

Facility: <u>SURRY</u>		Date of Examination: <u>JULY 2009</u>
Developed by: Written - Facility <input type="checkbox"/> NRC <input checked="" type="checkbox"/> // Operating - Facility <input checked="" type="checkbox"/> NRC <input type="checkbox"/>		
Target Date*	Task Description (Reference)	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a and b)	MB
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	MB
-120	3. Facility contact briefed on security and other requirements (C.2.c)	MB
-120	4. Corporate notification letter sent (C.2.d)	MB
[-90]	[5. Reference material due (C.1.e; C.3.c; Attachment 3)]	MB
{-75}	6. Integrated examination outline(s) due, including Forms ES-201-2, ES-201-3, ES-301-1, ES-301-2, ES-301-5, ES-D-1's, ES-401-1/2, ES-401-3, and ES-401-4, as applicable (C.1.e and f; C.3.d)	MB
{-70}	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	MB
{-45}	8. Proposed examinations (including written, walk-through JPMs, and scenarios, as applicable), supporting documentation (including Forms ES-301-3, ES-301-4, ES-301-5, ES-301-6, and ES-401-6, and any Form ES-201-3 updates), and reference materials due (C.1.e, f, g and h; C.3.d)	MB
-30	9. Preliminary license applications (NRC Form 398's) due (C.1.i; C.2.g; ES-202)	MB
-14	10. Final license applications due and Form ES-201-4 prepared (C.1.i; C.2.i; ES-202)	MB
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	MB
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g)	MB
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	MB
-7	14. Final applications reviewed; 1 or 2 (if >10) applications audited to confirm qualifications / eligibility; and examination approval and waiver letters sent (C.2.i; Attachment 5; ES-202, C.2.e; ES-204)	MB
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k)	MB
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	MB
<p>* Target dates are generally based on facility-prepared examinations and are keyed to the examination date identified in the corporate notification letter. They are for planning purposes and may be adjusted on a case-by-case basis in coordination with the facility licensee. [Applies only] {Does not apply} to examinations prepared by the NRC.</p>		

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

Facility:		Date of Examination:		
Item	Task Description	Initials		
		a	b*	c#
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	MB	N/A	AL
	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.	MB		CH
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	MB		CH
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	MB	↓	CH/C
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.	N/A	N/A	N/A
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity, and ensure that each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s), and that scenarios will not be repeated on subsequent days.	↓	↓	↓
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	↓	↓	↓
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.	N/A	N/A	N/A
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations	↓	↓	↓
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.	↓	↓	↓
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.	MB	N/A	CH
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	MB		CH
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	MB		CH
	d. Check for duplication and overlap among exam sections.	MB		CH
	e. Check the entire exam for balance of coverage.	MB		CH
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	MB	↓	CH
a. Author		MARK A. BATES / <i>[Signature]</i>		Date
b. Facility Reviewer (*)		N/A		15 JULY 2009
c. NRC Chief Examiner (#)		CRAIG KANTZ / <i>[Signature]</i>		N/A
d. NRC Supervisor		MALCOLM T. WIDUJANAS / <i>[Signature]</i>		15 JULY 2009
				07/15/09
Note:		# Independent NRC reviewer initial items in Column 'c', chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines		

ES-201

Examination Outline Quality Checklist

Form ES-201-2

Facility:		Date of Examination:		
Item	Task Description	Initials		
		a	b*	c#
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	N/A	*	N/A
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.	↓	*	↓
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	↓	*	↓
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	↓	*	↓
2. 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.	C/DW		MB
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity, and ensure that each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s), and that scenarios will not be repeated on subsequent days.	S/DW		MB
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	S/DW		MB
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: ✓(1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form ✓(2) task repetition from the last two NRC examinations is within the limits specified on the form ✓(3) no tasks are duplicated from the applicants' audit test(s) ✓(4) the number of new or modified tasks meets or exceeds the minimums specified on the form ✓(5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.	S/DW		MB
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: ✓(1) the tasks are distributed among the topics as specified on the form ✓(2) at least one task is new or significantly modified ✓(3) no more than one task is repeated from the last two NRC licensing examinations	S/DW		MB
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.	S/DW		MB
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.	S/DW		MB
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	S/DW		MB
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	S/DW		MB
	d. Check for duplication and overlap among exam sections.	S/DW		MB
	e. Check the entire exam for balance of coverage.	S/DW		MB
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	S/DW		MB
<p>a. Author <u>Carol F. Iawin III</u> Printed Name/Signature</p> <p>b. Facility Reviewer (*) <u>DAVID H WILSON</u> / <u>[Signature]</u></p> <p>c. NRC Chief Examiner (#) <u>MARK A. BATES</u> / <u>[Signature]</u></p> <p>d. NRC Supervisor <u>UNCOLT WILSON</u> / <u>[Signature]</u></p>		<p>Date</p> <p>7/9/09</p> <p>7/9/2009</p> <p>07/10/2009</p> <p>07/15/09</p>		
<p>Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines</p>				

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 7/24-7/27/09 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 7/20-7/27/09. 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. AMY C. EPPS	TRAINING ADMINISTRATOR	<i>Amy C. Epps</i>	03-17-09	<i>Amy C. Epps</i>	07-30-09
2. David H. Wilson	Supervisor - Nuclear Training	<i>D. Wilson</i>	3/17/09	<i>A. Epps</i>	7/30/09
3. Carl F. Truitt	INST - Exam writer	<i>C. Truitt</i>	3/17/09	<i>C. Truitt</i>	7/30/09
4. Phat Tran-Lam	S2M support coord	<i>Phat Tran-Lam</i>	3/17/09	<i>Phat Tran-Lam</i>	7/30/09
5. BROWN, Aaron D.	SIM Support Coord - SOFTWARE	<i>A. Brown</i>	17 MAR 09	<i>A. Brown</i>	7/30/09
6. Christopher G. Huth	Simulator Software Eng.	<i>Ch. Huth</i>	3/17/09	<i>Ch. Huth</i>	7/30/09
7. Robert W. Soderholm	Simulator support coordination	<i>Robert W. Soderholm</i>	3/17/09	<i>Robert W. Soderholm</i>	7/30/09
8. Regina Frwin	Admin	<i>Regina Frwin</i>	3/17/09	<i>Regina Frwin</i>	7-30-09
9. L.A. Baker	Ops	<i>L.A. Baker</i>	3/26/09	<i>L.A. Baker</i>	7/30/09
10. W. J. Ford	Instructor	<i>W. J. Ford</i>	04/15/09	<i>W. J. Ford</i>	7/30/09
11. Stephen Wightman	US	<i>Stephen Wightman</i>	5/19/09	<i>Stephen Wightman</i>	7/30/09
12. David W. Barrios	RO	<i>David W. Barrios</i>	5/19/09	<i>David W. Barrios</i>	7/31/09
13. JAMES DUNLEVY	RO/BOP	<i>James Dunlevy</i>	5-19-09	<i>James Dunlevy</i>	7-30-9
14. RANDALL SCHERER	RO/BOP	<i>Randall Scherer</i>	5-21-09	<i>Randall Scherer</i>	7/31/09
15. ROBERT BRACEY	SHIFT MANAGER	<i>Robert Bracey</i>	5/21/09	<i>Robert Bracey</i>	7/30/09

NOTES:

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 7/23/09 & 7/27/09 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 7/20 & 7/27/09. From the date that I entered into this security agreement until the completion of examination administration, I did not instruct, evaluate, or provide performance feedback to those applicants who were administered these licensing examinations, except as specifically noted below and authorized by the NRC.

PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1. SEAN LOCASSIO	RO	<i>[Signature]</i>	5/21/09	<i>[Signature]</i>	7/30/09
2. JAMES CUSTER	RO	<i>[Signature]</i>	6/11/09	<i>[Signature]</i>	7/31/09
3. G. A. GRIFFIN	RO	<i>[Signature]</i>	6/12/09	<i>[Signature]</i>	7-31-09
4. JOHN QUIGLEY	RO	<i>[Signature]</i>	6/24/09	<i>[Signature]</i>	8/2/09
5. BRIAN DAMEIER	RO	<i>[Signature]</i>	6/24/09	<i>[Signature]</i>	8/1/09
6. JOHN DUFF	SRO	<i>[Signature]</i>	6-24-09	<i>[Signature]</i>	7-30-09
7. TIM GREEN	SRO	<i>[Signature]</i>	6-25-09	<i>[Signature]</i>	8/1/09
8. BILL PARKER	SRO	<i>[Signature]</i>	7/10/09	<i>[Signature]</i>	7/30/09
9. STEPHEN JENKINS	RO	<i>[Signature]</i>	7/10/09	<i>[Signature]</i>	8/1/09
10. STEVEN DAVIS	SRO	<i>[Signature]</i>	7/14/09	<i>[Signature]</i>	7-31-09
11. BILL SUMMERS	RO	<i>[Signature]</i>	7-14-09	<i>[Signature]</i>	7-31-09
12. KEN GROVE	Mgr	<i>[Signature]</i>	7/15/09	<i>[Signature]</i>	7/30/09
13. BILL MARSHALL	SENIOR INST-NUC OPS	<i>[Signature]</i>	7/20/09	<i>[Signature]</i>	7/30/09
14. Shelley Boney	Instructor	<i>[Signature]</i>	7/20/09	<i>[Signature]</i>	8/04/09
15. Paul K. CARLSON	SRO	<i>[Signature]</i>	7/20/09	<i>[Signature]</i>	7/30/09

NOTES:

pg 2 of 3

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 7/20/09 7/26/09 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 7/20 & 7/27/09 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.	<u>Kevin Labat</u>	<u>Sr. Instructor - Nuclear ops</u>	<u>[Signature]</u>	<u>7/20/09</u>	<u>[Signature]</u>	<u>8/3/09</u>
2.	<u>Brian L. Harris</u>	<u>Nuclear Specialist / Oversight</u>	<u>[Signature]</u>	<u>7/21/09</u>	<u>[Signature]</u>	<u>7/30/09</u>
3.						
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NOTES:

1. Pre-Examination

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

2. Post-Examination

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

	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	_____	_____	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____	_____	_____
5.	_____	_____	_____	_____	_____	_____	_____
6.	_____	_____	_____	_____	_____	_____	_____
7.	_____	_____	_____	_____	_____	_____	_____
8.	_____	_____	_____	_____	_____	_____	_____
9.	_____	_____	_____	_____	_____	_____	_____
10.	_____	_____	_____	_____	_____	_____	_____
11.	_____	_____	_____	_____	_____	_____	_____
12.	_____	_____	_____	_____	_____	_____	_____
13.	_____	_____	_____	_____	_____	_____	_____
14.	_____	_____	_____	_____	_____	_____	_____
15.	_____	_____	_____	_____	_____	_____	_____

NOTES:

