 72, 73 Q=K/A: 8, 24, 25, 71
																SRO DRAFT EXAM SUBMITTAL (preliminary) RESULTS: There were 7 unacceptable questions (28%): <ul style="list-style-type: none"> Cred Dist: 78, 87, 93, 97 <input type="checkbox"/> SRO-only: 85, 94, 95

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. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
1	H	2		x			x			x				M	E	<p>T1G1 295001 AA2.02 2011 NRC Exam Q#76</p> <p>1. Partial: If power rise is due to thermal hydraulic oscillations, then OPRMs initiate scram instead of APRMs and there is no correct answer. If power rise is for some other reason, then that premise may not be operationally valid.</p> <p>2. Cue: The phrase "Input into the APRMS" in the 1st bullet is not necessary to elicit the correct response. Provide the core flow value.</p> <p>3. #/units: The "w" value is obtained by summing up the flow calculated from two flow transmitter signal inputs (Recirculation Loop flow elements 68-5, 68-81) from each of the two recirculation loop flows. Instead of telling the applicants that this value is 50%, list the control board indication(s); applicants can convert this to a percent value.</p> <p>Suggest re-working the question as follows:</p> <p><i>Unit 1 was operating at 100% power when the 1A Reactor Recirc Pump tripped. The following conditions currently exist:</i></p> <ul style="list-style-type: none"> <i>1-XR-68-??, Recirc Pump Flow Recorder (gpm) values</i> <i>Tech Spec actions for single loop operation have NOT been completed</i> <p><i>WOOTF identifies the current APRM flow biased scram set point value?</i></p> <p>Question has been revised to incorporate Bruno's comments.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
2	H	2	x			x				x			N	E/U	<p>T1G1 295003 AA1.02</p> <p>1. Cred Dist: (Borderline and Easy-fix) Choice B (all 4 EDGs TIE to their SD Boards) is not plausible because a Bus only feeds two Boards. The distracter analysis stated that LOOP scenarios typically cause all 4 EDGs to <i>START</i>. Choice B should not involve all 4 EDGs <i>TIEING</i> to their respective boards. If Choice B were revised to say that all 4 EDGs were running, then this is more plausible. Changed distracter, however while a Shutdown bus normally supplies 2 Shutdown boards it can supply all 4.</p> <p>2. Cred Dist: (Easy-fix) Choice D (none of the EDGs tied to their Boards) is not plausible because the stem does not include the status of the 0-43-211-CD2, 4kV SD Bus 2 AUTO/LOCKOUT RESET switch position (which was the basis for the plausibility). By adding the 43 switch position to the stem, the plausibility of Choice D is increased. 2. Disagree, the status of the SD bus 43 switch does not matter because it is de-energized. The status of the SD board 43 switches do matter and is given in the first bullet.</p> <p>3. Stem Focus: The 1st bullet in the stem is not necessary and is conflicting with the 2nd and 3rd bullets. In other words, the 4kV SD Boards are really NOT in their normal alignment because SD Bus 2 is not in its normal alignment.</p> <p>3. The first bullet is necessary because it tells the UO that the 4KV SD boards are being feed through the normal supply breakers and the 43 switches are in manual. The alignment of the 4KV SD boards and the SD Buses are independent of each other.</p> <p>4. #/units: The stem uses the term "Shutdown" whereas each of the choices use two words "Shut Down." Which does BFN use in their procedures?</p> <p>4. Corrected spelling.</p> <p>Suggest re-working the question to test whether all four EDGs are/are not running and which EDG output breakers are closed.</p> <p>Note to NRC reviewers: The Tier 1 aspect (Emergency/Abnormal) <i>is</i> being tested because the alternate feeder breaker 1712 tripping open is a degraded condition, which adversely affects the electrical safety function. The licensee has no AOP for loss of a safety bus, only annunciator procedures, which would entail the details of what the proposed question is testing.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only		
3	H	2				x							N	E/U	<p>T1G1 295004 AK1.05</p> <p>1. Cred Dist: Choice D is not plausible because IF the pump automatically tripped on an overcurrent condition, then it would never be necessary (or wise) to locally restart it. Choice D is the only choice that talks about re-starting a bad pump. Changed question.</p> <p>2. Cred Dist: (Borderline) Choice C is not plausible because IF the pump remains running, THEN control power is lost and no switches work. Changed question.</p> <p>Suggest writing a question involving the loss of Battery Board 2 and then requiring the applicants' to know that no breaker protection exists for 4kV breakers on Unit 3 Shutdown Board 3ED (versus other plausible distracters).</p> <p><i>All units are operating at 100% power. Battery Board 2 de-energized.</i></p> <p><i>WOOTF identifies a 4kV Shutdown Board that has no breaker protection for any of its pump loads? (Assume no operator actions have been taken.)</i></p> <p>A. 3EA B. B C. C D. 3ED</p> <p>Take recommendation and change the question. MAB 10-27-14. Rewrote the question to incorporate the NRC's suggestion, Done – 11-3-14</p>
4	F	2					x						B	E	<p>T1G1 295005 G2.4.21 2008 NRC Exam Q#4</p> <p>1. Partial: Choice A is also correct because the Tech Spec set point is ≥ 550 psig. The stem question does not specify actual set point. Reworded the stem to include the words Actual Setpoint to incorporate Bruno's suggestion Suggest another modified form of this question as follows:</p> <p><i>WOOTF identifies the primary parameter used to initiate an RPS trip during a generator loss of load event and the safety limit being protected by this RPS trip function?</i></p> <p>A. Stop valve position; Reactor Core MCPR B. EHC fluid pressure; Reactor Core MCPR C. Stop valve position; Reactor Pressure D. EHC fluid pressure; Reactor Pressure</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
5	F	2	x			x								N	U	<p>T1G1 295006 AK2.06</p> <p>1. Cred Dist: Choice A (Nuclear Instruments still in process of being inserted) is not plausible because these instruments are moving and control board indications are not valid; an applicant can eliminate Choice A solely based on it being not conservative. Reworded the stem and distracter A.</p> <p>2. Cred Dist: Choice B (boron still going in) is not plausible because the level in the boron tank is not provided in the stem.</p> <p>Consequently, the applicant could assume that boron injection JUST commenced and the tank is full. If this is the case, then leaving RC/Q is not plausible. If the tank level was provided in the stem, then this may be more plausible because hot shutdown weight [B] may be already injected.</p> <p>Changed the stem to indicate that the report is coming to the US at the five minute mark, so SLC has not been injecting for a sufficient time to inject.</p> <p>3. Cred Dist: Choice C (positive period) is not plausible because the reactor is not shutdown yet.</p> <p>4. Stem Focus: The stem question should include a phrase similar to "...in accordance with EOI-1, RPV Control Cross Reference EOIPM Section 0-III-C" to ensure no partially correct answers in the post exam appeal process.</p> <p>Suggest re-working the choices to include variations of SLC tank level, IRM range, Period Indication, and/or rod positions, given the following stem question:</p> <p><i>In accordance with EOI-1, RPV Control Cross-Reference EOIPM Section 0-III-C, which ONE of the following plant conditions allows the crew to exit RC/Q and enter AOI-100-1, Reactor Scram?</i></p> <p>Reworded the question to read something like, State in the stem that the SRMs and IRMs are fully inserted and remove that from the choices. ...enter 1-AOI-100-1, Reactor Scram? The SRMs and IRMs are fully inserted... A. and 4 Control Rods are at position 24. B. the IRMs are on range 4 and not all control Rods in, injecting boron. C. Reactor power is on range 5 of the IRMs and SRM period indicates positive</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
6	H	2				x	x	x						N	E	<p>T1G1 295016 G2.4.45</p> <p>1. Job-Link: The premise of torus level continuing to slowly lower is not operationally valid because AOI-100-2 is only applicable to events where the control room must be evacuated. Events involving accidents are outside the scope of AOI-100-2 per Section 1.1, Scope:</p> <p>1.1 Scope</p> <p>This procedure can NOT be properly executed for, and does NOT support, shutting down the Reactor during any type of accident.</p> <p>The provisions of this instruction are adequate and proper for the following EOI entry conditions that may be encountered while executing Control Room abandonment:</p> <ul style="list-style-type: none">1-EOI-1 Flow Chart, RPV ControlReactor Water Level less than +2.0 inchesReactor Pressure High above 1073 psig.1-EOI-2 Flow Chart, Primary Containment ControlSuppression Pool Temperature above 95°FSuppression Pool Level above +1 inch <p>Torus level continuing to slowly lower is not operationally valid for AOI-100-2. However, torus level slowly RISING is operationally valid.</p> <p>2. Cred Dist: Choice C tests an accident situation where RPV depressurization is required, which is an event caused by some sort of accident. This is not plausible because AOI-100-2 is only applicable to a non-accident situation where the control room is abandoned.</p> <p>3. Partial: There may be no correct answer because there is no BFN document that specifically says the diesel is priority over RHR Room Coolers during AOI-100-2 evacuation. The distracter analysis referred to the AOI-57-1A Immediate Operator Actions as a basis for prioritizing the EDGs over the RHR Room Coolers; however, this basis is not applicable for events solely involving an evacuation where offsite power continues to exist.</p> <p>Suggest writing a question to test the applicant's knowledge of how all three units share RHRSW and EECW when placing torus cooling in service; the annunciators for RHRSW Low Pressure and/or EECW Low Flow could be used. Unit 1 utilizes RHR System II while Units 2/3, use RHR System I.</p> <p>See next page for comment...</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
6	H	2				x	x	x						N	E	<p>Recommendation-KN</p> <p>1. A lowering level in the torus does not indicate that an accident has or is occurring. The ARPs 25-32 include actions for both a high and low torus level. Changed the question to a high level.</p> <p>2. Agree changed distracter C and D to match a rising level and not imply an accident situation.</p> <p>3. The PRA analysis would indicate that restoring cooling to the Diesel Generators is the priority for this situation. While not in 0-AOI-57-1A both it and OI-82 illustrate the importance of cooling water to the Diesel Generators.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
7	H	2	x				x							M	E	<p>T1G1 295018 AK1.01 2012 NRC Exam Q#7</p> <p>1. Ensure no overlap with scenario events, that is, no scenario events should have a RBCCW Pump trip when the unit is operating near or at 100%. The spare scenario has a RBCCW pump trip at 95% power where the sectionalizing valve fails to close. We feel these elements are diverse enough not to be counted as duplication between the written and operating exams</p> <p>2. Partial: Choice C can also be successfully argued as correct since the term "immediate" is subjective. 3-AOI-70-1, Step 4.2 [1] states that a SCRAM is required if drywell cooling cannot be <i>immediately</i> restored. The Spare RBCCW Pump is unavailable and the tripped pump cannot be restarted; therefore, drywell cooling cannot be <i>immediately</i> restored. The stem does not specify immediate operator actions (IOA); therefore, the applicants can assume some subjectivity exists with the word "IMMEDIATE" because Step 4.2 [1] includes the phrase "<i>immediately restored.</i>" Do BFN procedures provide guidance on what the phrase "<i>drywell cooling cannot be immediately restored</i>" means? Is <i>immediately</i> defined?</p> <p>Disagree- When 3-FCV-70-48 closes the non-essential loads are isolated and Drywell cooling actually improves. Deleted the word immediate from the question.</p> <p>Is the intent of the 1st fill-in-the-blank statement to test the applicants' knowledge of whether one of the IOAs listed in AOI-70-1 is a manual scram? If so, then simply ask the question that way. (For example, "<i>One of the immediate operator actions listed in Section 4.1 of AOI-70-1 is / is not a manual scram.</i>")</p> <p>3. Partial: An applicant can successfully argue that there is no correct answer based on the wording of the 2nd fill-in-the-blank statement since the phrase "<i>will be adversely affected</i>" is subjective. The RWCU Continuous Conductivity Monitoring FUNCTION is inoperable when the operator manually stops the RWCU pumps (IOA); however the conductivity monitoring equipment is not adversely affected. Changed part 2 of the question to address comment and provide better KA match.</p> <p>4. Stem Focus: The 1st bullet should list which pump tripped instead of saying "one" pump tripped.</p> <p>Agree listed 3A RBCCW pump.</p> <p>Suggest re-working the question to test 1) the required immediate operator action listed in Section 4.1, that is, test the applicants' knowledge that <i>RWCU Pumps must be immediately stopped</i> and 2) some other required action in the procedure, such as RBCCW Suction Temperature value that requires a manual scram.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
8	F	2										x		N	U	<p>T1G1 295019 AK3.02</p> <p>1. Q=K/A: The proposed test item does not test the emergency / abnormal Tier 1 topic. Instead, the proposed question solely tests the Tier 2 aspect, which is the normal Lead/Lag operation of the control air compressors as air pressure slowly falls during any normal air transient. (See the Tier 2 Topic 300000, for example, A3, Ability to monitor automatic operations of the instrument air system.) I feel that this is not a K/A mismatch, the question sets up a situation where Control Air is being lost requiring entry into AOI-70-1. As stated in the explanation, the G compressor and the A and B compressors are running and pressure continues to fall, requiring the lag air compressors to load to try to maintain control air pressure. This is not the normal cycling of the air compressors but a sustained leak causing the Lag compressors to load. Recommend keeping the question.</p> <p>Suggest re-working the question to incorporate a Tier 1 aspect (a degraded condition, which adversely affects instrument air function). See above</p> <p>For example, write a question where offsite power was lost and test the REASON for why restarting air compressors is important, (the applicants always call for RPS, air compressors, and EECW reset during these scenarios; testing the REASON why air is needed is relevant) including which air compressor is available given a specific electrical bus alignment. OR..another example is to write a question to test the REASON why the LAG compressors auto-started (that is, an a question where the loss of power to 480V RMOV Board 2A caused G Control Air Compressor to trip)</p> <p>I recommend not using the proposed question due to K/A mismatch. I feel that the question is tied to K/A 295019 AA01.03 Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR: Instrument Air compressor power supplies versus the one on the sample plan. MAB 10-27-14.</p> <p>I recommend changing the question based on validation scores. Rev 3 is based on NRC recommendation and I believe it will validate better. KN</p> <p>It did validate better.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
9	H	2	x				x			x				N	E	<p>T1G1 295021 AK1.01</p> <p>1. Partial: An applicant could “expect” a mode change <i>at any time</i>, which could be argued as correct. Instead of using the phrase “...what time would you expect..”, reword to ask “the earliest time that Mode 3 will be entered because of rising coolant temperature.” I agree and recommend incorporating the suggestion provided by Bruno. MAB 10-27-14.</p> <p>2. Stem Focus: Add information to the stem stating that AOI-74-1 has been entered and the crew is tracking the heat up rate. I agree and recommend incorporating the suggestion provided by Bruno. MAB 10-27-14.</p> <p>3. Stem Focus: The spelling of “shut down” is different than the first sentence “shutdown” and the 3rd bullet “Shutdown.” I agree and recommend incorporating the suggestion provided by Bruno. MAB 10-27-14.</p> <p>4. #/units: The 1st bullet should specify “average reactor coolant temperature.” I checked with Operations Rep and his suggestion was to use the term most limiting reactor coolant temperature, because that is what is spelled out in the Surveillance. MAB 10-27-14.</p> <p>Done 11-3-14</p>