Facility: <u>Surry Power Station</u>		Date of Examination: <u>7/20/09</u>
Examination Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>		Operating Test Number: <u>2009-301</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations G2.1.25 (3.9/4.2)	R/N	Calculate Shutdown Margin (at Power) Description: Calculate shutdown margin for a stuck control rod.
Conduct of Operations G2.1.40 (2.8/3.9)	S/N	Review 0-OSP-ZZ-004 to determine if conditions allow for fuel movement. Description: Review procedure and board indication to determine if fuel movement can commence.
Equipment Control G2.2.37 (3.6/4.6)	R/N	Respond to a main control room chiller failure in accordance with 0-OP-VS-006, Control Room and Relay Room Ventilation System. Description: Determine if MCR chiller alignment is adequate and complies with technical specifications.
Radiation Control G2.3.7 (3.5/3.6)	R/D	Determine the applicability of a RWP for a specific job and determine which personnel may be assigned the task based on personal qualifications and dose limitations. Description: Calculate dose received verse limitations given.
Emergency Procedures/Plan G2.4.41 (2.9/4.6)	R/N	Classify an Event and Recommend PAR. Description: Given an event, determine the EAL classification and protective action recommendation, if applicable.
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected)		

Facility: <u>Surry Power Station</u>		Date of Examination: 07/20/2009
Exam Level: RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>		Operating Test No.: 2009-301
Control Room Systems [@] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. Load the #3 EDG on the 1J bus iaw AP-17.05. EPE055EA1.06 (4.1/4.5)	D/E/L/S	6- Electrical
b. Establish Redundant HHSI Flowpaths 006A4.07 (4.4/4.4)	S/L/D	2- RCS Inventory Control
c. Configure spray systems in accordance with ECA-1.1 (Loss of Emergency Recirculation). 026A2.03 (4.1/4.4)	A/N/EN/L/S	5- Containment Integrity
d.		
e.		
f.		
g.		
h.		
In-Plant Systems [@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Increase RCS boron 500 ppm in accordance with AP-40.00 step 17. 004A2.11 (3.6/4.2)	A/E/L/N/R	1- Reactivity Control
j. Isolate Service Water to #3 MER During Flooding. 076A2.01 (3.5/3.7)	A/D/E	4- Heat Removal from Core
k.		
<p>[@] 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.</p>		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	≤9 / ≤8 / ≤4	
(E)mergency or abnormal in-plant	≥1 / ≥1 / ≥1	
(EN)gineered safety feature	- / - / ≠ (control room system)	
(L)ow-Power / Shutdown	≥1 / ≥1 / ≥1	
(N)ew or (M)odified from bank including 1(A)	≥2 / ≥2 / ≥1	
(P)revious 2 exams	≤3 / ≤3 / ≤2 (randomly selected)	
(R)CA	≥1 / ≥1 / ≥1	
(S)imulator		

ES-301

Operating Test Quality Checklist

Form ES-301-3

Facility: <u>Surry Power Station</u>		Date of Examination: <u>07/20/2009</u>		Operating Test Number: <u>2009-301</u>	
1. General Criteria				Initials	
				a	b*
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).	CS	EW	MB	
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	CS	EW	MB	
c.	The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)	CS	EW	MB	
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	CS	EW	MB	
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	CS	EW	MB	
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 	CS	EW	MB	
b.	Ensure that any changes from the previously approved systems and administrative walk-through outlines (Forms ES-301-1 and 2) have not caused the test to deviate from any of the acceptance criteria (e.g., item distribution, bank use, repetition from the last 2 NRC examinations) specified on those forms and Form ES-201-2.	CS	EW	MB	
3. Simulator Criteria				--	--
The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.		CS	EW	MB	
		Printed Name / Signature		Date	
a.	Author	<u>Skip Irwin / [Signature]</u>		<u>7/9/09</u>	
b.	Facility Reviewer(**)	<u>David Wilson / [Signature]</u>		<u>7/9/2009</u>	
c.	NRC Chief Examiner (#)	<u>MARK A. BATES / [Signature]</u>		<u>07/10/2009</u>	
d.	NRC Supervisor	<u>MARCOLET WIDEMAN / [Signature]</u>		<u>07/15/09</u>	
NOTE: * The facility signature is not applicable for NRC-developed tests. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.					

ES-301

Simulator Scenario Quality Checklist

Form ES-301-4

Facility: Surry Power Station		Date of Exam: 7/20/2009		Scenario Numbers: 1 / 2 / 3		Operating Test No.: 2009-301				
QUALITATIVE ATTRIBUTES							Initials			
							a	b*	c#	
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.						✓	MB	MB	
2.	The scenarios consist mostly of related events.						✓	MB	MB	
3.	Each event description consists of <ul style="list-style-type: none"> ✓ the point in the scenario when it is to be initiated ✓ the malfunction(s) that are entered to initiate the event ✓ the symptoms/cues that will be visible to the crew ✓ the expected operator actions (by shift position) ✓ the event termination point (if applicable) 						✓	MB	MB	
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.						✓	MB	MB	
5.	The events are valid with regard to physics and thermodynamics.						✓	MB	MB	
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.						✓	MB	MB	
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.						✓	MB	MB	
8.	The simulator modeling is not altered.						✓	MB	MB	
9.	The scenarios have been validated. Pursuant to 10 CFR 55.46(d), any open simulator performance deficiencies or deviations from the referenced plant have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.						✓	MB	MB	
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.5 of ES-301.						✓	MB	MB	
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).						✓	MB	MB	
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).						✓	MB	MB	
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.						✓	MB	MB	
Target Quantitative Attributes (Per Scenario; See Section D.5.d)						Actual Attributes		-	-	-
1.	Total malfunctions (5-8)					7 / 8 / 7	✓	MB	MB	
2.	Malfunctions after EOP entry (1-2)					2 / 4 / 3	✓	MB	MB	
3.	Abnormal events (2-4)					3 / 2 / 4	✓	MB	MB	
4.	Major transients (1-2)					2 / 3 / 2	✓	MB	MB	
5.	EOPs entered/requiring substantive actions (1-2)					1 / 2 / 2	✓	MB	MB	
6.	EOP contingencies requiring substantive actions (0-2)					1 / 1 / 1	✓	MB	MB	
7.	Critical tasks (2-3)					3 / 2 / 2	✓	MB	MB	

ES-301

Simulator Scenario Quality Checklist

Form ES-301-4

Facility: Surry Power Station		Date of Exam: 7/20/2009		Scenario Numbers: 4 / 1		Operating Test No.: 2009-301		
QUALITATIVE ATTRIBUTES						Initials		
						a	b*	c#
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.	✓	DNW	MB				
2.	The scenarios consist mostly of related events.	✓	DNW	MB				
3.	Each event description consists of <ul style="list-style-type: none"> the point in the scenario when it is to be initiated the malfunction(s) that are entered to initiate the event the symptoms/cues that will be visible to the crew the expected operator actions (by shift position) the event termination point (if applicable) 	✓	DNW	MB				
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.	✓	DNW	MB				
5.	The events are valid with regard to physics and thermodynamics.	✓	DNW	MB				
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	✓	DNW	MB				
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.	✓	DNW	MB				
8.	The simulator modeling is not altered.	✓	DNW	MB				
9.	The scenarios have been validated. Pursuant to 10 CFR 55.46(d), any open simulator performance deficiencies or deviations from the referenced plant have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	✓	DNW	MB				
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.5 of ES-301.	✓	DNW	MB				
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	✓	DNW	MB				
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).	✓	DNW	MB				
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	✓	DNW	MB				
Target Quantitative Attributes (Per Scenario; See Section D.5.d)		Actual Attributes		--	--	--		
1.	Total malfunctions (5-8)	6 / 1	✓	DNW	MB			
2.	Malfunctions after EOP entry (1-2)	2 / 1	✓	DNW	MB			
3.	Abnormal events (2-4)	4 / 1	✓	DNW	MB			
4.	Major transients (1-2)	2 / 1	✓	DNW	MB			
5.	EOPs entered/requiring substantive actions (1-2)	2 / 1	✓	DNW	MB			
6.	EOP contingencies requiring substantive actions (0-2)	1 / 1	✓	DNW	MB			
7.	Critical tasks (2-3)	3 / 1	✓	DNW	MB			

Facility: Surry Power Station			Date of Exam: 7/20/2009			Operating Test No.: 2009-301											
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 (* R I U		
		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				
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>	RX	N/A													1	1	0
	NOR	*													1	1	1
	I/C	1, 2, 3 4, 5													4	4	2
	MAJ	4, 5													2	2	1
	TS	1, 2													0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>	RX				N/A										1	1	0
	NOR				1										1	1	1
	I/C				2, 3, 4, 5										4	4	2
	MAJ				4, 5, 6										2	2	1
	TS				2, 3										0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>	RX							4							1	1	0
	NOR							*							1	1	1
	I/C							1, 3, 5, 6							4	4	2
	MAJ							5, 6							2	2	1
	TS							1, 2, 3							0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>	RX											N/A			1	1	0
	NOR											1			1	1	1
	I/C											2, 3, 4, 5			4	4	2
	MAJ											4, 5			2	2	1
	TS											2, 3			0	2	2

Instructions:

- 1) Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
- 2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- 3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

* In accordance with Instruction #2, Scenario #1 and #3 are using a component malfunction in place of a normal evolution.

Facility: Surry Power Station Date of Examination: 7/20/2009 Operating Test No.: 2009-301																
Competencies	APPLICANTS															
	RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>				BOP <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"/>				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	All	2,3, 4,5, 6	1,2, 3,5, 6	2,3, 4,5												
Comply With and Use Procedures (1)	All	All	All	All												
Operate Control Boards (2)	N/A	N/A	N/A	N/A												
Communicate and Interact	All	All	All	All												
Demonstrate Supervisory Ability (3)	All	All	1,3, 4,5, 6	All												
Comply With and Use Tech. Specs. (3)	1, 2	2, 3	1, 2, 3	2, 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.

THE FINAL WRITTEN EXAM SAMPLE
PLAN IS THE COMBINATION OF THE
DRAFT WRITTEN EXAM SAMPLE PLAN
AND FORM ES-401-4 (RECORD OF
REJECTED K/As).