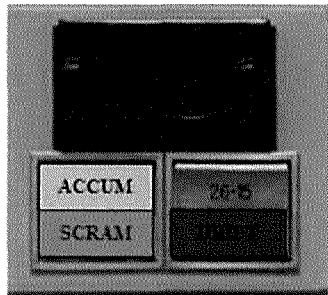
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
10	H	2	x											B	E	<p>T1G1 295023 AK1.03 2011 NRC Exam Q#10</p> <p>1. Stem Focus: The stem conditions (3rd bullet) and stem question ("refueling AOs") mix two events – inadvertent criticality event and fuel damage during refueling event. The actual event does have multiple aspects to it and I feel that with the changes that have been made to the question stem, actually test the candidates knowledge of those aspects of Refueling Accidents and the question is a higher cognitive level question.</p> <p>2. Stem Focus: The word "irradiated" does not need to be capitalized. Removed the bold all caps for the word "irradiated" from the stem.</p> <p>3. LOK: The proposed test item appears to be memory knowledge but is marked as comprehension/analysis. The LOK is correct as H because the candidate has to interpret and determine that an unexpected critically has occurred before selecting an answer. MAB 10-27-14.</p> <p>Suggest the following:</p> <p><i>As the Refueling SRO was seating an irradiated fuel assembly into the core, the Unit Operator observed indications of criticality in the main control room.</i></p> <p><i>WOOTF completes the following statement in accordance with the immediate operator actions of AOI-79-2, Inadvertent Criticality During Incore Fuel Movements?</i></p> <p><i>IF unexpected criticality is observed following the insertion of a fuel assembly, THEN immediately _____.</i></p> <p>A. remove the fuel bundle from the core B. evacuate all personnel from the refuel floor C. start an SLC pump D. verify all control rods inserted</p> <p>Recommend, not changing the question because the proposed question has two correct answers iaw AOI-79-2, remove the fuel bundle and evacuate personnel from the refuel floor.</p> <p>Done 11-3-14</p>
11	H	3												N	S	<p>T1G1 295024 EK2.03</p> <p>1. Capitalize the first letter of appendix, add comma before and after the title of the appendix, and add the word appendix before 6E. Recommend accepting all of Bruno's comments. MAB 10-27-14</p> <p>Done 11-3-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A				SRO Only
12	H	2					x					x		M	E/U	<p>T1G1 295025 G2.2.44 2011 NRC Exam Q#12</p> <p>1. Q=K/A: (Borderline) The proposed question does not require the applicant to interpret control room indications; the only knowledge required to answer the question is associated with Step RC/P-1. I feel that the K/A 295025 High Reactor Pressure: G 2.2.44 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. The current question provides indications of a couple of alarms and an observation of MSRVs cycling.</p> <p>The candidate has to determine that the steam production for this ATWS is above the capacity of the bypass valves. This is the ability to interpret control room indications.</p> <p>2. Partial: Choice C is also correct because the basis for RC/P-1 states that cycling is undesirable because it exerts loads on RPV, MSRV tail pipes, and primary containment.</p> <p>Partially agree, and we have decided to revise the question to incorporate Bruno's suggested question, however changing the distracters to match the words in the EOIPM.</p> <p>Suggest the following:</p> <p><i>Unit 1 was operating at 100% power when a load reject occurred.</i></p> <p><i>The following indications were observed when the reactor scrammed:</i></p> <p><input type="checkbox"/> RPV level lowered to -100" and is now rising</p> <p><input type="checkbox"/> Multiple rods failed to insert</p> <p><input type="checkbox"/> Two SRVs are open and one SRV is cycling</p> <p><i>WOOTF completes the following statement?</i></p> <p><i>The operator is required to open _____ until _____.</i></p> <p>A. Bypass Valves; no MSRV is cycling</p> <p>B. MSRVs; all bypass valves are open RPV pressure drops to a point where all main turbine bypass valves are fully open</p> <p>C. Bypass Valves; all MSRVs are closed</p> <p>D. MSRVs; no SRVs are cycling</p> <p>Done 11-3-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A			
13	F	2	x				x						N	E	<p>T1G1 295026 EK3.04</p> <p>1. Partial: Choice B is also correct because long term core cooling is the overall expected outcome of any accident mitigation strategy.</p> <p>I agree that long term core cooling is the overall expected outcome of any accident mitigating strategy, however an ATWS is a Special Event not covered by the Accident Analysis for which long term core cooling is a strategy.</p> <p>2. Stem Focus: The stem should include the phrase "...in accordance with..." to ensure the correct answer is absolutely correct.</p> <p>Recommend adding the phrase "in accordance with..."</p> <p>Suggest the following:</p> <p><i>An ATWS has occurred on Unit 3. WOOTF completes both statements?</i></p> <p><i>In accordance with EOI-1, RC/Q, before suppression pool temperature rises to _____ boron injection is required. In accordance with EOIPM Section 0-V-C, EOI-1, RPV Control Bases, the reason boron is injected at this temperature is _____.</i></p> <p>After discussing this with Keith, agreed to accept Bruno's recommendations and have rewritten the question.</p> <p>Done 11-3-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only		
14	F	2	x	x		x							N	U	<p>T1G1 295028 EK3.05</p> <p>1. Cred Dist: The 2nd part of choices B and D (loss of pressure suppression function) is not plausible because drywell temperature never affects the pressure suppression function of the torus. The fact that drywell temperature is indicative of the partial pressure of non-condensables that will be transferred to the torus air space during a blowdown. That actually has an impact on the condensation of the atmosphere that is transferred to the torus affecting the pressure suppression function of the torus.</p> <p>2. Cue: The 2nd part of Choices A and C contains the phrase "in the drywell", which is not necessary to elicit the correct response and mirrors the stem wording containing "drywell." I agree</p> <p>3. Stem Focus: The stem needs to include the phrase "in accordance with" to ensure the correct answer is absolutely correct. I agree</p> <p>Suggest the following:</p> <p><i>In accordance with EOI-2, Primary Containment Control, Step DW/T-4, before DW Temperature rises to _____ entry to EOI-1, RPV Control, is required.</i></p> <p><i>In accordance with EOIPM 0-V-D, Primary Containment Control Bases, the reason for entering EOI-1 at Step DW/T-4 is to scram before _____</i></p> <p>A. 160°F; non-environmentally qualified equipment is damaged B. 160°F; suppression chamber design temperature limit is exceeded C. 200°F; non-environmentally qualified equipment is damaged D. 200°F; suppression chamber design temperature limit is exceeded</p> <p>Recommend accepting Bruno's suggestion for a different question. MAB KN- Agree and revised per NRC suggestion however this wording makes the answer to part 2 scram prior to initiating DW spray.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
15	H	2	x											M	E	T1G1 295030 EA2.04 2010 Monticello NRC Exam Q#15 1. Stem Focus: Suggest the following enhancements: <i>Unit 1 is operating at 100% power.</i> <input type="checkbox"/> <i>Suppression Pool level is slowly lowering due to a leak</i> <input type="checkbox"/> <i>NO operator action has been taken.</i> <i>WOOTF is the HIGHEST suppression pool level where the drywell-to-suppression chamber differential pressure (Δp) equalizes and cannot be re-established?</i> We agree on Bruno's recommendations and have revised the question
16	H	3												N	S	T1G1 295031 EA1.05

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws					5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only				
17	H	2	x											N	E	<p>T1G1 295037 EA1.08</p> <p>1. Ensure no overlap with scenarios. <i>1. No overlap issues noted.</i></p> <p>2. Stem Focus: The stem question does not elicit each choice independently. In other words, the only way the applicants will know what the 1st part of Choices A & B really "mean" is to read the 1st part of Choices C & D. Each choice should stand on its own and not rely on the applicant having to read another choice to know what the word "only" means. <i>2. Agree and reworded as suggested except the 3rd and 4th bullets were not needed and stated that display is for 26-15.</i></p> <p>3. Stem Focus: There are commas missing after the titles of the procedures in the stem. <i>3. Added commas as needed.</i></p> <p><i>A hydraulic ATWS has occurred on Unit 2. The following conditions currently exist:</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Reactor Power is 35%<input type="checkbox"/> 2-EOI-Appendix-1F, Manual Scram, is in progress<input type="checkbox"/> 2-EOI-Appendix-1D, Insert Control Rods using Reactor Manual Control System, is in progress<input type="checkbox"/> Control Rod XX-XX is being inserted.<input type="checkbox"/> The current display for an adjacent (different) control rod 26-15 is: <div></div> <p><i>WOOTF completes both statements?</i></p> <p><i>The position indication for Control Rod 26-15 _____ appear after Step 2 (reset scram) of Appendix 1F is performed. (will vs will NOT)</i></p> <p><i>The limit switch logic required to illuminate the blue SCRAM light is _____. (at least one scram valve full open vs. bothscram valves must be full open)</i></p>	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
18	F	2	x			x				x			M	U	<p>T1G1 295038 EK2.02 2013 BFN NRC Exam, Q#18</p> <p>1. Cred Dist: Choice B is not plausible because the rad monitor is PRE-treatment; therefore, a savvy test-taker could guess that this is upstream (before) the charcoal has an effect on the effluent.</p> <p>2. Cred Dist: Choice C is not plausible because the carbon bed vault cannot be misconstrued as an offgas RELEASE because this doesn't necessarily mean that an actual release is in progress. Also, Choice C is the only choice that doesn't include the OG (Offgas) designator.</p> <p>3. #/units: The Choices are missing the annunciator location designations, that is, 9-4C, W35, etc.</p> <p>4. Stem Focus: The stem question is missing commas before and after the phrase "if valid."</p> <p>5. LOK: The proposed question is listed as higher cog even though the immediate operator actions are memory level items.</p> <p>6. Ensure no overlap with RO Q#23.</p> <p>Suggest the following: <i>Which one of the following completes both statements with respect to high offsite release rates?</i> <i>The OG AVG ANNUAL RELEASE LIMIT EXCEEDED annunciator (9-4C, W27) is triggered by the _____.</i> <i>In accordance with 0-SI-4.8.B.1.a.1, Airborne Effluent Release Rate, the ODCM Stack release limit is _____.</i> A. Offgas Pretreatment Radiation Monitor; 1.7 x 107µCi/sec B. Wide Range Effluent Gaseous Monitor; 1.7 x 107µCi/sec C. Offgas Pretreatment Radiation Monitor; [another plausible value] D. Wide Range Effluent Gaseous Monitor; [another plausible value]</p> <p>Recommend not accepting Bruno's suggested replacement question, knowledge of the ODCM Stack Release Limit is a difficulty 5.</p> <p>1. Choice B is credible as there are actions required for this alarm, just not a scram. Window 9-3A 5 F. REFER TO 0-SI-4.8.B.1.a.1 and 1-SR-3.4.6.1-a for ODCM compliance and to determine if power reduction is required. G. IF directed by Unit Supervisor, THEN LOWER Reactor power to maintain off-gas radiation within ODCM limits.</p> <p>2. Choice C is credible as there are actions to check on in the off-gas system B. CHECK pre-, post-treatment and stack radiation levels for any changes. C. CHECK system alignment, flows, pressures to determine cause of rise. D. CHECK release rate limits in the ODCM. E. IF release rate limits are exceeded, THEN REFER TO EPIP-1.</p> <p>Fix missing commas. MAB 10-27-14</p> <p>Done 11-3-14 KN fixed 3,4, and 5 verified no overlap with Q#23</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only		
19	F	2	x			x							N	U	<p>T1G1 600000 AA2.02</p> <p>1. Cred Dist: The 1st part of Choices B & D (fan remains operating during a fire) is not plausible because all BFN fire protection CO2 logic schemes always trip fans to keep from diluting the CO2 being added to the room. (fanning the flame) Addressed this issue Keith, but the fan does trip and I don't like the distracter. The fire damper words are still needed. MAB 11-3-14</p> <p>2. Cred Dist: The 2nd part of Choices A & B (inlet & outlet dampers remain open) is not plausible because all BFN fire protection CO2 logic schemes always isolate room dampers to keep from diluting the CO2 being added to the room. (fanning the flame)</p> <p>3. Stem Focus: The CO2 initiation does not have to be spurious; it is realistic that one of the EDGs could catch on fire during extended operation.</p> <p>4. Stem Focus: Incorporate the name/number of alarms and procedures the crew is expected to receive and implement, respectively. For example, 0-OI-39 and/or ARP 9-8A, W24 as necessary and when appropriate.</p> <p>There are many items that can be tested for this K/A such as the Pre-Fire Plan actions, SSI dampers, 0-AOI-26-1 dampers, etc.</p> <p>Changed question removed fan status asked expected damper status following a spurious CO2 initiation.-KN</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws					5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
20	F	2		x		x								B	E/U	<p>T1G1 700000 AK3.02</p> <p>1. Cred Dist: (Borderline) The 2nd part of Choices A and C (boards with lighter load) is not plausible because the heavier loaded boards would logically lower first. Suggest changing the word lighter to heavier.</p> <p>2. To ensure the first portion of the question is testing beyond GFES knowledge,in the stem, provide system voltage, frequency, etc. and then test the applicants' knowledge of whether to adjust the Voltage Regulator Lower/Raise Adjust HS-57-26 control switch OR to depress the HS-42, Upper Power Runback pushbutton.</p> <p>3. Stem Focus: The fill-in-the-blank statements can be streamlined by moving 0-AOI-57-1E number/title to the stem question.</p> <p>4. LOK: It appears that both parts of the proposed test item are memory/recall. If the first comment (see above Comment #1), then the comprehension/analysis designation may be more appropriate.</p> <p>Recommend changing the second part of Choice A and C to heavier electrical load.</p> <p>Granted, knowledge of electrical theory will help in determining the correct answer, but asking actions from an AOI is above GFES.</p> <p>Determining what affects grid instability has on a unit's generator and deducing how your actions will affect that instability is higher order. MAB 10-27-14.</p> <p>Done 11-3-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
21	H	2	x	x			x							N	E	<p>T1G2 295002 G2.4.11</p> <p>1. Partial: Choice D (Hi Flow annunciator) is also correct when there is a vacuum leak, which would result in higher condensate temperature, which would then result in "stalling."</p> <p>Disagree because the stem states that the SJAE is stalling.</p> <p>2. Stem Focus: The 3rd bullet is slang ("stall"); clarify the term "stall" by also including the phrase "<i>reduced SJAE 1st stage performance (stalling).</i>"</p> <p>2. Agree added</p> <p>3. Stem Focus: Avoid using the phrase "would be"; instead, reword questions to use the phrase "is required to."</p> <p>3. Agree changed</p> <p>4. Cue: The phrase reactor power is 20% is bolded, which is not necessary to elicit the correct response.</p> <p>4. Removed the bolding</p> <p>Suggest the following idea for a lower cog :</p> <p><i>WOOTF completes the following statement in accordance with 2-AOI-47-3, Loss of Condenser Vacuum?</i></p> <p><i>During operations with valid CONDENSER A, B, OR C VACUUM LOW alarm (9-7B, W17), and condensate temperature of 136°F or greater at the inlet of the SJAE, reduced SJAE First Stage performance (stalling) may occur.</i></p> <p><i>This condition will cause reduced Off Gas flow.</i></p> <p><i>[substitute plausible distracters for the underlined portions]</i></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
22	H	2	x	x										B	E	<p>T1G2 295009 AA1.04 2008 NRC Exam Q#21</p> <p>1. Cue: The capitalized word ("FIRST") is not necessary to elicit the correct response.</p> <p>2. Stem Focus: Some use of capital letters in this test item is not necessary.</p> <p>Suggest the following:</p> <p><i>Unit 1 was operating at 100% when a feed water control system failure caused an automatic reactor scram on low level.</i></p> <p><i>When the scram occurred, the operator observed that the RWCU pumps automatically tripped.</i></p> <p><i>WOOTF completes both statements?</i></p> <p><i>The reason the RWCU pumps automatically tripped was because _____.</i></p> <p><i>The current status of the RWCU Return Isolation Valve, 1-FCV-69-12, is _____.</i></p> <p><i>A. RWCU flow lowered to 56 gpm; OPEN</i></p> <p><i>B. RWCU flow lowered to 56 gpm; CLOSED</i></p> <p><i>C. RWCU Isolation Valves 1-FCV-69-1 and 1-FCV-69-2 began closing; OPEN</i></p> <p><i>D. RWCU Isolation Valves 1-FCV-69-1 and 1-FCV-69-2 began closing; CLOSED</i></p> <p>Recommend keeping the question as is. MAB 10-28-14</p> <p>Done 11-3-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
23	F	5						x						N	E	<p>T1G2 295017 AK1.02</p> <p>1. Job-Link and/or LOD=5: This item tests beyond RO knowledge.</p> <p>The SRO clarification guidance document says that PLANT PARAMETERS leading to EOI entry are RO knowledge.</p> <p>However, in this question, the EOI-4 entry condition is NOT a plant parameter. The 1st part of this question goes beyond RO knowledge because it deals with E-plan classifications requiring EOI-4 entry.</p> <p>This test item is subject to appeals in the post exam comment period.</p> <p>The aspect of venting from the torus first is a good idea; there are many things to test ROs for this K/A such as:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Appendix 13 allows exceeding offsite release rate limits; whereas Appendix 12 in PC/H leg does not allow exceeding offsite release rate limits <input type="checkbox"/> The simulator scenario event involving required actions when the MSL Hi-Hi-Hi alarm is received (closing MSIVs). (Remove from scenario and write a written exam test item.) Ensure no overlap with RO Q#18 <p>2. LOK: It appears that both parts of the proposed test item are memory / recall even though the question was listed as higher cog.</p> <p>Recommend – keeping the entry condition question. the guidance located in "Clarification Guidance for SRO-only Questions Rev 1 says "plant parameters that require direct entry to major EOPs; e.g., major Westinghouse EOPs are E0, E1, E2, E3, ECA-0.0, and Red/Orange Functional Restoration Procedures and major General Electric EOPs are Reactor Vessel Control, Primary Containment Control, Secondary Containment Control, and Radioactive Release Control.</p> <p>The only entry condition for EOI-04 Radiation Release Control is "PLANT Gaseous offsite radioactivity release rate at or above that requiring an Alert (EPIP-1 Table 4.1-A)"</p> <p>LOK has been changed to F</p> <p>Done 11-3-14</p>


Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
24	H	2										x		B	U	<p>T1G2 295020 AK3.01</p> <p>1. Q=K/A: The proposed question does not test the applicants' knowledge of the inadvertent containment isolation event.</p> <p>Instead, the proposed question tests the applicants' knowledge of the basis for the 10% MSIV position scram. One example of an inadvertent containment isolation event is an RPS MG set trip.</p> <p>2. LOK: The proposed question was listed as higher cog even though it solely tests the basis for the RPS trip (memory level).</p> <p>Suggest writing a question involving a loss of an RPS Bus and AOI-99-1, where high tunnel temperature causes an automatic reactor scram (via the Group 1 isolation) and test the applicants' knowledge of why the reactor automatically scrambled.</p> <p>There may be other possibilities for testing applicants' knowledge of the reason for a scram during the loss of an RPS bus, etc.</p> <p>Recommend – adding the word inadvertent to the stem to ensure compliance with the K/A. The reason for getting a scram on an isolation is the same whether it is inadvertent or not. MAB 10-28-14</p> <p>LOK – change to F</p> <p>Done 11-3-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
25	H	2	x									x		N	U	<p>T1G2 295029 G2.1.7</p> <p>1. Q=K/A: The proposed question does not require the applicants to make a judgment call or evaluate something. Instead, the proposed question tests the applicants' knowledge of the HPCI CST-to-Torus swap over feature. An example of evaluating an instrument and making a judgment call is when the operators decide whether the reactor is critical.</p> <p>In this test item, the Hi Suppression Pool Level topic is superimposed on the G2.1.7 generic K/A, which is a bit tricky. For example, if the question provided a set of parameters and then required the applicant to choose which system to place in pressure control and which system to place in level control, where torus level somehow factored into the decision, then this would meet the intent of the G2.1.7 K/A. See suggestion below.</p> <p>2. Stem Focus: The word "system" does not need to be capitalized; commas are needed before and after the phrase "if any."</p> <p>Suggestion: Test the applicants' ability to use EOI-Appendix 9 during a situation where torus level is greater than 18 feet and primary containment water level must be evaluated using the drywell pressure tap. A reference may or may not be needed depending on how the question is constructed.</p> <p>Recommend – removing the capital from the word "system" otherwise maintaining the question as is, because it does provide instruments and readings for the operator to make a judgment call on whether or not the systems are responding correctly. Furthermore asking a candidate to make a judgment is a Level 3 in Blooms taxonomy which states in NUREG 1021 Appendix B page 5 Level 3 (i.e., analysis, synthesis, or application) testing is a more active and product-oriented testing approach, which involves the multi-faceted mental process of assembling, sorting, or integrating the parts (information bits and their relationships) to predict an event or outcome, solve a problem, or create something new. This level requires mentally using the knowledge and its meaning to solve problems.</p> <p>The problem with using the word "judgment"; is that it implies that based on how the candidate applies their assumption will influence his response. If we ask him to judge something, he can chose any of the answers as correct and would not be incorrect. MAB 10-18-14</p> <p>See Question 25 REV 2 as potential replacement.-KN</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
26		4	x	x		x								N		<p>SAMPLE QUESTION provided on 8-20-14 T1G2-295033-EK2.01</p> <p>1. LOD=1: Because Table 4 is provided as a reference, there is no discriminatory value for this question. The knowledge of what constitutes an "area" is obvious given Table 4 as a reference. The 2nd part of the question is the only portion which tests the K/A (which is ok), but the 2nd part of the question is LOD=1 because it is a direct lookup.</p> <p>2. Cred-Dist: The 1st part of Choices C & D (ventilation rad alarm) is not plausible because the stem (or pictures) don't include vent rad monitor readings.</p> <p>3. Cue: The capitalized word "ONLY" in the 2nd fill-in-the-blank is not necessary to elicit the correct response.</p> <p>4. Stem Focus: The 2nd fill-in-the-blank statement should include the phrase "in accordance with 3-EQI-3" to ensure no one could potentially argue that conservative decision-making may require ED-based on rising trends.</p> <p>5. Cue: The 2nd fill-in-the-blank "tells" the applicants what ED criteria is, (two areas above max safe). This information could potentially be used to answer other exam items.</p> <p>Suggestion: Don't provide Table 4. Instead, modify the stem to say that two radiation alarms (pictures provided) <i>inside the RWCU room</i> are at their max safe value. (Aren't 90-13A and 90-14A inside the same room?) The RWCU room is one area.</p> <p>This option increases the level of difficulty but isn't minutia because the name of the rad monitors still provides sufficient information to the applicants that the only involved space is inside the RWCU room.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation															
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A				SRO Only														
26	H	2				x							N	U	<p>T1G2 295033 EK2.01</p> <p>1. Cred Dist: See comment #2 for the previous version of this question submitted as an early sample on 8-20-14. The same comment applies. The 1st part of Choices C & D is not plausible because the stem and illustration do not contain anything that can be misconstrued as a process radiation monitor parameter or a high coolant activity. In other words, the reference is a picture of two AREA rad monitors. The picture does not include a process rad monitor, and the stem doesn't include anything related to a process rad monitor parameter or a high coolant activity. Therefore, the applicants can eliminate Choices C & D solely based on this and be correct.</p> <p>See previous version of question submitted on 8-20-14, including the following (same) suggestion: Don't provide Table 4. Instead, modify the stem to say that two radiation alarms (pictures provided) <i>inside the RWCU room</i> are at their max safe value. (Aren't 90-13A and 90-14A inside the same room?) The RWCU room is one area.</p> <div><div><div>N RWCU SYS AREA EL 593 RX BLDG 3-25-90-13A PANEL 3-2-5, 0000 000</div><div>S RWCU SYS AREA EL 593 RX BLDG 3-25-90-14A PANEL 3-2-5, 0000 000</div></div><table><tr><td>TIP room</td><td>90-22A</td><td>Alarmed</td><td>100,000</td><td>TIP bail valve</td></tr><tr><td>RB el 593</td><td>90-13A, 14A</td><td>Alarmed</td><td>1000</td><td>FCV-74-47, 48</td></tr><tr><td>DR el 621</td><td>90-04A</td><td>Alarmed</td><td>1000</td><td>FCV-44-13, 14</td></tr></table><p>This option increases the level of difficulty but isn't minutia because the name of the rad monitors still provides sufficient information to the applicants that the only involved space is inside the RWCU room. Another option is to write a question where the answer to Step SC/R-4 (Will ED reduce discharge?) is NO. Then test the applicants' knowledge that 2 areas > Max Safe Rad requires Cold Shutdown (Instead of ED).</p><p>Recommend putting a small fuel failure in the stem to justify elevated rad conditions in the reactor building during the steam leak. Added a fuel pool area rad monitor picture a changed distractor. Picture is added MAB 11-3-14</p></div>	TIP room	90-22A	Alarmed	100,000	TIP bail valve	RB el 593	90-13A, 14A	Alarmed	1000	FCV-74-47, 48	DR el 621	90-04A	Alarmed	1000	FCV-44-13, 14
TIP room	90-22A	Alarmed	100,000	TIP bail valve																										
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DR el 621	90-04A	Alarmed	1000	FCV-44-13, 14																										

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
27	H	2	x	x			x							N	E	<p>T1G2 295035 EA1.01</p> <p>1. Partial: Choice A can also be argued as correct because 2-AOI-30B-1, Step 4.2 [3] requires the operator to observe building pressure. This step does NOT specify the location of <i>where</i> to observe building pressure; therefore, dispatching an AO to Panel 25-2B to observe 2-PDIC-64-2 is not completely wrong.</p> <p>2. Cue: The word "still" in the 3rd sub-bullet (2A Reactor Zone Supply fan is "still" running) is not necessary to elicit the correct response.</p> <p>3. Stem Focus: The phrase "OATC reports no PCIS isolation signals have been received" is not necessary.</p> <p>4. Stem Focus: The 2nd sub-bullet (2B fan tagged out-of-service) should be at the top of the question as an initial condition, to be clear to the applicants.</p> <p>Suggest the following enhancements to remedy all comments:</p> <p><i>Unit 2 is operating at 100% power with the 2B Reactor Zone Exhaust Fan tagged OOS.</i></p> <p><i>Subsequently,</i></p> <p><input type="checkbox"/> RX BLDG VENTILATION ABNORMAL (9-3D, W3) alarms</p> <p><input type="checkbox"/> UO reports that 2A Reactor Zone Exhaust fan tripped</p> <p><input type="checkbox"/> 2A Reactor Zone Supply fan is running</p> <p><i>A few minutes later,</i></p> <p><input type="checkbox"/> UO reports that 2A Reactor Zone Supply fan tripped</p> <p><input type="checkbox"/> Amber light 2-ZI-064-0123, Reactor Zone Isolation, LIT at Panel 2-9-25.</p> <p><i>Which one of the following completes both statements?</i></p> <p>_____ caused the 2A Reactor Zone Supply Fan to trip. In accordance with 2-AOI-30B-1, Reactor Building Ventilation Failure, IF reactor building pressure cannot be maintained more negative than _____ "H2O, THEN Standby Gas Treatment is required to be started. (-0.25 ' vs. -0.17)</p> <p>I'm not sure, what do you think Keith?</p> <p>Accept the Suggestion- Question revised-KN</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
28	H	5	x					x						N	E	<p>T2G1 203000 G2.2.38</p> <p>1. Job-Link and/or LOD = 5: This question tests beyond RO knowledge. Operability determinations are always an SRO function. The RO is required to know which equipment is required to be operable during the required modes. The proposed question tests an operability determination. This question can be contested during a post-exam appeal.</p> <p>From OI-74 RHR page 103 CAUTION When throttling 2-FCV-74-59, RHR SYS I SUPPR POOL CLG/TEST VLV, maintain 2-IL-74-59Y, 2-FCV-74-59, LOCA CLOSURE TIME, blue indicating light LIT to maintain LPCI operability.</p> <p>From OI-68 RR, Precautions and Limitations, TS BASES SR 3.5.1.5, If Recirc Pump 2A(2B) Discharge Valve, 2-FCV-068-0003(0079), is declared inoperable while the valve is open, the associated LPCI Subsystem must be declared INOPERABLE.</p> <p>2. Stem Focus: It is difficult to discern which light is illuminated and extinguished on a black-and-white copy. The candidates will be given color copies</p> <p>The question can be re-worked to test the requirements for the control board light means, which is RO knowledge, as follows: <i>Unit 2 is operating at 100% power with suppression pool cooling in service.</i> <i>Which one of the following completes the statement with regard to the RHR SYS II SUPPR POOL CLG/TEST VLV indication at Panel 9-3?</i></p> <div style="text-align: center;">  <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>2-FCV-74-73 LOCA CLOSURE TIME 2-IL-74-73Y</p> </div> </div> <p>When the light is _____, this means that, during a LOCA, the required _____.</p> <p>A. Illuminated; LPCI injection time will be exceeded B. Illuminated; Containment Cooling flow rate cannot be achieved C. Extinguished; LPCI injection time will be exceeded D. Extinguished; Containment Cooling flow rate cannot be achieved</p> <p>Alternatively, another question could be written to test limiting conditions for operation for LPCI loops, which is "above-the-line" information in Tech Specs. Recommend – maintaining the question with some minor changes. MAB 10-28-14 Done 11-3-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
29	H	2	x										N	E	T2G1 205000 K6.04 1. Stem Focus: Suggest the following minor changes to the 2 nd fill-in-the-blank statement and the 2 nd part of the four choices to streamline <i>[Keep 1st fill-in-the-blank statement the way it is.]</i> <i>RHR Pump 3A will automatically trip because of _____.</i> A. <i>[Inboard Injection Valve]; low suction pressure</i> B. <i>[Inboard Injection Valve]; a suction valve interlock</i> C. <i>[Outboard Injection Valve]; low suction pressure</i> D. <i>[Outboard Injection Valve]; a suction valve interlock</i> Recommend – Accepting Bruno’s suggested changes MAB 10-28-14 Done 11-3-14
30	F	2	x				x						N	E	T2G1 206000 K2.04 1. Partial: To ensure no one can argue that the word "circuit" also includes the flow controller (Choice D would be correct then), change the word "circuit" to "logic." 2. Stem Focus: When the applicant fills in the blank, the statement becomes a question. Each test item must include a question before the fill-in-the-blank statement. Recommend – changing question to read "What is the power supply to the Unit 1 HPCI trip logic?" MAB 10-28-14 Done 11-3-14

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
31	H	2	x				x							N	E	<p>T2G1 209001 A4.03</p> <p>1. Partial: There is no correct answer to the 2nd part of the question because the REAL reason the hand switch is held in the closed position is to ensure the valve goes all the way closed. The proposed question lists a reason for holding the hand switch in the closed position as ensuring the torque switch stops movement. This isn't the REASON why holding the control switch is required, it's the mechanism for what stops the motor from turning. The reason why the control switch is held is to ensure the valve goes all the way closed.</p> <p>Revised part 2 to ask which injection valve is a throttle valve.</p> <p>2. Stem Focus: The word "correctly" is not necessary in the stem question.</p> <p>Removed correctly</p> <p>3. Stem Focus: The proposed test item combines a fill-in-the-blank statement with another question. Convert both parts to be the same. Converted part 2 to fill in the blank</p> <p>4. Stem Focus: Suggest adding a statement for the applicant to consider each statement separately since the 1st fill-in-the-blank deals with opening valves for injection flow and the 2nd fill-in-the-blank statement deals with shutting down injection.</p> <p>Not needed based on revision</p> <p>5. Stem Focus: Add "in accordance with 2-EOI-Appendix 6D" to the second sentence in the stem as "Reactor water level is being restored in accordance with 2-EOI-Appendix 6D/6E." This will help with operational validity and focus.</p> <p>Added IAW 2-OI-75 to stem and deleted initial conditions that were not needed.</p> <p><i>WOOTF completes both statements?</i> <i>[Consider each statement separately.]</i> <i>[Keep 1st fill-in-the-blank statement the same.]</i> <i>In accordance with 2-OI-75, Core Spray System, when closing the inboard injection valves, the operator must continue to hold the hand-switch in the CLOSE position for six seconds until ____.</i> <i>[the torque switch stops motor movement vs. the limit switch stops motor movement]</i></p> <p>May be more discriminating to test the applicants' knowledge of whether the inboard injection valves are seal-in close or throttle valves.</p> <p>Recommend – removing "correctly". Change the second part to something like Bruno suggested. Which is a throttle versus seal in valve when opening. MAB 10-28-14</p> <p>Question revised-KN</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
32	H	3												B	S	T2G1 209001 K6.04 2011 NRC Exam Q#11
33	H	2				x								N	E/U	<p>T2G1 211000 A2.02</p> <p>1. Cred Dist: Choice B is not plausible because of the word ONLY. Squib Valve B has no light lit. It has no continuity; therefore, it is not plausible that ONLY <i>the B pump</i> is available. Even if the applicant thought that each pump had its own dedicated flow path, they still wouldn't pick Choice B because the A side lights are lit and milliamps available to fire the squib.</p> <p>2. Cred Dist: (Borderline) Choice D (no pumps available) is not plausible because a picture is provided showing the A squib valve continuity light still lit. The distracter analysis said the reason why Choice D was plausible was if the milliamps were below the 3 amp requirement, then neither pump would be available. In the proposed test item, the picture still shows good continuity on the A side squib valve. Therefore, Choice D is not plausible. Based on the distracter analysis for Choice D, even if you make Choice D the correct answer by lowering the A side milliamp reading to 2.7 milliamps and making the picture dark for both sides, then it is not known whether the squib valve would fire or not; 2.7 amps may still be enough.</p> <p>Suggest writing a question that involves a situation where neither squib valve fired and then test the applicants' knowledge of another method to inject SLC. This would hit the (b) portion of the K/A statement but wouldn't hit the (a) portion of the K/A statement. ES-401 states:</p> <p>When selecting or writing questions for K/As that test coupled knowledge or abilities (e.g., the A.2 K/A statements in Tiers 1 and 2 and a number of generic K/A statements, such as 2.4.1, in Tier 3), try to test both aspects of the K/A statement. If that is not possible without expending an inordinate amount of resources, limit the scope of the question to that aspect of the K/A statement requiring the highest cognitive level (e.g., the (b) portion of the A.2 K/A statements) or substitute another randomly selected K/A.</p> <p>Recommend – rework this question</p> <p>Question has been rewritten in 2 parts-KN</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
34	H	1	x											N	E/U	<p>T2G1 212000 A2.21</p> <p>1. Direct Lookup and/or LOD=1: The 3rd bullet in the stem provides the relay ID number. Because the applicants will be provided with 1-OI-99, Illustration 3, Page 4, all that's required to obtain the correct answer is for the applicant to match the relay ID number to the 4th row 2nd column on the table. This row provides the channel of RPS is being affected (A2) AND the fuse ID# (0081BA).</p> <p>2. Stem Focus: the phrase "correct this condition" in the 2nd fill-in-the-blank statement is vague.</p> <p>Suggest re-working the question as follows:</p> <p><i>Unit 1 startup in progress. Reactor Power is 40%. WOOTF predicts the plant response if PIS-1-81B, Turbine First Stage Pressure transmitter fails downscale (indicates 0 psig)?</i></p> <p><i>The TURB CV FAST CLOSURE TURB SV CLOSURE SCRAM/RPT TRIP LOGIC BYPASS (9-5B, W16) annunciator will _____.</i></p> <p><i>If a subsequent turbine trip occurs, then _____.</i></p> <p>A. alarm; a full scram will still occur B. alarm; ONLY a half scram will occur C. clear; a full scram will still occur D. clear; ONLY a half scram will occur</p> <p>Recommend – Not accepting his suggestion as it does not match the K/A second part where you use procedure to correct or mitigate the problem.</p> <p>KN- recommendation 1. The K/A part B states; based on those predictions, use procedures to correct, control, or mitigate... and the K/A specifies a failure of individual relays to reposition. The candidates are not required to memorize the relay tables therefore a reference is appropriate. 2. Accepted suggestion for part 1 and enhanced plausibility for part 2</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only		
35	F	2	x			x							N	E	<p>T2G1 215003 K1.02</p> <p>1. Cred Dist: Choice D is not plausible because IRM A is only reading 15 and then ranged UP, which makes it DOWNSCALE.</p> <p>2. The question may be double jeopardy with Q# 36 if the applicant does not know what happens when the range switch is used.</p> <p>3. Stem Focus: Add the word ONE to the stem question, that is, WOOTF, to avoid a situation where the applicant thinks there may be more than one correct answer.</p> <p>Suggest the following :</p> <p><i>WOOTF completes both statements regarding the IRMs?</i> <i>The IRM DOWNSCALE ROD BLOCK set point is _____ .</i> <i>The IRM high ROD BLOCK set point is _____</i></p> <p>Recommend – changing the question to make it similar to the suggested question.</p> <p>Done 11-3-14</p>
36	F	2	x			x							N	E	<p>SAMPLE QUESTION provided on 8-20-14 T2G1 215003 K4.04</p> <p>1. Cred Dist: (Borderline) The plausibility provided for the 2nd part of Choices A & C (Range 1 to 2) is borderline. Suggest changing the 2nd part of Choices A & C to "5 to 6." Basis: There are 10 ranges; therefore, it's plausible that different preamplifiers are used on the first five ranges as opposed to the second five ranges since this is halfway.</p> <p>2. Cred-Dist and/or Stem Focus: To enhance plausibility and to add clarification for the term "e", change the 1st part of Choices A & B to "2.7" and the 1st part of Choices C & D to "3.16."</p> <p>3. Stem Focus: The 1st fill in the blank statement can be streamlined as "<i>When IRMs are ranged up or down, the readings on the recorders change by a factor of _____.</i>"</p>
36	F	2											N	S	T2G1 215003 K4.04