Tier / Group	Randomly Selected K/A	Reason for Rejection
T2/G2	027G2.2.22	Unable to develop a discriminating SRO-Only question that tested an iodine removal function associated with Technical Specifications. Randomly and systematically selected a new system within T2/G2 (079G2.2.22).
T3	PWG-2.1.45	Unable to develop a discriminating question that tested applicants on using diverse indications to validate response could meet the criteria for an SRO-Only question. Randomly and systematically selected a new Conduct of Operations PWG K/A (G2.1.20)
T2/G1	013G2.4.49	Unable to develop a discriminating question associated with immediate operator actions associated with ESFAS due to the limited number of immediate operator actions that the applicants are responsible to perform. Randomly and systematically selected a new K/A for the system (013K2.01)
T1/G1	008AK1.02	Unable to develop discriminating question. Randomly and systematically selected a new K/A: 008AA2.20
T1/G1	00054G2.4.47	Unable to construct a SRO-level question on the ability to diagnose and recognize trends related to a loss of main feedwater casualty. K/A is more suited to JPM or scenario than written exam question. Randomly & systematically selected new Generic K/A: 00054G2.2.25
T2/G1	008G2.1.31	Unable to construct a discriminatory RO-level written exam question dealing with the ability to locate control room switches as it relates to the CCW system. K/A is more suited to JPM or simulator scenario than written exam question. Randomly & systematically selected new Generic K/A: 008G2.1.7
T2/G1	0064K4.04	Unable to construct a discriminatory RO-level written exam question dealing with the EDG system design features and interlocks associated with overload ratings (more of a nameplate feature). Randomly & systematically selected new K/A: 0064K4.10

ES-401	Record of Rejected K/As		Form ES-401-4
T2/G1	0103K4.04	Unable to construct a discriminatory RO-level written exam question dealing with the containment system design features and interlocks associated with access hatches. Topic is non-licensed operator level. Randomly & systematically selected new K/A: 0103K4.06	
T2/G2	0055G2.2.25	Unable to construct a discriminatory SRO-level written exam question: the condenser air removal system is not part of Surry Technical Specifications or Technical Requirements Manual. Randomly & systematically selected new Generic K/A: 0055G2.4.6	
T2/G2	0086A1.03	Unable to construct a discriminatory RO-level written exam question dealing with the fire protection system and fire doors. This topic is normally focused on administrative requirements and compensatory measures, and is therefore primarily SRO-only level knowledge. Randomly & systematically selected new K/A: 0086A1.05	
T3	SRO G 2.3.6	Unable to construct a discriminatory SRO-level written exam question dealing with SRO ability to approve release permits. At Surry, the HPs approve release permits. Randomly & systematically selected new Generic K/A: 2.3.12	
T1/G1	SRO 062 AA2.03	Surry has no procedure/valve line up to perform this evolution. Randomly & systematically selected new K/A: AA2.06	
T1/G2	068 G2.4.21	Surry has nor formal process to access the CSF outside of the control room. Randomly & systematically selected new K/A: G2.4.42	
T2/G1	012 K1.01	Surry's RPS system is DC with no-power coming from an AC source. Randomly & systematically selected new K/A: K1.05	
T2/G1	SRO 059G2.4.35	Aux operator actions outside of the control room was not considered a basis for SRO level of knowledge. Randomly & systematically selected new K/A: G2.4.14	

Facility:		Date of Exam:		Exam Level: RO <input type="checkbox"/> SRO <input type="checkbox"/>	
Item Description	Initial				
	a	b*	c*		
1. Questions and answers are technically accurate and applicable to the facility.	MB	NA	CAK		
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	MB		CAK		
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401	MB		CAK		
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).	MB		CAK		
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: ___ the audit exam was systematically and randomly developed; or ___ the audit exam was completed before the license exam was started; or <input checked="" type="checkbox"/> the examinations were developed independently; or ___ the licensee certifies that there is no duplication; or ___ other (explain)	MB		CAK		
6. Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.	Bank	Modified	New	MB	CAK
	6 8% / 0%	8 10.7% / 16%	61 81.3% / 84%		
7. Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory		C/A	MB	CAK
	31 41.3%	44 58.7%	19 76%		
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	MB		CAK		
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.	MB		CAK		
10. Question psychometric quality and format meet the guidelines in ES Appendix B.	MB		CAK		
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.	MB	✓	CAK		
		Printed Name / Signature	Date		
a. Author	MARK A. BATES / <i>[Signature]</i>		15 JULY 2009		
b. Facility Reviewer (*)	N/A		N/A		
c. NRC Chief Examiner (#)	Craig Monte / <i>[Signature]</i>		15 JULY 2009		
d. NRC Regional Supervisor	MALCOLM T. WIDMANN / <i>[Signature]</i>		07/15/09		
Note: * The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.					