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
37	H	2	x				x							N	E	<p>1. Partial: The proposed question has a high potential for more than one correct answer in the post-exam comment arena.</p> <p>Here are two scenarios of how this could happen:</p> <p><input type="checkbox"/> The GOI says to insert rods if the reactor period is shorter than 30 seconds. What if the period is exactly 30 seconds??? The SRM PERIOD annunciator will be in alarm, but the GOI doesn't apply since the period isn't "technically" shorter than 30 seconds.</p> <p><input type="checkbox"/> Choice A is also correct because the last rod pulled is always the first rod to push back in, even if multiple rods are inserted per 3-SR-3.1.2.5(A) (Choice doesn't say ONLY).</p> <p>2. Stem Focus: The 1st fill-in-the-blank statement should include the phrase "in accordance with 1-GOI-100-1A, title." corrected</p> <p>3. Stem Focus: In Choices C & D, the title of 3-SR-3.1.2.5(A) is missing. corrected</p> <p>4. Stem Focus: The phrase "sealed in" listed in the 1st bullet is slang; instead, the bullet should say that "<i>the annunciator is alarmed and will not reset (sealed in).</i>"</p> <p>Recommend –</p> <p>1. I would expect the candidate to take the conservative action.</p> <p>2. reformat the question to say "insert the last control rod pulled...</p> <p>A. (1) to obtain a period >60 seconds (2) 30 seconds</p> <p>B. (1) to obtain a period >60 seconds (2) 60 seconds</p> <p>C. (1) and continue to insert additional rods in accordance with 3-SR-3.1.2.5(A) until the Reactor is subcritical (2) 30 seconds</p> <p>D. (1) and continue to insert additional rods in accordance with 3-SR-3.1.2.5(A) until the Reactor is subcritical (2) 60 seconds MAB 10-28-14</p> <p>Done 11-3-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
38	H	2	x											B	E	T2G1 215004 K5.03 2010 NRC Exam, Q#37 1. Stem Focus: The Choices are numbered E, F, G, & H; should be A, B, C, D. 2. To add plausibility to choices A & B, change the reading on SRM A to 7.1 E4 (instead of E5). This is still higher than the rod block set point. 3. Stem Focus: Delete the phrase "into the core and is" in the 1 st and 4 th bullets; not necessary. 4. Stem Focus: Lower case for cps. 5. Stem Focus: Consider adding the annunciator to the stem instead of only saying that a control rod block has occurred. Recommend - make sure the format is correct so word doesn't renumber the choice letters. Change SRM A reading to 7.1 x 10 ⁴ cps Delete the phrase "into the core and is " Change Caps on cps to lowercase. MAB 10-28-14 Done 11-3-14
39	F	2					x							B	E	T2G1 215005 K4.01 1. Partial: Choice A is also correct, based on the wording of the fill-in-the-blank statement. Suggest the following: <i>WOOTF completes the following statement?</i> <i>Each operable APRM channel requires a MINIMUM of _____ LPRM inputs and at least _____ inputs per level; otherwise, an APRM INOP condition is generated.</i> Recommend – Change to Bruno's suggestion. Done 11-3-14 Agree Rev 2 uses the recommended wording and format-KN

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
40	H	3	x			x								N	E	<p>SAMPLE QUESTION provided on 8-20-14 T2G1 217000 K1.04</p> <p>1. Cred Dist: Choice B (clean radwaste) may not be plausible because it is not worded like the other three choices. Suggest changing Choice B to "Reactor Building Equipment Drain Sump."</p> <p>2. Stem Focus: The fill-in-the-blank statement can be more precisely worded as "The RGIC Steam Line Drain Pot is currently aligned to the ____."</p> <p>3. Stem Focus: The 1st sentence can be streamlined as "Unit 3 scrammed and reactor water level lowered to (-) 50 inches."</p>
40	H	3												N	S	T2G1 217000 K1.04
41	H	3	x				x							M	E	<p>T2G1 218000 K5.01 2012 NRC Exam Q#90</p> <p>1. Job-Link: The proposed test item isn't operationally valid. The reactor initially scrammed due to a LOCA, with vessel level reaching -162" four minutes later; however, drywell pressure doesn't reach 2.45 psig until five minutes later. When the loss of coolant accident occurred, drywell pressure would have immediately reached 2.45 psig.</p> <p>2. Stem Focus: The fill-in-the-blank statement should be modified to say "The earliest time that ADS will auto-actuate is ____."</p> <p>Recommend – Adding in a loss of Feedwater to stem, to justify the level lowing without the corresponding rise in DW Pressure. 09:02 Rx Wtr Lvl is +3 inches 09:06 four minutes later level is -162 inches 09:07 another minute later DW Press High Scram Alarm annunciates.</p> <p>What is the earliest time that ADS will auto initiate? MAB 10-28-14</p> <p>Recommend-KN</p> <p>1. Resequenced the stem to be operationally valid. 2. Reworded the fill in the blank as suggested.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
42	H	2				x	x					x		B	U	<p>T2G1 223002 G2.1.7</p> <p>1. Cred Dist: Choice B (only close the MSIVs) is not plausible because the initial power is 100% and Choice D contains the conservative choice, irrespective of what the procedure requires.</p> <p>2. Cred Dist: Choice C (only scram) is not plausible because this would not preclude pressure from lowering and Choice D contains the conservative choice, irrespective of what the procedure requires.</p> <p>3. Q=K/A: The proposed test item does not test the applicants' knowledge of PCIS. It only tests the applicants' knowledge of 2-AOI-47-2, Turbine Control System Malfunctions.</p> <p>4. Partial: There appears to be no correct answer because the stem doesn't provide a reactor pressure value. The procedure requires performing scram + close MSIVs if reactor pressure lowers to 900 psig. Since the stem doesn't include current reactor pressure value, the applicant could assume that reactor pressure is 1015 psig and lowering.</p> <p>Suggest replacing this question with another bank question that tests the applicants' ability to identify that a PCIS isolation failed to occur based on instruments, parameters, etc.</p> <p>Recommend – unfortunately we have had licensed ROs in the simulator close the MSIVs at 100% power during scenarios where Scramming was the right thing to do first. So I must say that Closing the MSIVs is not only plausible but likely.</p> <p>Again, I have seen licensed ROs forget about the safety limit and only scram the plant and not close the MSIVs during scenarios. So I must say again this is not only plausible but likely.</p> <p>Add Reactor Pressure is 915 psig and continues to lower. MAB 10-28-14</p> <p>Done 11-3-14 KN added OPDP-1 to references and changed Reactor pressure in the stem to above the AOI-47-2 immediate action setpoint of 900psig.</p>
43	F	2												B	S	T2G1 239002

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
44	H	2	x			x	x						M	E	<p>T2G1 239002 K3.03 2008 BFN NRC Exam Q#89</p> <p>1. Cred Dist: Choice D is not plausible because of the interplay between the two fill-in-the-blank statements. In other words, IF the minimum number of MSRVs is NOT met, then the 2nd fill-in-the-blank answer can never be zero.</p> <p>2. Partial: Choice B is also correct because the fill-in-the-blank statement says "procedurally required." According to Step C2-10, no additional MSRVs are required to be opened when 4 have been opened. In other words, if the applicant chose to point to Step C2-10 as to where the question is asking about, then Choice B is correct.</p> <p>3. Stem Focus: The 2nd bullet is vague with respect to auto or manually.</p> <p>4. Stem Focus: The phrase "in accordance with 2-C-2, Emergency Depressurization," should be included to both stem questions to ensure preciseness.</p> <p>Suggest the following: <i>A LOCA has occurred on Unit 2. and The normal solenoid power supply has been lost to several Automatic Depressurization System (ADS) valves Main Steam Relief Valves (MSRVs).</i></p> <p><i>Emergency Depressurization is required.</i></p> <p><i>WOOTF completes both statements?</i></p> <p><i>For each unit, there are _____ ADS valves equipped with alternate power supplies.</i></p> <p><i>In accordance with 2-C-2, Emergency Depressurization, the minimum number of MSRVs that are required to be opened to avoid using alternate emergency depressurization methods is _____.</i></p> <p>Recommend – Since the C2 flowchart is not provided.</p> <p>1. If the minimum number of SRVs is 6 (misconception) but the EOI is followed then C2-10 says "can at least 4 ADS valves be open, and the No path is selected (procedural execution error). Then the EOI asks if RPV pressure is 70 psig above Suppression Pool Pressure then lineup alternate depressurization systems to complete the ED. Distracter D is plausible.</p> <p>2. Step C2-9 has to be addressed, prior to getting to C2-10 and C2-9 says to open 6 MSRVs (procedure execution error). Distracter B is plausible.</p> <p>3. insert the word "manually"</p> <p>4. Add "in accordance with 2-C-2, Emergency Depressurization" to the stem</p> <p>Recommendation-KN -Accept NRC suggestion except highlighted portion is not needed, see Rev 4</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws					5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only				
45	H	2	x	x										N	E	<p>T2G1 259002 A2.04</p> <p>1. Cues: The 4th bullet (Master Level Controller output is lowering) should be clarified with either a picture or the numbers on the controller so that the applicant has to determine that the output is lowering instead of telling the applicants that it is lowering.</p> <p>Additionally, the 2nd bullet lists 2B RFPT before the 3rd bullet, 2A RFPT. Shouldn't the stem list the RFPT statuses in alphabetical order?</p> <p>2. Stem Focus: The 1st sentence uses slang; "RFPT 2A & 2B are on the Master Level Controller."</p> <p>3. Stem Focus: The 2nd bullet can be streamlined as "RFPT 2B speed begins rising."</p> <p>4. Stem Focus: The 3rd bullet can be streamlined as "RFPT 2A speed begins lowering."</p> <p>5. Stem Focus: The 1st fill-in-the-blank statement isn't grammatically correct.</p> <p>6. Stem Focus: In order to meet the intent of the second part of the K/A statement (use procedures to correct, control, mitigate), re-work the 2nd fill-in-the-blank statement to refer to the required action in accordance with 2-AOI-3-1, Loss of Reactor Feedwater or Reactor Water Level High/Low.</p> <p>Recommend –</p> <p>1. Insert controller numbers, but still tell them it's lowering. list the feed pumps in alphabetical sequence.</p> <p>2. reword to aligned to the Master Controller in Auto.</p> <p>3. Keep wording the same to make sure rates are included.</p> <p>4. Keep wording the same to make sure rates are included.</p> <p>5. make the fill-in-the-blank grammatically correct.</p> <p>6. accept the suggestion by Bruno.</p> <p>Done 11-3-14</p>	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
46	H	2	x			x							N	E	<p>T2G1 259002 K3.03</p> <p>1. Cred Dist or Cue: Because the stem bullet/picture is provided, Choice A (no effect) is not plausible.</p> <p>2. Stem Focus: The phrase "in the Reactor Feedwater Level Control system" is not needed in the first sentence.</p> <p>3. Stem Focus: The phrase "current operation" in the stem question is vague.</p> <p>Suggest the following:</p> <p><i>Unit 2 is at 25% power when the total feedwater flow input signal to the Rod Worth Minimizer (RWM) fails downscale.</i></p> <p><i>Given this malfunction, WOOTF completes both statements? The total feedwater flow signal is _____. (only used for the LPSP vs used for both the LPSP and LPAP)</i></p> <p><i>Given this condition, a control rod _____ be selected. (cannot vs can still)</i></p> <p>Recommend –</p> <p>Accepting Bruno's recommendation</p> <p>Done 11-3-14</p>
47	H	3											N	S	T2G1 261000 A1.02

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
48	F	2	x											N	E	<p>T2G1 262000 K2.01</p> <p>1. Stem Focus: The 2nd fill-in-the-blank statement has a misspelled word (offsites).</p> <p>2. Stem Focus: The phrase "from the 500 KV switchyard" in the 1st fill-in-the-blank statement is not necessary.</p> <p>3. Stem Focus: In the 2nd fill-in-the-blank statement, the phrase "of the" is not necessary.</p> <p>Recommend – Accept Bruno's recommendations</p> <p>Recommend-KN 1.agree 2.agree 3.agree Corrected in Rev 2 of question</p>
49	F	2	x											B	E	<p>T2G1 262002 A4.01</p> <p>1. Stem Focus: The 1st sentence in the stem is vague. What exactly (inverter's name/unid #?) was lost? The 1st sentence says a "loss of Unit Preferred power occurs." This needs to be more specific in order to ensure the applicant knows what was lost and how it was lost. The 2nd sentence says "the operator is now ready to re-energize BB1 Panel 11; which implies that the inverter (name/unid #?) on Unit 1 was lost.</p> <p>2. Stem Focus: The fill-in-the-blank statement refers to "reenergization of the Unit Preferred Bus", which is vague. The name of the bus/panel/etc. should be used instead of "unit preferred bus."</p> <p>3. Stem Focus: The stem question should refer to 1-AOI-57-4, Loss of Unit Preferred.</p> <p>Recommend – Accept Bruno's Comments</p> <p>Recommendation-KN 1. Added Battery Board 1 Panel 11 is lost due to the 1001 breaker tripping. Inverter UNID not needed to match AOI-57-4. 2. Added (Battery Board 1 Panel 11) 3. Added in accordance with 1-AOI-57-4 Loss of Unit Preferred to the stem.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
50	F	2	x											B	E	T2G1 263000 K1.01 1. Stem Focus: The fill-in-the-blank statements aren't necessary. <i>WOOTF identifies the normal and alternate power supplies to 250V Unit Battery Chargers 1, 2A, 2B, and 3?</i> Recommend – I agree I also agree fixed on Rev 1-KN
51	F	2	x				x							N	E	T2G1 264000 A1.01 1. Partial: The status of the A EDG is vague because the stem says a clearance is being removed. This makes the 1 st fill-in-the-blank statement vague because the applicants don't know the status of the tag out. Are the AC and/or DC soak back pump breakers still under clearance? If so, then there may be no correct answer to the 1 st fill-in-the-blank statement. 2. Stem Focus: Why is the 2 nd sentence necessary? 3. Stem Focus: The 2 nd fill-in-the-blank statement should include the section of the procedure. <i>In accordance with 0-OI-82, Section 4.2, DG A Prestartup/Standby Readiness Requirements, the lube oil cooler oil outlet temperature (LO CLR LUBE OIL OUTLET TEMP 0-TI-82-35A) is required to be greater than _____.</i> Recommend – 1. Agree; say that all power has been restored to all DG equipment. 2. Keith? 3. Include the section of the procedure. Recommendation-KN 1.Revised to say tagged components returned to standby readiness positions IAW 0-OI-82 section 4.2 2.The second sentence tells the candidate that the D/G lube oil temperature will need to warm up prior to the D/G being in standby readiness. 3.Added section of procedure Corrections made on Rev 2