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
GENERAL COMMENTS															
This 401-9 was used to track changes from the draft questions submitted to the Chief Examiner from the three NRC exam writers. This 401-9 does not track any changes that were made via consultation with the licensee after the draft exam was provided to the licensee. Changes made in consultation with the licensee are documented in the LXR file.															
B= Bank / M=Modified / N=New / F=Fundamental Level (I.E. Memory) / H=Higher Cognitive Level (I.E. C/A)															
For All BANK questions: swap the order of the answer choices so that applicants cannot rely on recall of the correct answer location.															
Print out LXR categories for reviewer. Without that info the reviewer cannot tell if the question is designated as a higher or lower cog question; bank, mod, or new, etc.															
K/A Match Analysis should be written to describe the knowledge that is required to answer the question.															
RO EXAM															
	G2.3.7 (RO)	N	H	2				x				x	x	S	<p>Word the question statement so it does not test on a degree of correctness. Also word the statement to solicit the exact information in the answer choices. For example, RWP requirements are not being tested in answer choices A and D. Consider the following: Given the above conditions, which one of the following correctly describes EPIP-4.04 requirements for the voluntary entry into the Radiologically Controlled Area (RCA)? Q replaced. MAB 5/19/2009</p> <p>Is this question testing SRO-only knowledge? Typically, SEM responsibilities are not required of ROs. Does the site have an RO learning objective for knowing the SEM duties? Q replaced. MAB 5/19/2009</p> <p>C appears to be a subset of B. The RAD is a radiological control personnel and he likely operates from the TSC. The only real difference between the two distractors is that B states that the SEM is required to sign, whereas C is silent on that detail. Q replaced. MAB 5/19/2009</p> <p>For purposes of the written exam question, it would be acceptable to state in the question that the RWP contains the following information, rather than have the licensee supply an RWP. Either way is OK, but you may be</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A		
														<p>able to test the same knowledge and reduce the burden on the licensee. OK MAB 05/28/2009</p> <p>If the previous comment is incorporated, then the question could ask for the answer choice that minimizes dose. Or the RWP information that you provide could contain the statement similar to what you included in your NOTE TO SURRY. OK MAB 05/28/2009</p> <p>Q will be satisfactory after discussion and possible incorporation of above Comments. OK MAB 05/28/2009</p>
	029EA1.02 (RO)	N	H	2						x				S <p>Reword question statement to allow for more efficient wording of answer choices and to avoid testing on degree of correctness which is implied by the word "most": Which one of the following correctly describes the next step required to align an alternate boration flow path in accordance with 1-FR-S.1, Response to Nuclear Power Generation/ATWS? Q significantly modified. MAB 5/19/2009</p> <p>B and C could successfully be argued as correct. Much weight is placed on the word ONLY when you are attempting to test that there is no order of preference for the actions. Q significantly modified. MAB 5/19/2009</p> <p>B and C contain conditional answers. Placing conditions in the answer choices should only be done as a last resort. Generally, the conditions of the question should be placed in the stem. Q significantly modified. MAB 5/19/2009</p> <p>Operational validity? If an applicant performs the actions of B would it be incorrect? If an applicant performed the actions of C would it be incorrect? Q significantly modified. MAB 5/19/2009</p> <p>A possible fix could be to include how the turbine is being operated (stem would require some modification also). For example: A. Manually SI. B. Place switches for CH-MOV-1115B & D to OPEN and place switches for CH-MOV-1115C & E to CLOSE. Ramp turbine down using GV close (or whatever Surry has). C. Place switches for CH-MOV-1115B & D to OPEN and place switches for CH-MOV-1115C & E to CLOSE. Ramp turbine down using the limiter. D. Place the blender mode selector switch to BORATE and start the blender. Close the MSTVs.</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>Q significantly modified. MAB 5/19/2009</p> <p>Distractors "A" and "B": Delete "... to allow increased injection flow." This information is not needed to make the answer choices unique. Incorporated. MAB 05/28/2009</p> <p>Consider using 2210 psig in "A" and "B". The reason this value may be more plausible is that it coincides with the low P alarm setpoint, which is a plant specific parameter. The Alarm setpoint would likely be more credible to the applicant because there is a chance that the applicant has not received training on a part of the WOG which is not utilized at Surry. With this change, the question should be satisfactory. Incorporated. MAB 05/28/2009</p>
	009EK2.03 (RO)	N	H	2									S	<p>The reading burden on this question is very high. Is there a method to present the pertinent info with a lower reading burden? Q was replaced. MAB 5/19/2009</p> <p>The question statement asks for the next actions, however the answer choices all contain information that are not describing the next action. For example, stating which SG is faulted does not describe an action. Q was replaced. MAB 5/19/2009</p> <p>Limit the words in the answer choices to only those that are necessary to make the answer choice unique. Q was replaced. MAB 5/19/2009</p> <p>Is knowledge of the K/A required to answer the question? Is knowledge of a SBLOCA and the interrelation with SGs needed to answer the question? Or does an applicant only need to diagnose a faulted SG and understand that E-2 will address that condition? Q was replaced. MAB 5/19/2009</p> <p>This question is testing an internal procedure transition. Does this fit the criteria of the SRO-only guidance? It is clear that an RO is required to know that there is a faulted SG, but is the RO required to know the procedure path when faced with both a faulted SG and a SBLOCA? Suggest walking through the SRO guidance to determine whether or not the question requires SRO-only knowledge to arrive at the correct answer. Also consider that the information is on the Continuous Action Page – does this help justify RO knowledge? Q was replaced. MAB 5/19/2009</p> <p>Replacement Q is satisfactory. MAB 5/19/2009</p>
	W/E04EA2.2	M	H	2									S	<p>Second part of A and B: How can transitioning out of ECA-1.2 be logical</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
	W/E04EA2.1 (RO)													<p>if pressure is still going down, thus the leak is not isolated? The question is sat with the exception of the second part of these two answer choices. We should attempt to replace these. Would it be possible to have them remain in ECA-1.2 instead of going to E-1? Consider it and discuss if needed. Q was replaced. MAB 5/19/2009</p> <p>We should discuss the SRO-only aspects with a couple of other CEs. EOP basis information should be OK to test at an RO level, but we should check the SRO guidance as well as other CEs to be sure. Q was replaced. MAB 5/19/2009</p> <p>Compare this question to 026G2.1.7. This question is an RO question, whereas, 026G2.1.7 is an SRO question. They both look like the justifications would be similar either for an RO question or for an SRO question. You could argue that this question is RO via a "mitigating strategy" logic, but then 026G2.1.7 likely needs to be enhanced from a procedure selection perspective. Q justifications bolstered for each question. OK MAB 05/28/2009</p>
	0040AA2.05 (RO)	N	F	2									S	<p>Can answer choices be simplified to only contain information that makes the answer choices unique? Q was replaced. MAB 5/19/2009</p> <p>Make minor changes to question statement. Q was replaced. MAB 5/19/2009</p> <p>Much of the information is unnecessary. Sometimes CEs will refer to teaching in the stem. This is when information is unnecessarily provided – namely information that the applicant is required to know. I.E. SI termination criteria. Delete the unnecessary info and massage the stem to accommodate the deletion. Q was replaced. MAB 5/19/2009</p> <p>Does this question require SRO-only knowledge for procedure selection? The second half of the answer choices could require SRO-only procedure selection knowledge? Stopping the charging pump is the same in each choice, the knowledge needed is whether or not a transition to ES-1.1 is required. Typically, internal procedure transitions are SRO-only. In other words, ROs are required to know simple procedure entry conditions for the AOPs and main EOPs. More detailed procedure transitions within the EOP network are usually considered to be SRO-only. We should review SRO-only guidance and discuss with another CE. Q was replaced. MAB 5/19/2009</p> <p>Replacement Q is satisfactory. MAB 5/19/2009</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
	077AA2.07 (RO)	N	F	2										S	<p>Is the operability call an SRO-only function? Is it required for an RO to know the specific setpoints for determining operability of high voltage systems. This should be reviewed against the SRO-only guidance and reviewed by second CE. Methods to justify as RO may include that the voltage requirements are provided in a P&L from an SOP, or that the information is provided in TS above the line. Q revised to move away from operability and test TS entry, which is at the RO level. MAB 5/19/2009</p> <p>The K/A match appears to be questionable., No supporting info was supplied that links the voltage requirements to the operability of the ESFs. I would suggest making the second part of the answer choices to test operability of the ESF equipment based on the offsite power supply, thereby better matching the K/A. OK after discussion and slight revision. MAB 05/28/2009</p> <p>The K/A Match still appears to be questionable. The K/A requires knowledge of how generator voltage or grid disturbance will impact operational status of ESF equipment. OK after discussion and slight revision. MAB 05/28/2009</p> <p>Can the correct answer be supported by the Tech Specs and/or the Tech Spec Bases? OK after discussion and slight revision. MAB 05/28/2009</p> <p>Does TS 3.16 require operability of 230 KV or 500 KV electrical distribution? OK after discussion and slight revision. MAB 05/28/2009</p>
	036AA2.03 (SRO)	M	F	3										S	<p>Is B potentially incorrect? From the provided references, it appears that the FSAR does analyze SFP fuel handling accidents. Therefore, a fuel handling accident occurring in the SFP is in fact analyzed in the FSAR, so how could the resultant TEDE at the EAB be higher than the SFP accident analyzed in the FSAR? Comment incorporated. MAB 5/19/2009</p> <p>Consider using 2597 for "D". 2605 is still very plausible, but is an operator required to know a random number chosen for a safety analysis calc? It may be more reasonable for an operator to know that 102% of nominal is a typical methodology for safety analysis calcs. Discuss. The question will be sat either way, but I left it designated as "E" to ensure we have this discussion. RTP used. OK MAB 05/28/2009</p>
	G2.4.30	N	H	2										S	<p>I agree that the I&C generated signal from testing was invalid. What about the procedurally directed manual initiation? The procedurally directed</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
	(SRO)													<p>manually initiated SI appears to fit the definition of VALID as defined in VPAP-2802. Incorporated by asking specifically about the AMSAC signal. OK. MAB 05/19/2009.</p> <p>In the question statement, be specific on to whom the operator must make the report. I.E. to the NRC Operations Center. Comment incorporated. MAB 5/19/2009</p> <p>I agree with providing the stated references to the applicants. Comment incorporated. MAB 5/19/2009</p> <p>Q is satisfactory. MAB 5/19/2009</p>	
	026G2.1.7 (SRO)	N	H	2									?	S	<p>Is there a reason why the question does not state what procedure they are in and what attachments they are performing? Also, is there any way that the answer choices could provide specific attachments that they are supposed to transition to? By avoiding specifics in the stem and answer choices, the question becomes less operationally valid. Q modified. MAB 5/19/2009</p> <p>Is there a way to include the actions in the answer choices, vice stating that they will perform the RNO actions? Comment incorporated. MAB 5/19/2009</p> <p>Ensure the wording of "A" is terminology used in the supporting references. "Forced feed and bleed cooling" Wording OK. MAB 05/28/2009</p> <p>The SRO justification does not appear to be included in the notebook, or I overlooked it. Added. MAB 05/28/2009</p> <p>How does the SRO justification for this SRO question compare to an SRO justification for RO Q W/E04EA2.2? Justification bolstered. MAB 05/28/2009</p>
	G2.2.22 (SRO)			3										S	<p>Consider deleted unnecessary parts of the stem and answer choices. Comment incorporated. MAB 5/19/2009</p> <p>Q is satisfactory. MAB 5/19/2009</p>
	086A1.05	N	H	3										S	<p>Good Q with good distractors.</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
	(RO)													<p>Suggest writing "DECREASING" in lower case since it is the same in all answer choices. I would recommend only capitalizing it if you were trying to emphasize between decrease in one distractor and increase in another distractor. Incorporated. OK MAB 5/7/09</p> <p>Suggest adding "approximately" prior to "1" in each answer choice. Incorporated. OK MAB 5/7/09</p> <p>Will each tank lower at the same rate? There may be different flow resistance in the path for each tank. Suggest adding a statement that states for the applicant to assume that both tanks lower at the same rate. Incorporated. OK MAB 5/7/09</p>
	055G2.4.45 (RO)	N	H	2									S	<p>Good Q idea.</p> <p>Question is higher cog (C/A). Corrected. MAB 05/29/2009</p> <p>Consider adding "Immediately" at the beginning of "B". Incorporated. MAB 05/29/2009</p> <p>First Bullet: consider stating the 1F-B6 has just alarmed. This will remove any doubt that vacuum has been lower than 26.5 inches for five minutes already. Now states alarmed 5 minutes ago, which makes the other choice correct and allows K/A to be met. OK MAB 05/28/2009</p> <p>K/A match needs to be reviewed with revised question. OK MAB 05/28/2009</p>
	0041A3.03 (RO)	N	H	2-3									S	<p>If steam dumps are open, would turbine load remain stable? Or, would turbine load decrease? Last bullet deleted. OK MAB 05/26/2009</p> <p>Would Q be better if the plant was at 75%? This may improve plausibility of "C" because Tref will top out at 100%, so rods would not move out.. Q remains at 100%. OK MAB 05/29/2009</p> <p>Does Surry have any logic that would cause the Tc failure to not affect Tave? I.E. Medium select or minimum Tc select? OK. Verified. MAB 05/27/2009</p>
	011K6.06	B	F	2									S	<p>A subset issue may exist with "C" and "D": If "D" was correct, then "C" would also be correct. Suggest wording them as follows:</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A			SRO Only
	(RO)														C. The flow limit summator will limit charging flow to a minimum of 25 gpm. D. The flow limit summator will limit charging flow to a minimum of 30 gpm. Incorporated. OK MAB 05/07/09
	G2.2.42 (RO)	M	H	2										S	Question may be higher cog (C/A). Discuss. Q changed to C/A. OK MAB 05/07/09 Suggest changing the end of the question statement to: "...as listed in Technical Specification 3.7, Instrumentation Systems?" Incorporated. OK MAB 05/07/09 Is "D" actually correct? Do they actually have 49 hours before they are required to open the RTBs? Corrected. OK MAB 05/07/09 Suggest rewording "D" to: IMMEDIATELY suspend reactivity changes that are more positive than necessary to meet the required shutdown margin or refueling boron concentration limit and restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour." Incorporated. OK MAB 05/07/09 Minor enhancements suggested for "A". Incorporated. OK MAB 05/18/2009
	054G2.2.25 (SRO)	N	F	3										S	Good Q.
	055G2.4.6 (SRO)	N	H	2										S	The wording in "D" is a bit confusing: "...steps/the..." Corrected. MAB 05/27/2009 APs can be used simultaneously with EOPs. By stating that the RO is concerned with degrading vacuum, it implies that the rate of degradation is more than the expected rate of degradation. In this case, why would it be incorrect to perform the AP in conjunction with the EOP? Do they have a procedure on procedure usage that would disallow it? Corrected. MAB 05/27/2009 Answer Choice Analysis may need to be updated. Done. MAB 05/27/2009 Help explain how ES-3.1 is plausible when considering FASTEST methods to cooldown. Discussed plausibility. OK MAB 05/27/2009

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A			SRO Only
	007A1.03 (RO)	N	F	2-3										S	<p>Is 125F plausible? Tsat at atm pressure is 212F. Q modified. OK MAB 05/26/2009</p> <p>A stronger K/A match would be to place the temp at 125F and the level at 80%. Consider this change if it does not harm the question. Q modified. OK MAB 05/26/2009</p> <p>Is the PRT design temp an operationally valid knowledge item for the RO? Would knowing this information allow an RO to perform his duties better or differently than if he did not have this knowledge? Is the PRT design temp minutia? Q modified. OK MAB 05/26/2009</p> <p>Is there an RO learning objective for the PRT design temp? Q modified. OK MAB 05/26/2009</p> <p>Most sites will have a normal level, temp, and pressure band for their PRT which is usually stated in their system op procedure. One option may be to test knowledge of the normal op band for temp, and/or pressure, and/or level. This may allow for a more operationally valid question. Q modified. OK MAB 05/26/2009</p>
	008A2.04 (RO)	M	H	2										S	<p>K/A match: Can the diagnosis be made without the PRM info in the stem? If the applicant knows that pwr level is decreasing, the Th Barrier alarm is in, and the CCW surge tank level is lowering, is this enough to decipher the correct answer? If needed, suggest changing info in the stem to require the PRM info to answer the question. Q replaced. MAB 05/28/2009</p> <p>K/A Match: The NUREG requires that the (b) part of the K/A is tested. The question must require procedure knowledge in order to meet the K/A. Q replaced. MAB 05/28/2009</p> <p>Consider changing the second part of each answer choice to test procedure actions. I.E. A. RCP Th Barrier leak and 1-CC-TV-120B failed to close. [action A] B. [same] [action B] C. CVCS letdown HX tube leak and LCV-460 failed to close. [action C] D. [same] [action D] Q replaced. MAB 05/28/2009</p>
	039A1.05 (RO)	N	H	2-3										S	<p>How could SG pressure reach 1530 psig when the SGs are equipped with safety valves and SG PORVs? Q replaced. MAB 05/28/2009</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A			SRO Only
															<p>Suggest rewording the end of the question statement to: "... (b) the target S/G pressure that corresponds to the RCS no-load Tsat setpoint?" This is a little more precise language because it takes coefficients of heat transfer, etc off the table as potential arguments for no correct answer, etc. Q replaced. MAB 05/28/2009</p> <p>The stem states that RCS temp is high. This is a statement of judgment. It would be better to state what the RCS temp is indicating and make the applicant recognize if that is high. It is usually more operationally valid to provide the indications that the applicant would have in the control room. Q replaced. MAB 05/28/2009</p> <p>Is the FSAR design limit for temp required knowledge for an RO? Does the facility have a learning objective? Would the RO take any actions based on knowing that 650F is the design limit? Q replaced. MAB 05/28/2009</p> <p>One idea would be to test CET temp needed to place them in a red path and then test the SG pressure needed to get the RCS back to no-load values. This would be operationally oriented and it would also test a design value that definitely is RO required knowledge from the SFSTs. Q replaced. MAB 05/28/2009</p> <p>Enhancement to answer choices suggested on hard copy. Done. MAB 05/28/2009</p>
	061K5.02 (RO)	N	H	1-2									S	<p>Q is likely higher cog (C/A) because the applicant has to use the thumb rule to calculate the power ten minutes after trip and analysis is required to know how AFW demands will change over time. Granted – the Q is easy, but I think a mem level may be hard to justify. Changed to C/A. MAB 05/28/2009</p> <p>This question is only testing GFE knowledge. Can the question be modified to test site-specific information, such as plant-specific AFW control? Q modified to site specific info. MAB 05/28/2009</p> <p>The second part of each answer choice tests the same knowledge that is being tested in the first part of each answer choice. I.E. The applicant uses his thumb rule to decide how much power has lowered at the ten minute point and then essentially uses the same knowledge that power and heat load are going down to understand that AFW flow requirements are also going down. Q modified to site specific info. MAB 05/28/2009</p>	
	W/E06EK2.1	N	F	2-									S	Good Q.	