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
52	H	2	x			x								B	E	<p>SAMPLE QUESTION provided on 8-20-14 T2G1-300000-A4.01 (2010 NRC Exam Q#52)</p> <p>1. Cred Dist: (Easy Fix) Choice C (Outboard MSIVs are closed) is not plausible because lowering air pressure would cause the valves to slowly drift closed; an absolute determination can't be made.</p> <p>2. Stem Focus: The applicants' may ask if the pressure is stable or continuing to lower. Suggest adding the word "(stable)" to the picture.</p> <p>3. Stem Focus: The word "correct" in the stem question is never necessary.</p> <p>Suggest the following: WOOTF identifies the plant status based on the current control air pressure? A. Service Air Cross Tie Valve 0-FCV-33-1 is CLOSED. B. Condensate Demin Bypass Valve, 2-FCV-2-130, has failed to the OPEN position. C. Outboard MSIV accumulator check valves have OPENED. D. Unit 2 to Unit 3 Control Air Cross Tie Valve 2-PCV-032-3901 has CLOSED.</p>
52	H	2												B	S	<p>T2G1 300000 A4.01 2010 BFN Exam, Q#52</p> <p>KN-Rev 2 added documentation for distracter C</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
53	F	2	x				x						B	E	<p>T2G1 400000 K3.01</p> <p>1. Stem Focus: The initial plant power level is not provided.</p> <p>2. Partial: We need to see how the simulator model predicts a complete loss of RCW, including the effects on RBCCW. IF RBCCW pressure is affected, then Choice B can also be correct. Can we run a complete loss of RCW on the simulator from 100% power to see which components are/are not provided with cooling water (assuming no operator actions)?</p> <p>3. Stem Focus: The words "water supply" should be added to the 1st fill-in-the-blank statement, "A sustained loss of Raw Cooling Water will result in NO cooling water supply to the ____."</p> <p>Recommend –</p> <p>1. The answers are independent of Rx Power so there is no need to put Reactor power in the stem.</p> <p>2. Partial cooling is available for all of the distracters once RCW is lost. The only system or component that has NO cooling is the CRD system, there is no backup provided. Making it the only correct answer.</p> <p>MAB 11-6-14</p> <p>3. Disagree, RBCCW flow is not changed. The question is asking if the student remembers that one of the RBCCW heat exchangers for each Unit and the Control air compressors will have cooling from EECW therefore loss of RCW will not result in NO cooling to these loads.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
54	H	2		x				x				x		N	E	<p>T2G2 201006 A2.05</p> <p>1. Cue: The only rod in Group 16 that is withdrawn is also the correct answer. Furthermore, the phrase "<i>in accordance with 2-AOI-85-7, Mispositioned Control Rod</i>" provides a cue to the applicant that the Group 16 rod is mispositioned. It may be appropriate to refer to the RWM Block annunciator procedure instead of the AOI. Agree</p> <p>2. Q=K/A: (Borderline) The second part of this A2 K/A statement (use procedures to correct, control, mitigate) is not being tested because the applicant can use the title of the AOI (mispositioned rod) and see that the only rod in Group 16 is the one that must be moved. Disagree</p> <p>3. Job-Link: The operational validity is questionable. If the startup has already commenced with RWM out of service, then the startup would be stopped to place RWM back in service. Is it operationally valid to return RWM to service in the middle of a situation where one rod group isn't at its withdraw limit Agree</p> <p>Rework question to test a situation where RWM is in service and the operator inadvertently withdraws rod 30-59 (given the same rod status in the proposed question). Test the applicants' ability to predict what will happen on the RWM screen and the required actions in accordance with ARP 9-5B, W35.</p> <p>Recommend – 1. Accept Bruno's recommendation.</p> <p>Rewrote the question to the suggested question MAB 11-6-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
55	H	2	x							x				N	E	<p>T2G2 202000 A1.07</p> <p>1. #/units: Include the instrument's UNID # that the core flow values are being obtained from in the two bullets. In other words, the question should be precise to the exact value of core flow after the mid power runback pushbutton is depressed. Is it a meter on the board? Is it on the power-to-flow-map?</p> <p>2. Stem Focus: The 2nd sentence in the stem is confusing because the word "a" is capitalized. ("Subsequently A manual Recirc Pump runback is inserted.") Suggest re-wording this sentence to say "Subsequently, a power reduction is required and the operator has depressed one of the runback pushbuttons."</p> <p>3. Stem Focus: A portion of the 2nd fill-in-the-blank belongs in the stem. The part about following completion of the manual runback the lower medium push button is depressed needs to be in the stem.</p> <p>The question seems awkward because of the interplay between the 1st and 2nd fill-in-the-blank statements. Consider revising the question to be more clear. The intent is simply to test the applicants' knowledge of 1) how far back core flow will go if the Mid-power runback pushbutton is depressed and 2) how much one push of the Lower Medium push button is worth. Why not simply ask that?</p> <p>Recommend – The intent is simply to test the applicants' knowledge of 1) how far back core flow will go if the Mid-power runback pushbutton is depressed and 2) how much one push of the Lower Medium push button is worth. Why not simply ask that?</p> <p>Talk to Keith for his corrections KN-recommendation 1. UNID included 2. Replaced A with a, added a power reduction is required. 3. Moved a portion of part 2 to the stem. Note: The mid power runback lowers Total steam flow to 78.5% this question asks the operator to analyze core flow and determine which runback was inserted.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
56	F	2	x			x	x							N	U	<p>T2G2 215001 K1.02</p> <p>1. Cred Dist: The 1st part of Choices B and D (PEDS) is not plausible because it is impossible to use PEDS to retrieve TIP data. We feel Plant Engineering Data Storage computer application is plausible because it is used to display system parameters on displays in the control room and throughout the site.</p> <p>2. Partial: Choice A is also correct. In other words, just because the word "directly" is included in the 2nd fill-in-the-blank statement doesn't preclude Choice A from still being correct. Choice A is not also correct, TIP data is never used to calibrate the APRMs; they are calibrated using the heat balance and by adjusting the AGAFs. Also the APRMs are calibrated once every seven days using the heat balance data by SR-3.3.1.1.2 "APRM Output Signal Adjustment"</p> <p>3. Cred Dist: The plausibility of APRMs is border line. APRMs are made up of LPRMs. We feel that since the APRMs are provided nuclear flux data from the LPRMs this makes them very plausible as distracters.</p> <p>4. Stem Focus: Include the name of the acronym PEDS and ICS in the question. I agree we have put the names of PEDS (Plant Engineering Data Storage) and ICS (Integrated Computer System) in the question.</p> <p>Suggest writing a question that the applicants' will have to use an ICS printout (with thermal limits) to identify what the required action is given an out-of-spec thermal limit. In other words, test the applicants' knowledge of how an out-of-spec thermal limit is "fixed." That is, the out-of-spec thermal limit is "fixed" by running a tip trace (versus some other plausible distracter) and calibrating the LPRM. This, in effect, tests the "physical relationship and/or cause/effect" between the computer and TIPS.</p> <p>I would have to disagree with developing a question that has the applicants use an ICS printout I feel that would be covered by Generic K/A 2.1.19 "Ability to use the plant computer s to evaluate system or component status" tacked with a GFES K/A like 293009. which would not match my K/A concerning the knowledge of the physical connections and/or cause effect relationships between Traversing In-Core Probe and the following: Process computer.</p> <p>Other ideas for this K/A could include testing the applicants' knowledge of whether ICS can/cannot be used to view TIP trace data. OR....test the applicants' ability to select an ICS screen path to get to the TIP data.</p> <p>Job link – The ROs run TIPs but Reactor Engineering collects the data. The UOs have no requirement to be able to find this data.</p> <p>MAB 11-6-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws					5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only				
57	H	2	x				x							N	E	<p>T2G2 223001 K6.09</p> <p>1. Partial: Choice D can also be correct. Suppression chamber to-drywell vacuum breakers prevent an excessive negative differential pressure across the wet well- drywell boundary in the event of inadvertent drywell spray actuation (steam condensation from sprays) or sub cooled water re-flood of a break in the event of a primary system rupture. Choice D says that EXTERNAL DESIGN PRESSURE is REACHED. Choice D could also be interpreted to mean that the external design pressure of the ring header (differential pressure across the wet well – drywell boundary) is excessive.</p> <p>2. Stem Focus: For this specific question, the use photographs (instead of computer generated illustration) may be easier for the applicants. This illustration was confusing.</p> <p>3. Stem Focus: Refer to Tech Spec LCO 3.6.1.6, Suppression Chamber-to-Drywell Vacuum Breakers in the 1st fill-in-the blank. Also, clarify that the 1st fill-in-the-blank statement by saying that the LCO is/is NOT met (instead of asking if an "LCO" is required.)</p> <p>Suggest re-working the 2nd part of the question by going to the Tech Spec Bases B3.6.1.6 and selecting RO knowledge items to test <i>how</i> a loss of the torus-to-drywell vacuum breakers affects the primary containment during a LOCA.</p> <p>Recommend – KN</p> <p>1. Disagree- The vacuum breakers are designed to open to prevent exceeding design negative pressure in the Drywell so one being INOP due to being open will not cause the Drywell to go negative. Changed "allow" in part 2 to "cause" and specified Drywell external design pressure.</p> <p>2. Inserted a note to clarify the picture.</p> <p>3. Agree made change</p>	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only		
58	H	1.7	x			x							N	E/U	<p>T2G2 226001 K3.02</p> <p>1. Do any scenarios have the same spray valve interlock indications involving a spray malfunction? One scenario has something similar but is different enough to prevent overlap between the written and operating Exams.</p> <p>2. LOD=1.7: Why are both lights Off? The question would have more discriminatory value if one of the lights were ON. Since both lights are OFF, the plausibility of drywell temperature lowering is questionable. The 1st portion of the question solely tests the applicants' knowledge of a LOCA signal. The 2nd part of the question (portion hitting the K/A) is LOD = 1.7. Changed the picture to make one light on and one off, and they are opposite in the scenario.</p> <p>3. Cred Dist: The 2nd part of Choices A and C (DWT lowers) may not be plausible because the stem doesn't indicate that any RHR pumps are running yet. In other words, even if there were no spray interlock malfunction, DW temperature would remain the same because the stem doesn't say that RHR pumps are already running. Adopted NRC recommendation for stating the attachment was complete through step 6, however since they are not given the attachment, I spelled out what step 6 did in the stem</p> <p>4. Stem Focus: The 2nd fill-in-the-blank statement needs to use the phrase "...are placed to the OPEN position, ..."</p> <p>Suggest changing the illustration to address Comment #2 and then using the same question as...</p> <p><i>The reactor automatically scrammed due to a steam leak in the drywell. Current conditions are:</i> <input type="checkbox"/> RPV level: (-) 75 inches <input type="checkbox"/> Reactor pressure: 580 psig <input type="checkbox"/> Drywell pressure: 10 psig <input type="checkbox"/> Suppression Chamber pressure: 11 psig <input type="checkbox"/> Drywell temperature: 265°F</p> <p><i>The crew is implementing 2-EOI-Appendix-17B, RHR System Operation Drywell Sprays and has completed Step 6.</i></p> <p><i>WOOTF completes both statements? [Consider each statement separately.] Based on the switch indications, this loop of RHR _____ be placed into drywell sprays.</i> Adopted ½ NRC recommendation for stating the attachment was complete through step 6, however since they are not given the attachment, I spelled out what step 6 did in the stem and maintained the second part of the question to maintain true to the K/A.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
58	H	1.7	x			x							N	E/U	According to EOI-2, emergency depressurization is required if drywell temperature cannot be restored and maintained below _____
59	F	2	x										N	E	T2G2 226001 K3.02 1. Stem Focus: Add the number/title of the procedure being used to put Loop 1 into suppression chamber sprays. Added the procedure and title in stem. 2. Stem Focus: The term "div 1" is inconsistent with Q#58. In other words, use either the term "division 1" OR "loop 1". Changed to Loop 1 to make consistent 3. Stem Focus: The parenthesis Pump(s) is not necessary in the stem question. Removed 4. Stem Focus: The 2 nd sentence is not necessary. Removed 5. Stem Focus: Modify the stem question as "WOOTF identifies the power supplies for the Loop 1 RHR Pumps that may be placed in torus sprays?" Accepted Bruno's recommendation and changed question. MAB 11-6-14
60	F	2	x										N	E	T2G2 233000 A4.05 1. Stem Focus: To raise plausibility of Choice C (temperature is accurate), re-word the 2 nd fill-in-the-blank statement as <i>The fuel pool temperature indication on Panel _____ is _____.</i> The second Fill-in-the-blank was changed to reflect those changes recommend. 2. Stem Focus: The 3 rd bullet is not necessary. Removed MAB 11-6-14
61	F	2				x							N	E	T2G2 239001 K4.05 1. Cred Dist: (Borderline) The plausibility of the 2 nd part of Choices B/D (200% set point) is borderline because the parameter is Main Steam. The set point for Main Steam Flow would never be 200% because this is twice the design of what the reactor is designed for, and not conservative. Consider changing to 150% to match RCIC set point. Accepted Bruno's recommendation and changed the B/D distracters to 150%.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
62	F	3											N	S	T2G2 256000 G2.2.4	
63	H	2				x							N	U	T2G2 271000 K3.02 1. Cred Dist: Choice B is not plausible because of the interplay between the fill-in-the-blanks. That is, it is not plausible for release rate to remain the same when the isolation valve closes. 2. Cred Dist: Choice C is not plausible because of the interplay between the fill-in-the-blanks. That is, it is not plausible for the release rate to lower when the isolation valve remains open. Suggest the following: <i>All three units are operating at 100% power. Subsequently, 2-RM-90-265A, Offgas Post Treatment Rad Monitor, fails upscale (Hi-Hi-Hi). WOOTF completes both statements? [Consider each statement separately.] In accordance with 0-SI-4.8.B.1.a.1, Airborne Effluent Release Rate, the total site release rate fraction must be ≤ _____. (0.1 vs 1)</i> <i>Based on the 2-RM-90-265A failure, the total site release rate fraction value will _____. (lower vs remain the same)</i> Recommend –KN Replaced with a new question due to the number of Radiation monitor related questions.	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
64	F	1				x								N	E/U	<p>T2G2 290002 K5.03</p> <p>1. LOD=1: The proposed question does not test plant specific information; the proposed question is solely generic fundamentals. [See 292007, Fuel Depletion & Burnable Poison, K1.01].</p> <p>2. Cred Dist: (Borderline) The plausibility of both portions of each choice is questionable. Boron is not a "burnable" poison.</p> <p>Uranium is only enriched with U235.</p> <p>We may need to change out the K/A; on the other hand, there may be enough literary license with the term "burnable poison" to keep the K/A and write a question dealing with MELLLA attributes, such as spectral shift, listed in lesson plan 173.022.</p> <p>That is, Moderate Spectral Shift MELLLA operation extends the life of the core by plutonium production in the upper region and has the disadvantage of increased susceptibility of thermal hydraulic instability following a recirc pump trip.</p> <p>Recommend –</p> <p>1. Try to use plant information to make it not a GFES question.</p> <p>2. Provide justification that since Boron is a poison (albeit not burnable) is plausible. and that U238 is plausible or change it to Plutonium.</p> <p>Get new K/A called Bruno 11-6-14 MAB</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws					5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only				
65	H	2				x								B	E	<p>T2G2 290003 A3.01</p> <p>1. The distracter analysis was incorrect for the proposed question. That is, the distracter analysis was written for the Rx/Refuel Zone radiation monitors whereas the proposed question only deals with the Control Room Intake radiation monitors. You are correct, it has been revised</p> <p>2. Cred Dist: The plausibility Choice A (both CREV units automatically starting) is borderline because the control board has a selector switch. Also, Choice A doesn't address the issue of whether the damper opens first. The savvy test-taker can read Choices B and C and know that Choice A obviously can't be right because it doesn't contain the word immediately and because it doesn't address the question posed via Choices B and C. But the main issue is that there is a control board selector switch. Actually there is a selector switch, however if flow is not sensed after the first unit starts, the second one will start.</p> <p>Suggest adding a fill-in-the-blank statement as follows:</p> <p><i>WOOTF completes both statements?</i></p> <p><i>Regarding the Control Room Isolation Radiation Monitors 0-RM-90-259A & B, high radiation at one detector location _____ initiate CREV. (will vs will not)</i></p> <p><i>During a CREV initiation, the selected CREV unit starts _____. (after the inlet damper is full open vs immediately before the inlet damper begins opening)</i> Accept Bruno's suggested replacement question and revised this one to match his suggestion. MAB 11-6-14</p>	
66	F	2					x							N	E/U	<p>T3 G2.1.19</p> <p>1. Partial: There are too many ways an applicant can argue that any of the choices is correct based on the wording of the stem question and choices.</p> <p>Rework or replace question.</p> <p>Reworked this question to make it a two fill-in-the-blank question focusing it on generic indications and general use rule.</p>	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
67	F	2	x				x							N	E	<p>T3 G2.1.6</p> <p>1. Stem Focus: The 2nd part of the question is only asking whether the STA has to assume the advisory role when an AOI is entered. (All choices include EOIs). Eliminate EOIs from choices.</p> <p>2. Partial: OPDP-1, Section 7.1 has a phrase that is missing in the fill-in-the-blank statement. The missing phrase is “...as required by the instruction.” This makes manning the STA position OPTIONAL when the AOIs are entered. Therefore, Choices C and D are BOTH correct.</p> <p>Recommend – KN 1 and 2 Agree-Revised question replaced part 2 by writing a new part 1 former part 1 became part 2.</p>
68	F	2	x			x								B	U	<p>T3 G2.2.17 Clinton NRC Exam (year/question?)</p> <p>1. Cred Dist: Choices A, C, & D are not plausible because they do not have an SRO license. The only choice that represents another SRO license is also the correct answer. The fill-in-the-blank statement tells the applicants that the Shift Manager grants access to work on or near protected equipment.</p> <p>Therefore, IF the SM normally grants access to work on or near protected equipment THEN it is logical to assume that only another SRO licensed individual is the designee when the SM is unavailable.</p> <p>2. Please provide Clinton exam number.</p> <p>3. Stem Focus: The stem question implies there are two fill-in-the-blank statements even though there is only one.</p> <p>Recommend – KN 1. Agree; Reword the question to remove Shift Manager from the stem. 2. Reference to Clinton question should have been deleted when question was changed prior to submitting. 3. Agree; Resolved stem wording.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws					5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
69	F	2	x			x								B	E	<p>SAMPLE QUESTION provided on 8-20-14</p> <p>T3 G2.2.2 (2011 NRC Exam, Q#69)</p> <p>1. Cred Dist: Choice B is not plausible because the 1st and 2nd part don't go together. In other words, Choice B is saying that single notch starts at five doubles and continues until the reactor is critical. Since the reactor IS critical at five doubles, this makes the starting point of single notching not plausible.</p> <p>2. Stem Focus: The term "heating range" needs to be further defined to test the applicants' knowledge of what this term means.</p> <p>3. Stem Focus: The stem question and choices can be streamlined to match the procedure as follows:</p> <p><i>WOOTF completes both statements in accordance with 1-GOI-100-1A, Unit Startup?</i> <i>The _____ count rate doubling has been chosen as a starting point to limit rod withdrawal to single notch movement.</i> <i>Once required, control rod withdrawal is limited to single notch withdrawal until reactor power is _____.</i> A. fourth; IRM Range 7 <i>B. fourth; [some other plausible power value]</i> <i>C. fifth; IRM Range 7</i> <i>D. fifth; [some other plausible power value]</i></p>
69	F	2	x											B	E	<p>T3 G2.2.2, 2011 BFN Exam, Q#69</p> <p>1. Stem Focus: I'd prefer the previous suggestion; however, if you prefer not having fill-in-the-blank statements, streamline as follows:</p> <p><i>Unit 1 Plant startup is in progress in accordance with 1-GOI-100-1A, Unit Startup.</i></p> <p><i>When is control rod withdrawal limited to single notch withdrawal and when may continuous rod withdrawal be resumed?</i></p> <p>A. At the fourth SRM count rate doubling; once IRMs are on Range 7 B. At the fifth SRM count rate doubling; once IRMs are on Range 7 C. At the fourth SRM count rate doubling; once IRM/APRM overlap is verified D. At the fifth SRM count rate doubling; once IRM/APRM overlap is verified.</p> <p>Accepted Bruno's suggested question and changed our question to match it. Done MAB 11-6-14</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
70	F	5											N	E	T3 G2.2.40 1. LOD=5: This is SRO knowledge. Replace question. Replaced question with a question concerning TS 3.0.3 completion times (RO Knowledge).
71	H	2									x		B	U	T3 G2.3.11 1. Q=K/A: The Tier 3 aspect (administrative requirements) of this K/A is not being tested. Instead, the proposed question tests the applicants' knowledge of a design feature or interlock (Tier 2) that provides for automatic isolation to contain the radioactive release (fail safe tripping of process rad monitoring). See similar K/As in 272000, Rad Monitoring System, K4.03, A3.03,A1.01, etc. Suggest writing a question to test 0-SI-4.8.A.1-1 <i>administrative requirements</i> when a radiation monitor is inoperable and a release must be performed. If no liquid releases are performed at BFN, then the gaseous release administrative requirements in 0-SI-4.8.B.1.a.1, Airborne Effluent Release Rate could be tested. 2. Ensure no overlap with Q#63. Recommend – Need to come up with a generic admin requirement for an RO to limit rad releases. Stay away from SRO only knowledge. 1. Agree; Rewrote question as generic admin at RO level. 2. Verified no overlap with Q#63.
72	F	2				x							N	U	T3 G2.3.15 1. Cred Dist: It is NEVER wrong to call RadCon when a high radiation alarm is received. Choices A/B are not plausible because they imply to NOT call RadCon because of the word "ONLY." Moved the words "notify Radcon to survey the area" to the stem and remove it from all the selections. Then changed two distracters to plausible but incorrect answers.
73	F	2				x							B	U	T3 G2.3.7 1. Cred Dist: The 2 nd part of Choices A/C is not plausible because the 1 st fill-in-the-blank says that IMMEDIATE entry has been authorized by the Shift Manager. A savvy test-taker could (correctly) guess that "IMMEDIATE" entry implies no stopping by RP Window to get on the RWP. Recommend – KN 1. Agree changed the second part of question to address the RWP requirement following exit from the area.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