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A		
	(RO)			3										
	W/E16EA1.1 RO	N	H	2										S Question is higher cog (C/A) for analyzing which procedure to use. Incorporated. MAB 05/08/09 Suggest rewording the end of the question statement to: "... and FR-Z.3 actions ensure that recirculation sump pH remains slightly basic?" Incorporated. MAB 05/08/09 Answer choices contain a large amount of unnecessary reading burden. Consider: A. (1) Enter 1-FR-Z.1, RESPONSE TO CONTAINMENT HIGH PRESSURE." (2) To ensure the maximum cladding oxidation will not exceed 17% of nominal clad thickness, as required by 10CFR50.46, "ECCS Acceptance Criteria." Etc. Incorporated. MAB 05/08/09 What procedure is currently being performed by the operators? If a procedure transition is being tested, should we state in the stem from which procedure they will be transitioning? Incorporated. MAB 05/08/09 A parameter or two needs to be changed in the stem to make the correct answer a red or orange path. This is because rev 1 page 7 of the SRO guidance states that SRO-only knowledge cannot be claimed for red or orange path knowledge. Q replaced. OK MAB 05/28/2009
	036AA2.01 RO	N	H	2										S This information is from a 1985 SOER where an engineering calc was performed at Connecticut Yankee for the top 4-1/2 feet of a fuel assembly in the upender being exposed and about 3 feet of active fuel in the SFP being exposed. Is this operationally valid information on which to test an RO? Q modified. OK MAB 05/26/2009 Does Surry have an ARM that would indicate up to 50,000 Rem/hr? Q modified. OK MAB 05/26/2009 Does the facility have an RO learning objective that requires them to know this information? Q modified. OK MAB 05/26/2009 Would knowing (or not knowing) this information discriminate between a competent and less than competent operator? Would an RO take different actions if he know the does rates were 500 Rem/hr vs 500,000 Rem/hr?

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>Q modified. OK MAB 05/26/2009</p> <p>If answers to the above questions justify leaving the question on the exam, would it be better to simplify the question as follows and reduce the reading burden?:</p> <p>Q modified. OK MAB 05/26/2009</p> <p>Which one of the following correctly states the expected ARM indication 30 feet from a newly discharge irradiated fuel assembly?</p> <p>A. 500 Rem/Hr B. 5,000 Rem/Hr C. 50,000 Rem/Hr D. 500,000 Rem/Hr</p> <p>Q modified. OK MAB 05/26/2009</p> <p>The procedure states to evacuate the affected area (SFP or Containment). With rising rad indications in both locations, could it successfully be argued that both areas are affected? Would operators be wrong to evacuate both areas?</p> <p>Q modified. OK MAB 05/28/2009</p> <p>To address the above concern, should the answer choices state either (1) Fuel Building evacuation is required, OR (2) Fuel Building evacuation is NOT required?</p> <p>Q modified. OK MAB 05/28/2009</p> <p>Is the evacuation piece a Refueling SRO knowledge item?</p> <p>Q modified. OK MAB 05/28/2009</p>
	060AK3.02 (RO)	N	H	2-3								x	S	<p>Does a VCT level and trend need to be provided in the stem to ensure the rupture is in the gas space of the tank? Or is the Vent Stack #2 alarm enough?</p> <p>Q replaced. OK MAB 05/28/2009</p> <p>The supporting documentation states a ground level puff vs a stack release. Does this impact the question?</p> <p>Q replaced. OK MAB 05/28/2009</p> <p>The question statement should state "in accordance with a procedure whenever possible."</p> <p>Q replaced. OK MAB 05/28/2009</p> <p>It appears that AP-22 time critical actions are being tested as well as the basis for AP-5.20 action. Is this correct? I may need some help understanding the supporting documentation. Discuss with me when you get a chance.</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>Q replaced. OK MAB 05/28/2009</p> <p>SRO-only: I have concerns that going too deep in the FSAR safety analysis is not something for which an RO is required to know. FSAR safety analysis is not something that is defined in Bruno's SRO guidance, and maybe it should be. One idea may be to modify the question slightly to accommodate something like the following: A. Iso L/D within 25 min.....; Prevent exceeding 10CFR100 limits... B. Iso L/D within 25 min.....; Prevent exceeding 10 CFR20 limits.... C. Iso MCR ventilation.....; Prevent exceeding 10 CFR100 limits... D. Iso MCR ventilation.....; Prevent exceeding 10 CFR20 limits... Q replaced. OK MAB 05/28/2009</p>
	056AA1.29 (RO)	N	H	2- 3									S	<p>A reference is provided from AP-12.01. I understand that the AP is being directed by ECA-0.2. It may be a good idea to add the following to the first bullet in the current conditions: "... SI REQUIRED" and performing the step to restore SW to CC HXs in accordance with 0-AP-12.01, "LOSS OF INTAKE CANAL." Incorporated. MAB 05/08/09</p> <p>In the question statement suggest placing "0-AP-12.01" between "the" and "restriction". Incorporated. MAB 05/08/09</p> <p>Suggest stating "Crosstie CC." prior to the second part of the answer choices to be more complete with what the procedure states. This will help take a "no correct answer" argument off the table. Incorporated. MAB 05/08/09</p> <p>I was having trouble seeing how Part (2) was linked to greater than 8 hours after time zero. I need help understanding this. Explanation sat. MAB 05/08/09</p> <p>Question is borderline memory level. I understand the basis being that the applicant only really needs to have the caution memorize and the other piece is open book and very little higher cog thought is used to answer the question (although some is required). Leave as memory for now, but we should discuss this when we review my comments. OK with memory level after discussion. MAB 05/08/09</p>
	058G2.1.23 (RO)	N	F	2									S	<p>Whenever possible state iaw a procedure in the question statement. This goes a long way in "tightening" the question because it eliminates other procedures that the author may not even have considered when writing the question. Sometimes incorporating this suggestion may do more harm than good, but whenever possible it is a good idea to state iaw a procedure. Incorporated. MAB 05/08/09</p>

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					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A			SRO Only
															<p>Answer choices should generally only contain information that makes them unique from each other. I.E. These answer choices can be boiled down to: A. (1) Generator output breakers will open as expected following a turbine trip, (2) 'A' RCP will stop, 'B' and 'C' RCPs will remain running. ETC. for the other choices. Incorporated. MAB 05/08/09</p> <p>K/A Match: The K/A requires testing knowledge of the ability to perform procedures. If the applicant understands how the plant systems work, he does not need to know anything about performing plant procedures. I.E. If the applicant knows that Gen bkrs will not auto open and that 'B' and 'C' RCPs will stop, then the question can be answered correctly. Q modified slightly to better match K/A. MAB 05/08/09</p> <p>I think the question should be designated as higher cog (C/A). After discussion, Q was designated as memory level. OK MAB 05/08/09.</p> <p>I am not sure if the Q was Bank/Mod/or New? Incorporated. MAB 05/08/09</p>
	073K5.02 (RO)	N	H	2										S	<p>Is all the information in the stem necessary? Can some of it be deleted to reduce the reading burden. Some deleted. OK MAB 05/26/2009</p> <p>Why is the equation provided to the applicants? Deleted. OK MAB 05/26/2009</p> <p>The question is only testing GFE knowledge for a 1/r-squared calc. Is there a way to write a site-specific question? Struggled with plant-specific aspects, therefore question remains pure GFE. OK MAB 05/26/2009</p> <p>Is the correct answer the reading on the rad monitor or is it the factor by which the rad monitor reading would change from one distance to the other? Without providing what the rad monitor was reading at the first distance, how can the rad reading at the second distance be determined? Corrected. MAB 05/29/2009</p>
	064K4.10 064K4.04 (RO)	B	H	2							?			S	<p>This question does appear to be higher cog (C/A). How does this question compare to some of the other questions that you designated as memory level? Original Q Replaced. MAB 05/07/09</p> <p>Is the question technically accurate? Why should the CC pump not be started? With the conditions provided, the CC pump can be started</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>because no Hi-Hi CLS is in progress. Original Q Replaced. MAB 05/07/09</p> <p>I wrote a suggestion below the question. I was just brain storming, so I am not sure it makes sense, but it may spark an idea. Original Q Replaced. MAB 05/07/09</p> <p>The question is testing on what an operator "should" do. It is always better to test on what an operator is "required" to do, unless the procedure step specifically states "should." Original Q Replaced. MAB 05/07/09</p> <p>It is usually better to tie the question statement directly to the procedure that is being tested. Suggestion adding iaw the procedure. Original Q Replaced. MAB 05/07/09</p> <p>If it is not necessary to significantly revise the question, consider wording the question statement to precisely what is reflected in the answer choices. I.E.: "Based on the current conditions, which one of the following correctly identifies the reason the 'A' component cooling (CC) pump cannot be started in accordance with 1-AP-10.07, LOSS OF UNIT 1 POWER?" Original Q Replaced. MAB 05/07/09</p> <p>Replacement Q does not meet the K/A. The K/A requires testing knowledge of EDG system design features and/or interlocks associated with overload. The proposed question tests knowledge of overloading the EDG, but it does not test knowledge of a design feature or interlock, rather it tests knowledge of a procedural limitation in the form of a caution. K/A changed. Q replaced again. MAB 5/19/2009</p> <p>An idea would be to test something with the EDG sequencer, which would be testing a design feature that is intended to prevent an overload condition of the EDG. K/A changed. Q replaced again. MAB 5/19/2009</p> <p>Would it be possible to change "A" and "D" to: A. F-58B / "A" Pzr Htrs / P-3B D. P-3B / "A" Pzr Htrs / F-58B This would eliminate the need for using the terminology "ONLY". It would also allow the applicant to nuke out the answer based on relative importance of the equipment, which would be a good idea. Discuss when you get back to the office. With my suggested changes, I would consider this question to be satisfactory. Third items added to other choices. OK MAB 05/28/2009</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A			SRO Only
	103A1.01 (RO)	M	F	2										S	<p>Are points on Figure 3.8-1 a memory item? Is a reference required to be provided to the applicant? If a reference is provided, would the question be a direct lookup? Q modified. MAB 05/27/2009</p> <p>Is the design information important knowledge for an RO? Q modified. MAB 05/27/2009</p> <p>I think a more operationally valid and more discriminating question could be written if you were to test at what pressure and logic will contain isolate and at what pressure and logic can the isolation signal be reset. This would be very operationally oriented and it would move the question away from any minutia, SRO-only, or provided reference concerns. Incorporated. MAB 05/27/2009</p> <p>Are there any overlap issues with 103K4.06? There may not be a conflict, but it should be explored and discussed to be sure. OK. MAB 05/27/2009</p> <p>Small editorial changes should be considered to simplify the question presentation and increase the precision of the language in the answer choices. OK MAB 05/28/2009</p>
	062K2.01 (RO)	B	F	2										S	<p>Good Q. Only minor enhancements needed. OK MAB 05/08/09</p> <p>The stem states that steam dump control is not affected. Is there a more operationally valid way to state this? What indications would tell the operator that it is not affected? If there is no clean way to provide plant indications, I am OK leaving it the way it is. Discussed and decided not to change. OK MAB 05/08/09</p> <p>The stem states that there is a loss of CC to all RCP thermal barriers. Does this occur because a valve fails closed? If so, there may be a more operationally valid way to provide this information. Discussed and decided not to change. OK MAB 05/08/09</p> <p>Should the last bullet be more specific? What is meant by other RCP loads? The supporting documentation provides some info like lube oil and stator coolers. It may be better to specifically state these. Incorporated. MAB 05/08/09</p> <p>Good question construction allows the applicant to read the stem, then read the correct answer and know, without, reading the distractors, that the answer is correct. The issue with using the word "only" in the answer</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	I Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A			SRO Only
															choices is that it makes interpreting the answer choices dependent on the other answer choices. In other words, the applicant must ready the distractors to define the word "only" that is used in the correct answer. It may take a few more words, but the answer choices can be written more precisely. Suggest rewording answer choices as follows: A. Vital Bus I is de-energized. Vital Buses II, III, and IV are energized. B. Vital Buses I and III are de-energized. Vital Buses II and IV are energized. ETC. Incorporated. MAB 05/08/09
	G2.1.40 (RO)	N	F	2										S	Good Q. Minor enhancements only. OK. MAB 05/08/09 Add to the question statement: "...required operator action(s) in accordance with the Precautions and Limitations of 1-OP-FH-001, CONTROLLING PROCEDURE FOR REFUELING?" Incorporated. MAB 05/08/09
	039A2.03 (SRO)	N	H	2										S	With a rapidly lowering pwr P and L, would SI be required? Can this be presented to make it clear that an SI is not required? Incorporated. MAB 05/08/09
	076AA2.02 (SRO)	N	F	2										S	Is the designated answer actually correct? The TS states that the actions are based on time of detection. The condition is actually detected when the results are available, not when the sample is taken. At the time the sample is taken, they have not detected anything. This would be akin to an operability call and associated TS required action. Regardless of how long a piece of equipment may have been unable to perform its safety function, the TS actions are in effect beginning from the time of discovery. Corrected. MAB 05/27/2009 Greater than one hour tech specs are not permitted to be tested in a closed book format. An easy fix would be to test when the condition of the LCO is no longer met. I.E.: A. LCO not met at 10:05 hours. [Second parts can remain the same] B. LCO not met at 10:45 hours. Etc. Incorporated. MAB 05/27/2009
	022K1.04 (RO)	B	H	2										S	Sat bank Q from 2004 Surry exam.
	103K4.06 (RO)	B	H	2										S	Question is C/A. Applicant must apply TS knowledge to answer the Q. Changed to C/A. MAB 05/28/2009
	008G2.1.7	B	H	2										S	Is it plausible for rods to move out? Would it be more plausible for rods

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
	(RO)													not to move at all? Discuss and try to determine if the question is best as it is or if there is a better, more plausible, choice of distractor. Surge Tank Level change and EOL added. This creates plausibility in that a determination must be made as to whether the rate circuit or the tagv will induce rod movement. OK MAB 05/28/2009	
	073A2.02 (SRO)	M	H	3-4									S	Are there technical references from the facility to support the technical accuracy of the rad monitor setpoints? Note to licensee added. OK MAB 05/27/2009 Minor changes being made. OK MAB 05/28/2009	
	039K4.04 (RO)	M	H	2									S	Make minor enhancements as noted on hard copy. Done. MAB 05/28/2009 Enhance the plausibility justification in the answer choice analysis. Done. MAB 05/28/2009	
	061K6.01 (RO)	N	H	3									S	Q is sat.	
	G2.3.12 (SRO)	N	H	3									S	Q is sat.	
	015G2.2.22 (SRO)	N	H	2					x	x				S	Why are they required to shutdown as directed by Tech Specs? Tech Specs do not permit aux sprays to be used, but I did not see where Tech Specs required a shutdown. Are pressurizers spray valves required to be operable? Is there an LCO for spray valves to be operable? Could pressurizer heaters be cycled to control pressure? Can PORVs be used to control pressure? There is still not enough documentation to support which answer is correct. The question was revised in such a manner that one and only one answer is correct and a note to the licensee has been added for them to help provide supporting documentation. MAB 05/08/09 It is better to test on what is required. Suggest wording the lead-in statement to read: "Unit 2 is required to be ..." Incorporated. MAB 05/08/09

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
															<p>Distractor "D": It would be better to test a different time to HSD, rather than test in one answer choice when they need to be in HSD and the other answer choice when they need to be in CSD. Try to test two different times when they would need to be in HSD (or CSD). Q revision made this comment moot. MAB 05/08/09</p> <p>There are subset issues between the answer choices which causes multiple correct answers and distractor plausibility issues. For example, if "C" is correct, then "A" would also be correct. If "C" is correct, then "B" is correct. If "A" is correct then "B" is also correct. Q revision made this comment moot. MAB 05/08/09</p> <p>A note to the licensee still needs to be added to ask them to provide supporting documentation for what constitutes pressurizer operability. Note was added. MAB 05/18/2009</p> <p>Consider making a small wording change to the question statement. LCOs always apply, therefore, the more precise terminology is to ask whether or not the conditions of the LCO are met or whether the actions of the LCO are required to be performed. Incorporated. MAB 05/18/2009</p> <p>To be safe, the status of all the RCPs should be stated in the initial plant conditions. Incorporated. MAB 05/18/2009</p>
	015AA2.09 015K1.02 (RO)	N	H	2									S	<p>Suggest changing the question statement to more precisely ask for exactly what is being tested. I.E.: "Given the above temperature readings, which one of the following correctly states the RCP, if any, that exceeds an ACTION LEVEL limit in Attachment 2, RCP Parameters, of 1-AP-9.00, RCP ABNORMAL CONDITIONS? Incorporated. OK MAB 05/08/09</p>	
	003A3.04 Bates (RO)	N	H	2									S	<p>Are the last four words of "C" necessary? Q replaced. MAB 05/28/2009</p> <p>Is it necessary to state that P-7 is not lie and P-10 is lit? Q replaced. MAB 05/28/2009</p> <p>Will an RCP trip if the high P tap ruptures? Walk me through the supporting documentation? Q replaced. MAB 05/28/2009</p> <p>Replacement Q is sat. MAB 05/28/2009</p>	

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
	006K1.05 (RO)	N	H	2- 3										S How can distractor "B" be ruled out as a correct answer choice with the information provided in the stem? 1381 does not get opened until after Ch and LD re-established. MAB 05/08/09 The stem states that actions have been completed to establish normal charging and letdown. Therefore normal charging and letdown are in service. If this were the case, would 1-CH-MOV-1381 still be in the closed position. 1381 does not get opened until after Ch and LD re-established. MAB 05/08/09 Distractor analysis for "B" was not completed. Completed. MAB 05/27/2009 What step of ES-1.1 are the operators performing at the time the question is asked? What info in the stem would indicate that 1381 has not yet been opened? At the point where charging and L/D are re-established, 1381 would be closed. MAB 05/27/2009
	003A4.08 (RO)	N	F	2										S It is preferable to not state that the applicants should assume something in the stem because App E provides specific instruction not to assume. Can "Assume pressure slowly bleeds off the valve actuators" be added as a condition in the bulleted list? - Containment instrument air pressure is slowly dropping. Corrected. MAB 05/27/2009 Generic comment to be applied to all questions: Generally component names should not be capitalized. The NRC is fairly consistent with this practice for inspection reports, etc. We will do an admin review of the completed exam to check for consistency for various items. OK. MAB 05/27/2009
	004A4.08 (RO)	N	H	2										S Question should be designated C/A. Conditions in the stem must be analyzed to arrive at answer. FCV-1122 in auto must be linked to flow limits and then they need to understand that flow limits are not in play while in manual. Changed to C/A. MAB 05/28/2009 Minor enhancements noted on hard copy. Incorporated. MAB 05/28/2009
	022G2.4.11	N	H	2				x						S Make small editorial enhancements as marked on hard copy. Completed. OK MAB 05/26/2009

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
	(RO)													<p>"D" is not plausible. It is not credible to allow the plant to run when the unit is entirely without charging flow. Corrected. MAB 05/26/2009</p>
	005A2.01 (RO)	N	F	2									S	<p>"A", "B", and "C" are not plausible because they are essentially the same answer. If any one of them is correct, then the other two would be correct. Q replaced. MAB 05/18/2009</p> <p>LOD=1. Q replaced. MAB 05/18/2009</p> <p>What information is provided in the stem for an operator to determine if a rod is stuck? If the information needed to make that decision is not present, then "A" and "B" cannot be plausible. Q replaced. MAB 05/28/2009</p> <p>Could a rod be both dropped and stuck? What indications in the stem allow for this differentiation to be made? I.E. Could a rod partially fall into the core prior to being stuck? Q replaced. MAB 05/28/2009</p> <p>Are rods required to be within 12 steps of either Group 1 or Group 2, OR within 12 steps of either Group 1 or Group 2? Q replaced. MAB 05/28/2009</p> <p>The stem states that rod B-8 is located at 182 steps. The instruments that provide this information should be stated in the stem. I.E. IRPI or DRPI position is Q replaced. MAB 05/28/2009</p> <p>Operability can be considered an SRO function unless it is either at a very basic level or it is Tech Spec entry criteria. Can Tech Spec entry criteria be used as justification to ask this as an RO question? If so, a small statement in the analysis section may be a good idea. Q replaced. MAB 05/28/2009</p> <p>K/A Match: How are the excore NI readings indicative of a dropped rod? Q replaced. MAB 05/28/2009</p> <p>Replacement Q is sat. MAB 05/28/09</p>
	003G2.4.31	M	H	2									S	<p>The question asks for the withdrawal rate limit. According to the question analysis, this limit is 2.78. The CAUTION in the AP clearly states that the calculated rate must be rounded down; thereby making 3 steps/hour much</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
	(RO)													more plausible than 1 step per hour. Q replaced. MAB 05/28/2009 Question has to be higher cog (C/A) because they are performing a math equation. Q replaced. MAB 05/28/2009 All SRO questions need to contain a statement for why SRO-only knowledge is required to arrive at the correct answer. This needs to be added. Q replaced. MAB 05/28/2009 Replacement Q is sat. MAB 05/28/2009
	001K2.05 (RO)	N	F	2									S	Delete the Current Condition portion of the stem. Deleted. MAB 05/27/2009 The Answer Analysis states that "A" is the correct answer, but the supporting documentation supports "B" as being the correct answer. Corrected. MAB 05/27/2009 Further explain the plausibility of "C" and supply supporting documentation that supports the plausibility. Author explained that plausibility comes from similarity in nomenclature. OK MAB 05/27/2009
	G2.1.29 (RO)	N	F	2									S	2 nd part of "B" and "D" do not appear to be plausible because if a valve wrench is permitted to initially move the valve, then it would make sense that it would be permitted to further move the valve. Replaced. MAB 05/27/2009 Suggestion provided that changes the wording to make question more memory level and replaces the 2 nd part of "B" and "D". Incorporated. MAB 05/27/2009
	G2.2.40 (RO)	M	F	2									S	Sat with minor enhancements.
	G2.1.20 (SRO)	N	H	2						x			S	It appears that the first part of "A" and "C" are correct answer choices. Q revised to address plausibility and ensure one and only one correct answer. OK MAB 07/10/2009.
	006A2.12	B	H	2									S	Question meets K/A in that it addresses required actions that are a result of the impacts of conditions that required an SI.