74	F	2				x	x							B	E	<p>T3 G2.4.29 2010 Nine Mile Point, Q#75</p> <p>1. Cred Dist: Choice A (main control room) is not plausible because the main control room ordinarily has command and control of emergencies; therefore, a savvy test taker could (correctly) guess that the main control room is NEVER in charge after all emergency response facilities are activated.</p> <p>2. Partial: An applicant could successfully argue that Choice D (CECC) is also correct because the stem uses the phrase "command and control of the emergency response." CECCEIP-1, Section 3.3 states that the CECC is responsible for directing TVA's overall response to the emergency, which could reasonably be construed as "command and control of the emergency response." The stem wording is vague.</p> <p>Rewrote the question to read "iaw the Rad Emerg Plan; who by title has command and control once the turnover has been completed by the on-call SED and the SM? Also set it up that the TSC does not have minimum staffing when the turnover is completed.</p> <p>Made Rev 4 see what you think</p>
75	F	2	x											N	E	<p>T3 G2.4.5</p> <p>1. This question overlaps Q#99 (double jeopardy). Changed question 99 to prevent DJ concern.</p> <p>2. Stem Focus: Consider converting to a fill-in-the-blank style, for clarity.</p> <p><i>WOOTF completes both statements in accordance with 0-SSI-1, Safe Shutdown Instructions?</i></p> <p><i>_____ are allowed to be implemented in parallel with the EOIs. While these procedures are being implemented in parallel, IF there is a conflict between a SSI and an EOI, THEN the _____ takes precedence.</i></p> <p>Accepted Bruno's recommendation and changed the question to match his suggestion.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
76	H	3	x	x		x							B	E/U	<p>T1G1 295006 G2.4.30 2010 BFN Exam, Q#100</p> <p>1. Cue: The reference being provided for this question (SPP-3.5) makes the 2nd part of Q#100 a direct lookup.</p> <p>2. Cred Dist: (Borderline) The inter-play between the two fill-in-the-blank statements makes the 1st part of Choices B/D not plausible. In other words, since the applicant is told that the NRC is required to be notified, THEN, a savvy test taker can (correctly) guess that the ODS will also be notified.</p> <p>3. Cue: The ending phrase in the 4th bullet ("...and the UO verified that all appropriate Automatic Actions occurred.") is not necessary to elicit the correct response.</p> <p>4. Stem Focus: The 4th bullet is missing Unit 1.</p> <p>5. Stem Focus: The 4th bullet can be streamlined as "While raising VARS, the GEN VOLTS PER HERTZ HIGH annunciator (9-8, W9) was received on Unit 1, and remained in alarm."</p> <p>To remedy comment #2, suggest deleting the ODS fill-in-the-blank statement and re-working question to test some aspect of how the four hour notification is required to be performed.</p> <p>Alternatively, keep in mind, that the K/A doesn't have to deal with the Grid Instability. We can TELL the applicant that a manual scram was inserted as a part of shutting down the unit to comply with a Tech Spec LCO, and then test their knowledge of the reporting requirements. In other words, the LCO entry could be UNPLANNED, but the corresponding GOI shutdown, including the manual scram, is a part of a "preplanned sequence" as defined in the definitions section of SPP-3.5.</p> <p>Recommend – KN</p> <p>1. Ensure that the reference does not provide the answer to Q 100</p> <p>2. Question revised to address issue 2-5</p> <p>3. Accepted first recommendation and part of the second.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
77	H	3				x	x							M	E	<p>T1G1 295021 AA2.02 BFN 2012 NRC Exam, Q# 79</p> <p>1. Draft Exam Submittal includes three E-plan call questions on the SRO exam (Q#77, 82, & 98). Try to limit the number of E-plan call questions to two, if possible.</p> <p>2. Partial: E-plan classification is based on reactor moderator temperature. The proposed question lists reactor bottom head temperature. There may be no correct answer to the question because the reactor moderator temperature is not provided in the stem. What is the BFN requirement for determining reactor moderator temperature? Where is it listed?</p> <p>Correct where the MODE change temperature would be indicated, The Reactor bottom head temp is one of the points tracked for moderator Temp in both the heatup and cooldown SRs as well as the RPV head Temp Monitoring 2-SR-3.4.9.1(1) and 2-SR-3.4.9.5-7</p> <p>3. Cred Dist: Choice B is not plausible because of the inter-play between the 1st and 2nd fill-in-the-blank statements (an ALERT declaration is being made and shutdown cooling IS considered in service.)</p> <p>The distracter B is plausible, an Alert is required if moderator temperature rises above 212 during a TS required SD, independent of whether or not SDC is in operation .</p> <p><i>The unit is in Mode 4 with the following conditions:</i></p> <p><input type="checkbox"/> Loop 2 RHR in shutdown cooling with the 3D RHR Pump operating</p> <p><input type="checkbox"/> The 3D RHR hx inlet temperature (3-TR-74-80) is 200°F.</p> <p><input type="checkbox"/> No Recirc Pumps are operating</p> <p><input type="checkbox"/> RPV level is 85"</p> <p><i>During turnover, the oncoming shift observes that the RHR SD CLG FLOW LOW annunciator (9-3D, W11) is in alarm.</i></p> <p><i>Subsequently, the crew throttles open the injection valve (Unid#) and the alarm clears.</i></p> <p><i>WOOTF completes both statements in accordance with Tech Spec Bases 3.4.8, RHR Shutdown Cooling System – Cold Shutdown?</i></p> <p><i>Tech Spec LCO 3.4.8 requirements _____ met during the time the annunciator was in alarm. (were still vs were not) Ambient heat losses _____ allowed to be credited as an alternate decay heat removal method. (are vs are NOT)</i></p> <p>Alternatively, write a question where SDC'g operation was interrupted due to a RPS MG set trip. The crew is pursuing the actions to place RPS on alternate and the reactor coolant temperature is 200°F and rising. Is the event reportable per SPP-3.5? (yes) Is an emergency classification required? (no)</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
78	H	2	x			x		x						M	U	<p>T1G1 295023 G2.4.21</p> <p>1. Job-Link: The operational validity of one spent fuel bundle causing General Emergency I-131 levels at the site boundary is questionable. Secondary Containment isn't required to be operable during refueling because dose limit at the site boundary can't get to GE level. On a similar note, the operational validity of performing a GOI-100-12A normal shutdown (versus scrambling the reactor per EOI-1) during a General Emergency is questionable. Changed the number of fuel bundles damaged in the SFP to make it plausible that rad levels at the site boundary are at the GE level. Also since the offsite release is being caused by the SFP vs. Reactor, a normal shutdown is appropriate and procedurally directed. At BFN Secondary Containment is required.</p> <p>2. Cred Dist: Choice B is not plausible because of the REASON it contains; the stem says a fuel bundle was damaged; therefore, shutting down the operating reactor won't limit the release of radioactivity from secondary containment. Procedure application error since the EOI is not being provided makes scram and depressurization plausible. In fact validation data shows that distracter B was chosen. When filling out REP Appendix A the SROs are trained to indicate that there are (minor) releases in progress, shutting down would lower these releases.</p> <p>3. Cred Dist: Choice D is not plausible because of the REASON it contains; the stem says a fuel bundle was damaged; therefore, scrambling and emergency depressurizing won't limit the release of radioactivity from secondary containment. Procedure application error since the EOI is not being provided makes scram and depressurization plausible.</p> <p>4. Stem Focus: The word "indicated" in the 3rd bullet should be "Field Assessment Team."</p> <p>4. Change to Bruno's Recommendation.</p> <p>5. Stem Focus: The word "numerous" in the 4th bullet should be specific.</p> <p>5. Change to Bruno's recommendation.</p> <p>6. The knowledge required for the 2nd portion of this question overlaps the knowledge in Q#84; will ED reduce discharge into Secondary Containment.</p> <p>The difference between this question and Q#84 is that >2 areas are above max safe but caused by fuel pool not reactor, and Q#84 is one area approaching Max Safe but it is coming from the reactor and a shutdown or ED would help.</p> <p>Suggest writing a question that involves a refueling activity where a control rod drive is being removed (OPDRV) and fuel pool gates are removed; test the POI-200.5 parameter/logic used in Step 5.2 to determine when OI-78 is used to makeup vs RWCU, CRD, FW, etc is used during an OPDRV scenario. An OPDRV scenario could meet the intent of the K/A for Refueling Accidents if the vessel head is removed during a refueling outage.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
79	H	3	x			x								M	E	<p>SAMPLE QUESTION provided on 8-20-14 T1G1-295026 EA2.03 (2014 NRC Exam, Q#79)</p> <p>1. Cred Dist: To ensure plausibility of Choices C & D, the operating point on Curve 3 should be in the UNSAFE area. In the proposed test item, the intersection of 180°F and 16 ft. is UNDERNEATH the 900 psig curve, which means that it's SAFE.</p> <p>Change the stem conditions such that the HCTL is being exceeded to ensure plausibility of anticipation (Choice C) and emergency depress (Choice D); otherwise, these two choices are NOT plausible.</p> <p>2. Stem Focus: Streamline each of the 4 choices as follows: A. Do NOT completely depressurize the RPV; instead, lower reactor pressure while maintaining $\leq 100^\circ\text{F/hr}$. B. Do NOT completely depressurize the RPV; instead, lower reactor pressure, okay to exceed 100°F/hr. C. Rapidly depressurize the RPV using the main condenser bypass valves. D. Emergency depressurize the RPV using the safety relief valves.</p> <p>Note to NRC examiners: Although there are no procedures listed in any of the choices, this question still targets the 10 CFR 55.43(b)(5) [Assessment and selection of procedures] topic because the choices represent a diagnostic step and decision point in the EQI that involve a transition to an emergency contingency procedure (1-C-2, Emergency Depressurization or Anticipation of Emergency Depressurization).</p>
79	H	3					x							B	E	<p>T1G1 295026 EA2.03</p> <p>1. Partial: Is there a difference between the correct answer (Choice B) and Choice D? Actually Yes – ED continues to Low Pressure ECCS injection shutoff head pressure to allow LP ECCS to inject; Lower reactor pressure, OK to exceed 100F/hr is the allowance to partially lower pressure (just lower it low enough to prevent entering the unsafe area of the HCTL curve).</p> <p>Suggest clarifying Choice D as "Do not ED; Lower Reactor Pressure, OK to exceed 100°F/hr." Accepted Bruno's suggestion and changed the question.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
80	H	3	x											M	E	<p>T1G1 295028 EA2.05 BFN 2006 NRC Exam, Q#78</p> <p>1. Stem Focus: The word "appropriate" in the stem question is subjective. Instead, suggest using the word "required."</p> <p>2. Stem Focus: Replace each of the choices with the procedure name/number instead of the action; this provides the same knowledge being tested and better parallels 10CFR55.43(b)(5) procedure selection.</p> <p>Recommend – KN</p> <p>Accepted comments, changed question accordingly.</p>
81	H	3	x			x								N	E	<p>T1G1 295037 EA2.03</p> <p>1. Cred Dist: Choice A is not plausible because continuing to raise level despite SRM period alarms and losing APRM downscals will add more positive reactivity and make things worse. Actions during an ATWS for RPV Flooding (C-4) have the Operator start and slowly raise injection and actually raise power to establish a steam pressure to ensure steam flow cooling through open MSRVs. We feel because this is a valid action for flooding however not in this case the distracter is plausible and not correct.</p> <p>2. Stem Focus: The "reason" for why level is being initially restored would be clearer if the SLC tank level was provided in the 1st set of plant conditions. I agree, put in SLC Tank level</p> <p>3. Stem Focus: The 9th bullet ("Multiple Nuclear Instrumentation alarms") is not necessary. I agree, removed the 9th bullet from the question</p> <p>4. Stem Focus: Instead of using the phrase "describes the action(s) that is (are) directed..." in the stem question, use the phrase "describes the required action..."</p> <p>4. I agree, change the words.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
82	H	3	x			x		x		x				N	E	<p>T1G1 295038 G2.4.41</p> <p>1. Job-Link: The operational validity of the 2nd bullet is questionable. The 2nd bullet says a manual reactor scram was performed even though 2-AOI-68-3 only requires tripping the pump. The premise of the 2nd bullet seems odd in that after the pump was manually tripped its speed still could not be controlled. Suggest streamlining the stem to simply say that The 2A Recirc Pump speed could not be controlled and the crew tripped the pump.</p> <p>2. Stem Focus: The word "correct" in the stem question should be replaced with "highest required"; WOOTF is the highest required Emergency Action Level Designator?</p> <p>3. Cred Dist: To make Choice "A" plausible, change the 2-RE-90-273A reading to 297 R/HR.</p> <p>4. #/units: The noun name for 2-TIS-1-60C, 2-RE-90-272A and 90-273A should be included in the stem.</p> <p>5. Stem Focus: The 4th bullet is not necessary. If the MSIVs weren't manually closed when the recirc pump runaway event occurred, they will automatically close when MS tunnel temperature reaches 189°F.</p> <p>6. Stem Focus: The 5th bullet ending phrase "..and 2-AOI-100-1 is in progress" is not necessary.</p> <p>7. Stem Focus: The 8th bullet lead-in phrase "BOP operator reports.." is not necessary.</p> <p>Note to NRC Reviewers: The High Offsite Release topic is being tested in that the basis for the E-plan classification is that a ground level release will occur following an unisolable main steam line break.</p> <p>Recommend – KN</p> <p>1. Agree, revised wording.</p> <p>2. Agree, revised</p> <p>3. Agree changed to 300 for readability.</p> <p>4. Agree, used noun names</p> <p>5. Disagree, crew should not wait on 189° to close MSIVs</p> <p>6. Agree, removed end of bullet</p> <p>7. Agree, removed the BOP reports.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws					5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only				
83	H	3		x		x	x							M	E	<p>T1G2 295015 AA2.01</p> <p>1. Partial: Technically, Choice A is also correct because RC/Q is the only procedure used to control power. C-5 is used to control LEVEL. [See EOI Program Manual 0-V-C]. Alternatively said, Choices C & D are not plausible because they each contain TWO procedures for power control. In the EOIs, LEVEL control is transferred to C-5; however, POWER control remains in RC/Q. There is no exit path out of RC/Q to C-5; therefore, an applicant can (successfully) argue that there is Choice A is also correct in the post-exam arena.</p> <p>2. Cred Dist: Choice B is not plausible because the stem says that EOI-1 was entered. Exiting the EOI is a SM judgment call and would not be performed until a later time. See proposed fix below to remedy this plausibility concern.</p> <p>3. Cue: The first sentence phrase "...experienced an ATWS" is not necessary. Replace with "scrammed."</p> <p>4. Cue: The 3rd bullet is not necessary to elicit the correct response.</p> <p>5. Cue: The 6th bullet is not necessary to elicit the correct response.</p> <p><i>On Unit 1, the crew was performing 1-GOI-100-12A, Unit Shutdown from Power Operation to Cold Shutdown and Reductions in Power During Power Operations, Attachment 1, Reactor Scram from ≥ 40% Power. In accordance with Attachment 1, the crew entered 1-AOI-100-1, Reactor Scram, and inserted a manual scram.</i></p> <p><i>Following the scram, 19 control rods remained at position 48 and RPV level lowered to 0". The following conditions currently exist:</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Reactor Power on Range 8 of the IRMs<input type="checkbox"/> Recirc Pump speeds are at minimum<input type="checkbox"/> MSIVs are open and RPV pressure is stable on the bypass valves<input type="checkbox"/> RPV level is (+) 3 inches <p><i>WOOTF identifies the required procedure for power control?</i></p> <p>Recommend – KN</p> <p>1. Disagree C5 as its name implies is level/power control and EOIPM O-V-R discussion for step C5-5 supports this.</p> <p>2. Disagree it is plausible because if the Reactor is subcritical RC/Q-2 directs exiting RC/Q (not EOI-1) to 1-AOI-100-1</p> <p>3. Agree made change</p> <p>4. Disagree it is required to address RC/Q-2 second override and it makes B more plausible.</p> <p>5. Agree but ATWS actions complete is an expected report from the OATC, moved this bullet up and deleted the second bullet instead. Justifications updated.</p>	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
84	H	2		x									M	E	<p>T1G2 295032 EA2.02 BFN 2011 NRC Exam, Q#85</p> <p>1. Direct Lookup: The proposed reference to be provided to the applicants is Caution 1 (including Curve 8 and Table 6); IF the EOI-3 version of Table 6 is provided to the applicants (instead of the EOI-1 version of Table 6), THEN the 1st fill-in-the-blank statement becomes a direct lookup because temperature element 69-29G is listed in the stem.</p> <p>1. EOI-1 and 3 caution 1, curve 8, and table 6 are the same so they are not being provided to the candidates.</p> <p>2. Cue: The word UNISOLABLE provides a cue that 2-GOI-100-12A is not the correct procedure.</p> <p>2. OK deleted unisolable.</p> <p>3. The knowledge required for the 2nd portion of this question overlaps the knowledge in Q#78; will ED reduce discharge into Secondary Containment.</p> <p>This question was rewritten to test the SRO knowledge of procedure selection when presented with a Caution 1 concern.</p> <p>Wrote rev 3 which eliminates overlap with Q78 KN</p>
85	H	2		x								x	M	U	<p>T1G2 295034 G2.4.45</p> <p>1. SRO-only: The correct answer can be determined solely using RO knowledge as follows:</p> <p><input type="checkbox"/> Plant parameters that require entry to EOIs is RO knowledge. The stem includes two parameters that require EOI-3 entry > Refuel/Rx Zone high process rad & Hi Area Rad in the RWCU system area. Once the EOIs are entered, the OIs are no longer used (normally). Therefore, Choices A and C can be excluded based on this knowledge.</p> <p><input type="checkbox"/> The title of EOI Appendix 8E is provided in the stem, which is bypassing high drywell pressure or low RPV level interlocks. Drywell pressure and RPV level conditions aren't included in the stem, even if they were, the RO knowledge associated with the trip setpoints can be used to eliminate Choice B.</p> <p><input type="checkbox"/> Since Choices A, B, and C are eliminated, Choice D is the correct answer.</p> <p>2. Cue: The first sentence ending phrase "<i>due to actual high radiation</i>" is not necessary. Instead, the word "valid" can be used.</p> <p>Recommend –</p> <p>New K/A – unable to write an SRO only question with this K/A. See comments below for new question</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
85	H	3														T1G2 295010 G2.4.45 NEW K/A Wrote a new question to replace Q85. In this question the SRO is assessing annunciators on High Drywell Pressure and determining which one would require an Emergency classification.
86	F	2	x											M	E	<p>SAMPLE QUESTION provided on 8-20-14 T2G1 203000 G2.2.37 (2007 NRC Exam)</p> <p>1. Stem Focus: The applicants could get confused on this question because the fill-in-the-blank statements deal with two entirely different Tech Specs, and the stem of the question never lists which Tech Spec is being referred to.</p> <p>2. Stem Focus: The grammar in the first fill-in-the-blank statement is incorrect, "...still be considered an operable LPCI mode."</p> <p>3. Stem Focus: The first two bullets aren't necessary if the question is streamlined as follows: <i>WOOTF completes both statements for Unit Two?</i> <i>In accordance with the bases for Tech Spec 3.4.7, RHR Shutdown Cooling System — Hot Shutdown, there are a total of _____ RHR Shutdown Cooling subsystems.</i> <i>In accordance with the bases for Tech Spec 3.5.2, ECCS — Shutdown, if a RHR subsystem is operating in the shutdown cooling mode, then it _____ credited as an operable ECCS Injection subsystem.</i> <i>A. Two; is NOT allowed to be</i> <i>B. Two; can still be</i> <i>C. Four; is NOT allowed to be</i> <i>D. Four; can still be</i></p>
86	F	2	x											N	E	<p>T2G1 203000 G2.2.37</p> <p>1. Stem Focus: Provide titles of TS 3.4.7 and 3.5.2 in the stem.</p> <p>Recommend – KN Agree-Added titles</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
87	H	2	x			x	x						N	U	<p>T2G1 215004 G2.4.47</p> <p>1. Cred Dist: The 1st part of Choices C/D is not plausible because it implies that the RO can keep withdrawing rods at the same time he's bypassing the SRM. Even though the fill-in-the-blank statement says "the US directs", the expected protocol is for the RO to stop rod withdrawal, inform the US, bypass SRM C, and then continue rod withdrawal. Additionally, the following GOI-100-1A P&L says: Reworded the statements to clarify that the procedure requires bypassing the SRM "stop CR withdrawal then bypass the SRM".</p> <p>2. Direct Lookup: The proposed reference provided to the applicants is TS 3.3.1.2, which makes the 2nd part of the question (the SRO portion) a direct lookup.</p> <p>Since the candidate has to ascertain the range of the IRMs given SRM readings to determine that the Spec applies. Also the number of required channels prevents this from being a direct lookup.</p> <p>3. Partial: Choice B can also be (successfully) argued as correct because plant conservative decision making process would never allow continuing rod withdrawal with two SRMs inoperable (for the second portion of the question). Is there any BFN guidance which specifies that rod withdrawal can continue when TWO SRMs are inoperable?</p> <p>Actually since there are 4 SRMs and only 3 required for the LCO, having two inop affectively makes 1 required inop and rod withdrawal can continue according to TS.</p> <p>4. Stem Focus: The phrase "the US directs" is not necessary in the 1st fill-in-the-blank statement. It is always better to use the word "required" or "requires."</p> <p>Accepted Bruno's recommendation and removed "US directs".</p> <p>The G2.4.47 K/A requires testing the SRO applicants' ability to diagnose SRM trends. Perhaps explore the possibility of writing a discriminating question to test the SRO applicants' knowledge of the reason for why TS 3.3.1.2 SRM operability requirements differ in Mode 5. For example, CORE ALTERATIONS are allowed in a quadrant with no OPERABLE SRM in an adjacent quadrant provided the Table 3.3.1.2-1, footnote (b), requirement that the bundles being <i>spirally reloaded</i> are all in a single fueled region containing at least one OPERABLE SRM is met Whereas in nonspiral routine operations, two SRMs are required to be OPERABLE to provide redundant monitoring of reactivity changes occurring in the reactor core. The intent of the K/A could perhaps be met based on the ability to detect trends in the spiral vs nonspiral refueling activities.</p> <p>Another idea is to test the Fuel Handling procedures allowances / restrictions for using temporarily installed detectors.</p> <p>Actually, the SRM trending or "not trending" is the basis behind this question. The inability to trend neutron counts reliably makes the SRO determine that it cannot be used and is inoperable.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
88	H	3	x			x		x						M	E	<p>SAMPLE QUESTION provided on 8-20-14 T2G1 215005 A2.04 (2014 NRC Exam, Q#87)</p> <p>1. Cred Dist: (borderline) Choice "D" plausibility suffers because the stem doesn't include a timeline of events. In other words, the only way Choice "D" can ever be plausible is when the completion time of one of the other required actions wasn't met. Because the stem doesn't include the times when things occurred, Choice "D" isn't plausible.</p> <p>2. Job Link: OI-99, Illustration 3 (Actions to place RPS Instruments in Tripped Condition) does not include guidance for placing the Voters in a tripped condition. This needs to be discussed with Facility Rep because it could affect the operational validity of the proposed test item. Does OI-99 describe how to place a Voter channel in the tripped condition?</p> <p>3. Stem Focus: The phrase "most limiting" may not be the same as "MINIMUM required." When possible, use the term MINIMUM required. Suggest the following: Given the following timeline of events: 08:00 Unit 3 entered Mode 1 10:00 Voter 1 failed its surveillance and will NOT generate an output signal to RPS. 11:00 Voter 4 is discovered to have the same failure; will NOT generate an output signal to RPS. Assuming that the crew had taken no actions as of 12:00, which ONE of the following identifies the MINIMUM required Tech Spec action? Reference Provided A. Required Action A.1 OR A.2 must be performed by 22:00 B. Required Action B.1 OR B.2 must be performed by 17:00 C. Required Action C.1 must be performed at 12:00 D. Required Action G.1 must be performed by 23:00</p>
88	H	3												M	S	T2G1 215005 A2.04 BFN 2014 NRC Exam, Q# 87