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
	(SRO)														
	015G2.2.22 027G2.2.22 Capehart (SRO)													S	Q is sat.
	013K2.01 (RO)	N	F	2										S	Q is sat.
	063K3.02 (RO)	N	F	2										S	Q is sat.
	017K5.02 Bates (RO)	B	H	2										S	Q is sat.
	014A4.01 Bates (RO)	N	F	2										S	Q is sat.
	008AA2.20 008AK1.02 Capehart (RO)														
	010G2.4.20 Shaaf (SRO)	N	H	2									?	S	<p>The basis information from page 37 of the LP states that the reason for minimizing PORV cycling is to prevent excess release to the PRT (AKA rupture disk blowing) and to reduce the chance of the valve failing. Would concerns over valve reseating be the same as concerns over valve failure? Could "D" be successfully argued as correct if valve not reseating is a method of valve failure? Addressed. OK MAB 05/21/2009</p> <p>SRO-only? The SRO-only guidance is silent on EOP basis information. I was hoping that each of you would flow chart the SRO-only questions through that guidance document so that you could successfully justify each of your SRO-only questions. Does the facility have an SRO-only learning objective? Can we accept EOP basis information for an SRO-only question? The 10CFR50.43 states that SROs are responsible for procedure selection, so this is the more standard way of hitting the SRO-only piece. We should discuss this and maybe we can get enough buy-in from other examiners that we can accept EOP basis as SRO-only. We have already</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q=K/A			SRO Only
															<p>been discussing this aspect for improving the SRO-only guidance. Procedure selection now being tested. OK MAB 05/21/2009</p> <p>Add dashes or bullets to the list of conditions in the stem. At the end, we will just ensure that we are presenting the questions in the same way.</p>
	025AA2.05 Shaaf (SRO)	N	H	2-3										S	<p>Add "Loss of RHR" to the K/A statement. Addressed. OK MAB 05/21/2009</p> <p>For what Unit does the question pertain? Also, the designated AP is a unit specific AP (I.E. 1-AP-27.0). Addressed. OK MAB 05/21/2009</p> <p>SRO-only? How does this question screen in the SRO-only guidance? We need to make sure we can justify SRO-only questions iaw the guidance because we are holding the licensee's to this same standard. We need to be careful with the message that we could send if we do not hold ourselves to that same standard. I am not sure we have the latitude on this question as we may have on 025AA2.05. Addressed. OK MAB 05/21/2009</p> <p>Is there any limitation on LPI flow or temperature during a loss of RHR that would impact the E-plan? Just trying to think of ideas that may be SRO only. Addressed. OK MAB 05/21/2009</p>
	027AA2.15 Shaaf (SRO)	N	H	3										S	<p>Your answer choice analysis should include why each distractor is wrong. I.E. P-445 has not failed high because that would cause PORV-1456 to fail open, not PORV-1455C. Addressed. OK MAB 05/21/2009</p> <p>Does the stem need to state that a rx trip is imminent? Moot. Q modified. MAB 05/21/2009</p> <p>Are we testing an important concept to decipher between "A" and "B"? If an operator thought the answer was "A" he would perform the exact same actions as if he thought the answer was "B". If this is important to test, then you may be able to use the procedure selection piece of this to justify the question as SRO-only. I do have some doubts as to whether this is an important concept to test, but I am open to discussion. Moot. Q modified. MAB 05/21/2009</p> <p>One idea may be to test on operability of the PORV due to the P-444 failure. The PORV may not be impacted by the P-444 failure because the RCS is still hot and auto operation may not be required for operability, but if that were the case the correct answer could state that the PORV remains</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														operable. You could almost use everything already I your question and word it something like this: A. P-444 failed high. PORV operability has been affected. B. P-444 failed high. PORV operability has NOT been affected. C. P-445 failed high. PORV operability has been affected. D. P-445 failed high. PORV operability has NOT been affected. Incorporated. OK MAB 05/21/2009
	035A2.01 Shaaf (SRO)	N	H	2									S	Answer choice analysis should include why an answer is correct and why a distractor is plausible as well as correct. Each of these components should be present in the answer choice analysis for each question. Incorporated. OK MAB 05/21/2009 Question may be satisfactory. Normally analyzing plant parameters requiring entry into E-2 and E-3 are required abilities for an RO. This question is a little different in that conditions requiring performance of both E-2 and E3 exist. Q significantly modified. OK MAB 05/21/2009 Should "A" and "C" SG pressures be higher than what is stated. Is it clear that a high steam flow did not exist on more than one steam line? Q significantly modified. OK MAB 05/21/2009
	051G2.4.11 Shaaf (SRO)	N	H	2									S	Question overlaps with a condenser vacuum question. This question is not SRO-only and the other Q is a pretty good question, so it may make sense to try to change your question. Sorry. Q replaced. MAB 05/28/2009 Question is not SRO-only. Reactor Trip and Turbine Trip criteria are typically knowledge items required of ROs. Q replaced. MAB 05/28/2009 "B" may not be plausible. Is it reasonable to have criteria to trip the reactor but not have criteria to trip the turbine? Q replaced. MAB 05/28/2009 Current Condition time should be changed to 1506 to ensure that 5 minutes have elapsed, or place time in seconds on both the initial and current conditions. Q replaced. MAB 05/28/2009 Idea: The K/A requires writing a question requiring knowledge pf abnormal procedures. A liberal interpretation of abnormal procedure would apply to the e-plan because EIPs are only used for abnormal circumstances. One idea may be to have a SGTR and a LOOP, where the cooldown must be

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
															performed with the SG PORVs. It may be worth checking the e-plan to see if there is any fruit for a question. It may be possible to test the overall topic because the loss of condenser vacuum would create the conditions to require the direct release from the SG PORVs. (Maybe through in some fuel failure to get them somewhere in the e-plan) Q replaced. MAB 05/28/2009
	059G2.4.35 Shaaf (SRO)	N	F	3										S	I am not sure that this question can make it through the screening criteria as set forth in the SRO-only guidance. We can discuss how the question screens through the guidance document. Q replaced. MAB 05/28/2009 One idea for the second part of the question may be to test on what operators are supposed to do if all of their actions, including feed and bleed have not been successful. I think at some point they go to Attachment 4 and verify E-0 actions. You could test whether they go to Attachment 4 or somewhere else, thereby testing procedure selection which is supported by the CFR and the SRO-only guidance as being SRO-only knowledge. Q replaced. MAB 05/28/2009
	062AA2.06 Shaaf (SRO)	N	H	2									?	S	How does this question screen through the SRO-only guidance? Tech Spec entry is typically considered RO knowledge. Operation of safety significant equipment within specified limits is usually considered RO knowledge. Q replaced. MAB 05/28/2009 Distractor analysis states that "A" is correct, yet "C" is checked as the correct answer. Q replaced. MAB 05/28/2009 The following may be moot if we can't justify the Q at the SRO-only level. Will bearing temperatures rise in a linear fashion? Is this an operationally valid assumption? I understand that you went in this direction because of the K/A. I would be a little more comfortable with the following idea: Q replaced. MAB 05/28/2009 Add some times and temps 1420 hours Charging Pump Bearing Temp = 160F 1430 170 1440 180 1450 185 1500 190 Q replaced. MAB 05/28/2009 Given the above bearing temperatures, WOOTF correctly states how the charging pump should be operated iaw 0-AP-12.00?

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														<p>Then answers could be similar to:</p> <p>A. Preps to shift charging pumps should begin at 1440 hours. Charging pumps should be secured at 1450 hours.</p> <p>B. Preps to shift charging pumps should begin at 1440 hours. Charging pumps should be secured at 1500 hours.</p> <p>C. Preps to shift charging pumps should begin at 1430 hours. Charging pumps should be secured at 1440 hours.</p> <p>D. Preps to shift charging pumps should begin at 1430 hours. Charging pumps should be secured at 1450 hours.</p> <p>Q replaced. MAB 05/28/2009</p>
	G2.2.14 Shaaf (SRO)	N	F	2-3									S	<p>Discuss the incorrectness of "B".</p> <p>Discuss the clarity of the "next 72 hours" as stated in the stem.</p>
	G2.3.4 Shaaf (SRO)	N	H	2									S	<p>Some minor formatting suggestions that should be applied to this Q and other similar questions. See notes on hard copy.</p> <p>Whenever possible, always state "iaw a procedure" in the question statement. There is likely an Admin procedure that states the EDLs for saving equipment. If you think this injures the plausibility, then adding the words "in order to save valuable equipment" may be enough if added to the last bullet (it should be added even if we add "iaw procedure").</p> <p>Is there any method that could lead the operators to 1-ECA-3.1 besides not being able to isolate the SG? In other words, is there any way "B" could be correct?</p>
	G2.4.9 Shaaf (SRO)	N	H	2-3									S	<p>Add unit numbers to procedures in this question, as well as other questions. Q replaced. MAB 05/28/2009</p> <p>Should the condition in the question statement be added to the list of conditions?> Q replaced. MAB 05/28/2009</p> <p>Can > 125 gpm be achieved with on charging pump? Q replaced. MAB 05/28/2009</p> <p>Why is "D" incorrect? Why would aligning and starting another charging pump not be a method for meeting the conditions of 1-AP-16.01, step 6? Q replaced. MAB 05/28/2009</p>
	005G2.4.9 Shaaf (RO)	N	H	2									S	<p>Q is satisfactory as long as 12.5 feet is a level at which vortexing could occur.</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
	010A3.02 Shaaf (RO)	N	H	2										S	Is there supporting documentation for the basis of the maximum pressurizer spray valve that could be added to the package? Added. OK MAB 05/21/2009 I believe the Q is actually C/A. The conditions in the stem must be analyzed in order to determine the status of the spray valve. Discuss. Incorporated. MAB 05/21/2009
	011EK3.12 Shaaf (RO)	N	H	2										S	The reason supplied in "A" is not the reason for securing the RCPs. "A" explains why there is no harm in securing the RCPs. The reasons for securing the RCPs is due to SBLOCA, as well as potentially needed them later in FR-C.1 (I think) to force coolant through the loops. This should be an easy fix if you look at their EOP basis document, and/or the WOG. Incorporated. MAB 05/21/2009 All other aspects of the Q are satisfactory, so if you can place a correct reason for securing the RCPs in "A", the Q should be OK. OK MAB 05/21/2009
	012A4.07 Shaaf (RO)	N	F	2										S	Should the status of all the RTBs and bypass bkrs be stated in the stem? This may be necessary to ensure one and only one correct answer. The other way to accomplish the same thing would be to state that they are at a certain point in a PT when the operator attempts to close RTB B, but that would walk the Q away from arguably being memory level. Incorporated. MAB 05/21/2009
	012K1.05 Shaaf (RO)	N	H	2										S	K/A: Will Rx Trip directly on low pwr pressure with the conditions in the stem? If so, does the applicant require knowledge of the Rx Trip on SI? If the RPS does not directly trip on pwr low pressure, then the K/A is met. RPS does not trip on pwr low P. OK MAB 05/21/2009
	015K5.10 Shaaf (RO)	N	H	2										S	Q is pure GFE. If operator actions are tested in conjunction with NI indication then site-specific information may be required to answer the question. Q modified. OK MAB 05/28/2009 Analysis states that Tc will get colder as power is raised. Is this true? Or will Th primarily get hotter with Tc remaining almost stable? Q modified. OK MAB 05/28/2009 Operators will be pulling rods as power is raised. Will this pull flux to the top of the core? Is enough info provided to ensure one and only one correct answer? Q modified. OK MAB 05/28/2009
	025AK1.01	N	H	2					?					S	Is it credible to maintain RCS temp 30F lower than the temp stated in the

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
	Shaaf (RO)													<p>stem in the presence of a total loss of RHR? Is "C" plausible? Words added to Q. OK MAB 05/21/2009</p> <p>Is a requirement to start all 3 RCPs plausible when the reactor is just producing decay heat? Is "A" plausible? Changed A. MAB 05/21/2009</p> <p>What is the status of the SGs when RCS Temp is 320F? Are the SGs required to have level maintained within a certain band during these conditions? Yes, OK MAB 05/28/2009</p> <p>Are there any subset concerns between "A" and "D"? It may be OK, but we should discuss to be sure. Changed A. MAB 05/21/2009</p>
	026K3.02 Shaaf (RO)	N	H	2									S	<p>Exactly what fails to align? Does the stem need to be more specific? Incorporated. MAB 05/21/2009</p> <p>Is this SRO-only? I think the question can be justified as RO because the system purpose is RO knowledge and their LP states the correct answer as part of the system purpose. LP states part 2 of question as "system purpose". OK MAB 05/21/2009</p>
	027AK3.03 Shaaf (RO)	N	F	2					?				S	<p>Plausibility? The level increase is a direct result of the pressure decrease. Now here's the hypothetical analogy: If level decrease was the correct answer, then pressure decrease would also be the correct answer. In other words, these two answers are not independent and unique items. Corrected. OK MAB 05/21/2009</p>
	035A2.01 Shaaf (RO)	N	F	2									S	<p>Add IAW a procedure if possible. Incorporated. MAB 05/21/2009</p> <p>Consider modifying Q statement as written on hard copy. Incorporated. MAB 05/21/2009</p>
	037G2.4.4 Shaaf (RO)	N	H	2									S	<p>See wording suggestions on hard copy. Incorporated. MAB 05/21/2009</p>
	038EA1.21 Shaaf (RO)	N	H	2					?				S	<p>Concerns over plausibility of "Decreasing." Discuss. Discussed. OK MAB 05/21/2009</p>
	055EK1.02 Shaaf (RO)	N	F	2									S	<p>Which do you think is more plausible? TDAFW pump runout OR Brittle fracture concerns? Deleted in modification. MAB 05/21/2009</p>

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
														Is this Q SRO-only? Do they have an RO learning objective? Discuss. Knowledge tested is located in a procedure note, therefore it is RO knowledge. OK MAB 05/21/2009
	057AA2.20 Shaaf (RO)	N	H	2										S Minor enhancements. OK MAB 05/21/2009
	059K4.16 Shaaf (RO)	N	F	2										S Minor enhancements. OK MAB 05/21/2009
	062K3.03 Shaaf (RO)	N	F	2										S Discuss plausibility of "A". Modified MAB 05/21/2009
	065AA1.03 Shaaf (RO)	N	H	2										S Q is sat.
	068G2.4.42 Shaaf (RO)	N	F	2										S No comments.
	072K4.01 Shaaf (RO)	N	F	2										S Add component IDs to stem and answer choices to raise the precision of the question. OK MAB 05/28/2009 Distractor analysis: - "C": Is the action correct? - "D": Is the action correct? Enhanced. OK MAB 05/21/2009
	076K4.02 Shaaf (RO)	N	H	2										S Does the status of both of the CH SW pumps need to be provided in the stem? Incorporated. MAB 05/21/2009
	078K3.03 Shaaf (RO)	N	F	2										S Minor enhancements. OK MAB 05/28/2009 Plausibility of stable U2 pressure? Do Unit headers ever auto isolate? Are they ever split out? Discussed. OK MAB 05/28/2009
	W/E05EA1.1 Shaaf (RO)	N	H	2										S Why is depress a second SG prohibited by procedure? See step 8 of procedure. Modifications made to address. OK MAB 05/21/2009
	W/E08 EK1.3 Shaaf	N	F	2										S With the above conditions, how can the applicant determine that the "B" RCS Loop Th is the highest Th? The applicant can determine that the Tc

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A		
	(RO)													from the "B" SG is the highest Tc, but I'm not sure that the stem contains enough info to determine the highest Th. Discuss. Modified. MAB 05/21/2009 Be consistent with how K/A is stated at top of question. Westinghouse K/As should be displayed as W/E08 EK1.3. Incorporate into any other Westinghouse specific K/As. Modified. MAB 05/21/2009
	G2.1.44 Shaaf (RO)	N	H	2									S	K/A Match: Are the actions being tested associated with fuel handling? Or are the actions associated with a loss of RHR, with or without fuel handling in progress? Q replaced. MAB 05/28/2009 Would Surry conduct refueling activities with an RCS Temp of 185 F? Q replaced. MAB 05/28/2009 Wording enhancements noted on hard copy. Q replaced. MAB 05/28/2009 Question appears to be C/A. Discuss. Q replaced. MAB 05/28/2009 How is "C" plausible? What conditions have been provided in the stem that indicates that vortexing is occurring? I understand that level is going down, but reducing flow will not combat the event. Q replaced. MAB 05/28/2009 How is "D" plausible? The upender is typically a good safe place for a fuel assembly. Q replaced. MAB 05/28/2009
	G2.3.5 Shaaf (RO)	N	F	2									S	Minor enhancements noted on hard copy. OK MAB 05/28/2009 Will a DAD detect beta? If so, then wording in "A" and "B" will need to be revised to not use the word ONLY. OK MAB 05/28/2009 Does supplied documentation support the incorrectness of the "...75% of scale" piece of "B" and "D"? Modified. MAB 05/28/2009 Is neutron detection plausible? Would beta be a better option than neutron? OK MAB 05/28/2009

Q #	K/A#	B M N	L O K	L O D	Psychometric Flaws					Content Flaws			U E S	Comment Explanation	
					Stem Focus	Cues	T/F	1 Non Cred Dist	>1 Non Cred Dist	Partial	Min B/W	Q= K/A			SRO Only
	G2.4.14 Shaaf (RO)	N	F	2										S	No comments.
	G2.4.18 Shaaf (RO)	N	H	2										S	<p>First part of each answer choice contains a subset issue. Resolved. MAB 05/21/2009</p> <p>Should parameters be added to stem for determination of adverse numbers? OK MAB 05/28/2009</p> <p>Are "C" and "D" plausible? In the presence of a SBLOCA, would it be credible to allow an RCP to stay running? Resolved. MAB 05/21/2009</p> <p>In FR-H.1, RCPs are secured to minimize heat input into the RCS. Minimizing heat input will lengthen the time to PORV lift. Can this successfully be argued as correct? Resolved. MAB 05/21/2009</p>
	G2.4.49 Shaaf (RO)	N	H	2										S	<p>Minor enhancements noted on hard copy. Resolved. MAB 05/21/2009</p> <p>Can "immediately" be deleted from the question statement? Having the word in the question statement may not be needed to hit the K/A. If there is a technicality that the actions are not immediate actions as defined by brackets, then the question would still stand up in the post-exam environment because it would still be technically accurate. Deleted. MAB 05/21/2009</p> <p>Does the status of all the U1 charging pumps need to be stated in the stem? Do conditions in the stem preclude "A" from being correct?</p> <p>Does distractor "A" overlap with another question? Not to our knowledge. MAB 05/21/2009</p> <p>Define ONLY in "B". Resolved. MAB 05/21/2009</p>
	W/E13 EK2.2 Shaaf (RO)	N	H	2										S	<p>Be consistent with how K/A is stated at top of question. Westinghouse K/As should be displayed as W/E08 EK1.3. Incorporate into any other Westinghouse specific K/As. Resolved. MAB 05/21/2009</p> <p>Minor enhancements noted on hard copy.</p>

Facility: <u>SURRY</u>		Date of Exam: <u>29 JULY 2009</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>FE</u>	<u>N/A</u>	<u>MB</u>	
2. Answer key changes and question deletions justified and documented	<u>FE</u>		<u>MB</u>	
3. Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	<u>FE</u>		<u>MB</u>	
4. Grading for all borderline cases (80 ±2% overall and 70 or 80, as applicable, ±4% on the SRO-only) reviewed in detail	<u>FE</u>		<u>MB</u>	
5. All other failing examinations checked to ensure that grades are justified	<u>FE</u>		<u>MB</u>	
6. Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	<u>FE</u>	↓	<u>MB</u>	
Printed Name/Signature		Date		
a. Grader	<u>Frank J. Ehrhardt / [Signature]</u>		<u>8/5/09</u>	
b. Facility Reviewer(*)	<u>N/A</u>		<u>N/A</u>	
c. NRC Chief Examiner (*)	<u>MARK A. BATES / [Signature]</u>		<u>05 AUG 2009</u>	
d. NRC Supervisor (*)	<u>WALCOU T. MORGAN / [Signature]</u>		<u>08/05/09</u>	
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.				