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
89	H	2				x							N	E	<p>T2G1 218000 A2.02</p> <p>Note: This is a tough K/A, because ADS is designed for a SMALL break LOCA. Hard to see the relevance to a large break LOCA. Hopefully the new revision to NUREG 1123 will eliminate this K/A.</p> <p>1. Cred Dist: Choice C is not plausible because there are INHIBIT switches designed for this. The ARP 9-3C W11 action to continue resetting the timer is applicable in NON-EOI situations.</p> <p>Suggest revising the stem question and choices as follows:</p> <p><i>WOOTF identifies whether ADS is required to be inhibited and the procedure required for level control?</i></p> <p>A. <i>Inhibit ADS; EOI-1</i> B. <i>Inhibit ADS; C-1</i> C. <i>Do NOT Inhibit ADS; EOI-1</i> D. <i>Do NOT Inhibit ADS; C-1</i></p> <p>Recommend – KN Accepted suggestion however clarified the stem to prevent EOI-1 and C-1 from both being correct.</p>

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
90	H	2	x	x										N	E	<p>T2G1 223002 A2.07</p> <p>1. Cue: The 3rd sentence is not necessary if the other instrument UNID # is provided in the stem.</p> <p>2. Cred Dist: Need to add the phrase "earliest time that Unit 2 is required to be in Cold Shutdown" to enhance plausibility, based on the discussion in the distracter analysis.</p> <p>3. Stem Focus: Suggest the following enhancements: <i>Unit 2 is operating at 100% power when the following events occur:</i> <input type="checkbox"/> 6-1-14 at 09:00 Rx Vessel Steam Dome Press High (2-PIS-3-22AA) fails upscale causing a half scram. All Tech Spec required actions were taken. <input type="checkbox"/> 6-1-14 at 10:00 High Drywell Press (2-PIS-64-56B) fails DOWNSCALE.</p> <p><i>WOOTF identifies the earliest time that Unit 2 is required to be in Cold Shutdown if 2-PIS-64-56B cannot be restored to operable status or placed in the tripped condition?</i></p> <p><i>[Consider ONLY Tech Spec 3.3.6.1, PCIS Instrumentation requirements.]</i></p> <p>Recommend – KN Accept suggestion</p>

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
91	H	3	x	x		x							N	E	<p>T2G2 201001 A2.08</p> <p>1. Stem Focus and/or Cred Dist: The inter-play between the 1st and 2nd parts of Choices C/D makes these Choices confusing and/or not plausible. The question seems to be more complicated that it has to be.</p> <p>2. Cue: The illustration should only have ONE rod indicated adjacent to CRD 34-19. (See suggestion below.)</p> <p>3. Q=KA: (Easy fix) The low cooling water flow aspect of the K/A is questionable since the stem doesn't include anything related to low flow. Suggest incorporating a bullet stating that a CRD Pump tripped and was subsequently re-started. (see below)</p> <p>4. Cue: The stem sentence "Control Rod 34-19 is Declared SLOW" is not necessary. (see below)</p> <p>5. Stem Focus: The grammar for the 2nd fill-in-the-blank statement does not flow with the 2nd portion of each choice.</p> <p>6. Stem Focus: The bolded sentence (SEE THE ATTACHED ILLUSTRATION FOR CONTROL RODS PREVIOUSLY DECLARED SLOW) should be moved to the top since this was a pre-existing plant condition.</p> <p><i>Unit 3 is operating at 100% power with several control rods declared SLOW due to scram time testing data in accordance with Tech Spec 3.1.4, Control Rod Scram Times (See attached illustration).</i></p> <p><i>Subsequently, the CRD pump tripped and was restarted in accordance with 3-AOI-85-3, CRD System Failure. During the time the CRD pump was tripped, the CONTROL ROD DRIVE UNIT TEMP HIGH (9-5, W17) annunciator alarmed. ALL actions required by ARP 9-5, W17 were completed, CRD 34-19 temperature is now 351°F and stable.</i></p> <p><i>WOOTF completes both statements?</i> CRD 34-19 _____ required to be declared SLOW. (is vs is NOT)</p> <p><i>Tech Spec LCO 3.4.1 _____ met. (is vs is NOT)</i></p> <p>Recommend – KN</p> <p>1. Reworded question to simplify. The problem is that TS does not require the rod to be slow it also allows declaring it INOP</p> <p>2. if there is only one rod adjacent to it then the TS is met.</p> <p>3.agree but used issue with 85-11 to reduce flow</p> <p>4.Declaring 34-19 slow requires entry into TS 3.1.4 if it is declared INOP and actions taken then TS 3.1.4 is met</p> <p>5.agree</p>

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92	H	5	x							x				N	E/U	<p>T2G2 215001 G2.1.20</p> <p>1. LOD=5: This question is too confusing with the Illustrations. An applicant can appeal this question in the post exam arena because it's too cumbersome. (The intent of the proposed question seems to be to test SRO procedure selection by testing the location of the procedural guidance to fire the shear valve.)</p> <p>2. #/units: The AOI procedure number provided in Choices A/B is for RWCU Isolation; should be AOI-64-2E.</p> <p>Let's explore this option to see if it meets NUREG requirements for SRO...</p> <p><i>WOOTF completes both statements regarding the TIP system?</i></p> <p><i>The TIP ball valve _____ a primary containment isolation valve in accordance with Tech Spec 3.6.1.3, PCIVs. (is vs isNOT) (no reference provided)</i></p> <p><i>The procedure that contains guidance for firing the TIP Shear Valve when the ball valve fails to close is _____. (OI-94 vs AOI-2A)</i></p> <p>Another option may include testing the required actions when either the ball valve or the shear valve is inoperable per Tech Spec 3.6.1.3. This would satisfy the intent of the K/A with respect to "ability to interpret and execute procedure steps" at the SRO level. There is plausibility for TS 3.6.1.3 Actions A, B, C, and D based on the applicants' knowledge of whether the ball valve and shear valve qualifies as two isolation valves or whether ONLY the shear valve is the only qualified PCIV.</p> <p>For future reference (during discussions) TI-360 information is listed on page 49 of 126:</p> 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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation										
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A				SRO Only									
93	H	2	x			x							N	U	<p>T2G2 272000 A2.02</p> <p>1. Cred Dist and/or Direct Lookup: The 2nd part of Choices B/D is not plausible because the applicants are provided the Tech Spec 3.4.5 as a reference. (Not providing a reference means LOD=5) The reference provided lists:</p> <table><tr><td rowspan="3">B. Required primary containment atmospheric monitoring system inoperable.</td><td>B.1</td><td>Analyze grab samples of primary containment atmosphere.</td><td>Once per 12 hours</td></tr><tr><td colspan="2">AND</td><td></td></tr><tr><td>B.2</td><td>Restore required primary containment atmospheric monitoring system to OPERABLE status.</td><td>30 days</td></tr></table> <p>2. Stem Focus: The 1st fill-in-the-blank statement is vague because it doesn't specify that it pertains to the time when RPS Bus "A" was initially lost. Rewrote the question with a timeline and ask when the unit has to be in hot shutdown due to entering TS 3.0.3 immediately when both the Rad Monitor CAM and the leakage detection systems are inoperable.</p>	B. Required primary containment atmospheric monitoring system inoperable.	B.1	Analyze grab samples of primary containment atmosphere.	Once per 12 hours	AND			B.2	Restore required primary containment atmospheric monitoring system to OPERABLE status.	30 days
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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
94	H	2	x					x					x	N		<p>SAMPLE QUESTION provided on 8-20-14 T3-G2.1.34</p> <p>1. SRO-only: The proposed test item can be answered by knowing the TRM 3.4.1 information listed above the line, that is, the RO is responsible for chemistry limits and the modes in which these limits apply. Furthermore, Choice D (the correct answer) is a one hour or less Tech Spec required action, which is RO knowledge.</p> <p>2. Job-Link: Reference GOI-100-1A to identify "when" chemistry results are first obtained during a startup, and other points in time when chemistry results/samples are obtained...to ensure this question is operationally valid. In other words, if a prerequisite to startup is chemistry verification, then why is the startup in progress with these abnormal chemistry results? If there is a specific point in time when chemistry samples are obtained in GOI-100-1A, that coincides with 0.5 bypass valve power, then this may be operationally valid.</p> <p>3. Stem Focus: Each of the four choices can be steam lined into Required Action designators (A.1 only, B.1 only, A.1 and B.1, or D.1 and D.2) to minimize reading burden.</p> <p>Suggestion: Because the K/A statement is broad, this provides the exam writer with opportunities to write a question that tests the basis behind a TRM 3.4.1 action statement or the LCO. In other words, write a two-part question to keep Choices B and D, and then add the second part of the question to test the Tech Spec Bases behind the correct Choice.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
94	F	2	x										x		U	<p>T3 G2.1.34</p> <p>1. SRO-only: Both portions of the question deal with BWR chemistry knowledge, despite being in the TS Bases. (Zircaloy is not affected by stress corrosion cracking and the reactor is a concentrator of impurities.) Replaced Question.</p> <p>2. Stem Focus: Instead of providing a "lead-in" sentence for both fill-in-the-blank statements (unusual), provide a picture of the Column A and B limits in the stem. Replaced Question.</p> <p>3. Verify that 5-10% power is equivalent to < 100,000 lb/hr steam flow. Replaced Question.</p> <p>Suggest the following to remedy Comment #1:</p> <p><i>Unit 1 is MODE 2 with a startup in progress in accordance with 1-GOI-100-1A, Unit Startup. Reactor Pressure is 955 psig and the first bypass valve is 8% open. Chemistry reports the following reactor water chemistry parameters to the Control Room:</i></p> <p><input type="checkbox"/> Chlorides: 0.09 ppm <input type="checkbox"/> Conductivity: 1.5 μmhos/cm <input type="checkbox"/> pH: 5.0</p> <p><i>Which ONE of the following identifies the minimum required action(s) in accordance with TRM 3.4.1, Coolant Chemistry Limits?</i></p> <p><i>[Reference Provided]</i></p> <p>A. Condition A.1 only B. Condition B.1 only C. Condition C.1 only D. Condition D.1</p> <p>(This suggestion does not rely on testing a \leq 1 hour action statement because the pH action statement is more than one hour.) Accepted Bruno's suggested question and have replaced the one that was there.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
95	H	2								x		x	x	N	U	<p>T3 G2.1.7</p> <p>1. SRO-only: Both parts of the question are RO knowledge. The 1st part is RO knowledge because the allowable mismatch limits is systems operating knowledge. The 2nd part of the question is RO knowledge because it is above-the-line information in LCO 3.4.1 (Both recirc loops must be operating and flows matched). Replaced Question.</p> <p>2. Q=K/A: The proposed question does not require the applicant to make an operational judgment based on interpretation of an instrument. The values are already provided. Replaced Question.</p> <p>3. #/units: The meter/indicator names and UNID#'s are missing in the stem. Recommend – I agree with Bruno – rewrote the question to be TS inst. Bases question concerning RHRSW and EECW Rules contained in OPDP-8, LCO Tracking.</p>
96	F	2	x			x								B	E	<p>T3 G2.2.19 2007 Hatch Exam, Q#96</p> <p>1. Cred Dist: The plausibility of the 2nd part of Choices A/C is questionable because the word "still" is missing; "...the work order is still required to be planned." However, see easy suggestion below to enhance.</p> <p>2. Stem Focus: The term emergency priority 1, etc. is common to both fill-in-the-blank statements and can be relocated to the stem question.</p> <p>To enhance the plausibility of the 2nd part of Choices A/C, and to streamline the question, suggest the following:</p> <p><i>WOOTF completes both statements regarding Emergency Priority 1 Work Orders?</i></p> <p><i>In accordance with NPG-SPP-07.1.4, Work Control Prioritization, Priority 1 emergency work orders require the approval of the _____. (Shift Manager vs Plant Manager) In accordance with NPG-SPP-06.1, Work Order Process, planning shall be done on Priority 1 emergency work orders _____ the work performance. (prior to vs in parallel with)</i></p> <p>Recommend – KN Accept suggestion</p>

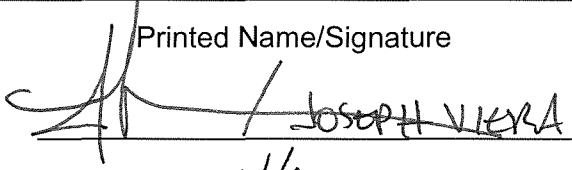


Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A			
97	F	2				x			x				N	U	<p>T3 G2.2.21</p> <p>1. Cred Dist: The 2nd part of Choices B/D is not plausible because the 2nd fill-in-the-blank statement says <i>RETURNED TO SERVICE TO</i> perform corrective maintenance. A component is never returned to service to perform corrective maintenance. Replaced Question. A component is always REMOVED from service to perform corrective maintenance.</p> <p>2. Minutia: The 1st part of the question requires the applicants to memorize numbers (TS 3.0.4, etc.) Verify that is not minutia. _____ establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. Replaced Question. (LCO 3.0.5 vs LCO 3.0.2) This allowance _____ to restoring equipment to service to demonstrate the operability of OTHER equipment. (<i>is applicable</i> vs does NOT apply) Recommend – Rewrote the question incorporating Bruno's comments. Operations expects the SROs to know what LCO 3.0.4 is by number.</p>

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
98	H	4	x			x	x							B		<p>SAMPLE QUESTION provided on 8-20-14 T3-G2.3.14 (2012 NRC Exam, Q#99)</p> <p>1. Cred Dist: The 1st part of Choices B and D (inadvertent criticality) is not plausible because the stem does not include anything that could be misconstrued as an inadvertent criticality such as count rate, reactor period, annunciators, rod positions, etc. The 2012 version of this question <i>DID</i> include SRM count rate; however, the proposed version doesn't include SRM count rate.</p> <p>2. Partial: An applicant could argue that there is no correct answer to the 1st part of the question because there are no <i>entry conditions</i> for AOs at BFN. Each entry to an AO is a judgment call by the SRO, based on symptoms at the time of the abnormal event. <i>The AOs do not specify required "entry conditions."</i> Therefore, because the 1st part of the question may have no correct answer, there is a high likelihood that it would be thrown out during a post-exam appeal, which means that this question boils down to the 2nd part of the question, which is a 50/50 shot, heavily weighted towards an E-plan call since the reference is being distributed.</p> <p>3. LOD=1: The proposed question will not have any discriminatory SRO value on the exam because the 1st part is RO knowledge (plant parameters requiring AO entry) and the 2nd part is a direct lookup. That is, a reference is being provided and the photos include the exact items specified in the reference.</p> <p>4. Stem Focus: The 1st fill-in-the-blank statement uses the word "should", which is subjective.</p> <p>Suggestion: Because the K/A statement is broad, this provides the exam writer with opportunities to write a question that tests a lot of items such as Section 4 of EPIP-1.</p>

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only		
98	H	3	x			x							N	E/U	<p>T3 G2.3.14</p> <p>1. Cred Dist: (Borderline-easy fix) The plausibility of Choices A/B is questionable because the stem does not include 0-SI-4.8.B.1.a.1 data. In other words, the reference being provided to the applicants lists 0-SI-4.8.B.1.a.1 data only for the Unusual Event and Alert classification criteria. Because the stem doesn't include any 0-SI-4.8.B.1.a.1 data, a savvy test-taker can (correctly) eliminate Choices A/B without knowing anything about the classification threshold criteria.</p> <p>Included the 0-SI-4.8.B.1.a.1 data as suggested.</p> <p>2. The 2nd bullet is vague because it uses the ending phrase "...for that same 20 minutes." Suggest incorporating a timeline instead of referring to the first 20 minutes.</p> <p>Incorporated a timeline as suggested.</p> <p>3. Stem Focus: The 1st bullet grammar is incorrect; Stack WRGERMS "are" (should be "is"), and "have been" (should be "has been").</p> <p>Replaced Question.</p> <p>Suggest the following:</p> <p><i>An event involving fuel damage has occurred on Unit 1. The following conditions exist at 09:00:</i></p> <p><input type="checkbox"/> Stack Noble Gas WRGERM: 7.1 E9 μCi/sec</p> <p><input type="checkbox"/> 0-SI-4.8.B.1.a.1 Release Fraction: 1.8</p> <p><input type="checkbox"/> Four areas in the Reactor Building exceed their Max Safe Rad levels</p> <p><input type="checkbox"/> Site Boundary Radiation Readings not obtained yet, but will be available at 09:30</p> <p><i>WOOTF is the highest REQUIRED emergency classification at 09:00?</i></p> <p>Changed time to 9:15, and incorporated Bruno's suggested replacement question.</p> <p>4. Provide the entire E-plan classification matrix to the applicants.</p> <p>NOT just Section 4.0.</p> <p>Agree</p>

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
99	F	2	x											B	E	<p>T3 G2.4.11</p> <p>1. The 1st fill-in-the-blank question overlaps with Q#75 (double jeopardy). Determined that this question was Double Jeopardy with Q 75.</p> <p>2. Stem Focus: The 1st sentence in the 2nd fill-in-the-blank statement is not necessary. Replaced Question.</p> <p>3. Stem Focus: The word "either" in the 2nd part of Choices B/D is not necessary. Replaced Question.</p> <p>4. Stem Focus: The 2nd fill-in-the-blank statement should be reworded to avoid the word "may." Instead, ... Replaced Question.</p> <p><i>In the event that a piece of equipment on the Critical Equipment Checklist fails, the operators are required to _____ for aligning alternate path equipment for service.</i></p> <p>(ONLY use SSIs vs use an AOI or EOI)</p> <p>Determined that this question was Double Jeopardy with Question 75 and rewrote it to remove the EOI –SSI interrelationship.</p> <p>Changed this to an OPDP-1 Conduct of Operations question and had the SRO choose which procedure governs the termination of Annunciator Response.</p>

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
100	F	2	x	x		x								N	E	<p>T3 G2.4.29</p> <p>1. Direct Lookup: The applicants are being provided with a copy of SPP-3.5 for Q#76; therefore, the 2nd part of the question is a direct lookup.</p> <p>2. Cue: The 2nd fill-in-the-blank statement uses the word "STILL", which is not necessary to elicit the correct response.</p> <p>3. Cred Dist: Given the fact that SPP-3.5 is being provided for Q#76, then the plausibility of the 2nd portion of Choices C/D (4 hours) is questionable.</p> <p>4. Stem Focus: Each test item should include a stem question.</p> <p>5. I (originally) intended on providing a COMPLETE copy of EPIP-1 to the applicants for Questions #77, #82, and #98. Therefore, the proposed question #100 becomes a direct lookup unless the front matter in EPIP-1 is not provided to the applicants.</p> <p><i>WOOTF completes both statements in accordance with EPIP-1, Emergency Classification Procedure?</i></p> <p><i>[Consider each statement separately.]</i> <i>IF an EAL for a higher classification was exceeded, but the present situation indicates a lower classification, THEN the higher classification _____ be declared. (should NOT vs should still).</i> <i>IF an EAL was exceeded (e.g., fire lasting longer than 15 minutes), but has now been totally resolved, THEN the NRC _____ required to be notified. (is still vs is NOT)</i></p> <p>Recommend – KN 1.They will not be provided front matter in the SPP 2.Agree 3.question changed to match the recommendation 4.Agree 5.see #1 Accept the recommendations</p>

Facility: <u>Browns Ferry</u>		Date of Exam: <u>1/28/15</u>		Exam Level: RO <input checked="" type="checkbox"/> SRO <input checked="" type="checkbox"/>	
Item Description	Initials				
	a	b	c		
1. Clean answer sheets copied before grading	<u>J</u>	<u>N/A</u>	<u>BN</u>		
2. Answer key changes and question deletions justified and documented	<u>←</u>	<u>N/A</u>	<u>→</u>		
3. Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	<u>J</u>	<u>N/A</u>	<u>BN</u>		
4. Grading for all borderline cases (80 ±2% overall and 70 or 80, as applicable, ±4% on the SRO-only) reviewed in detail	<u>←</u>	<u>N/A</u>	<u>→</u>		
5. All other failing examinations checked to ensure that grades are justified	<u>←</u>	<u>N/A</u>	<u>→</u>		
6. Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants		<u>N/A</u>	<u>BN</u>		
Printed Name/Signature		Date			
a. Grader	<u> JOSEPH VIERA</u>		<u>2/10/15</u>		
b. Facility Reviewer(*)	<u>N/A</u>		<u>N/A</u>		
c. NRC Chief Examiner (*)	<u>BRUNO CABALLERO / </u>		<u>2-12-15</u>		
d. NRC Supervisor (*)	<u>Eugene Guthrie / </u>		<u>2/19/15</u>		
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.					