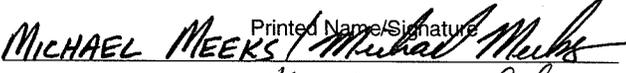
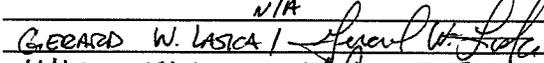
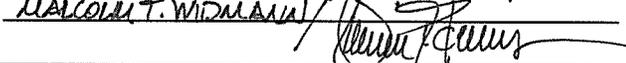


Facility:	Harris 2011-301	Date of Examination:	07/11/2011
Examinations Developed by:	Facility	NRC	
	Written / Operating Test	Written / Operating Test	
Target Date*	Task Description (Reference)	Chief Examiner's Initials	
-180	1. Examination administration date confirmed (C.1.a; C.2.a and b)	08/17/2010	
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	03/08/2011	
-120	3. Facility contact briefed on security and other requirements (C.2.c)	03/08/2011	
-120	4. Corporate notification letter sent (C.2.d)		
[-90]	[5. Reference material due (C.1.e; C.3.c; Attachment 2)]	05/27/2011	
{-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)	04/27/2011	
{-70}	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	05/05/2011	
{-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 reference materials due (C.1.e, f, g and h; C.3.d)	05/27/2011	
-30	9. Preliminary license applications (NRC Form 398's) due (C.1.i; C.2.g; ES-202)	06/13/2011	
-14	10. Final license applications due and Form ES-201-4 prepared (C.1.i; C.2.i; ES-202)	06/27/2011	
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	2/7/2011	
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g)	2/7/2011	
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	07/01/2011	
-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 4; ES-202, C.2.e; ES-204)	07/01/2011	
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k)	07/01/2011	
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	07/01/2011	
<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>			

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.	AL	HL	SL
	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.	AL	HL	SL
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	AL	HL	SL
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	AL	HL	SL
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.	AL	HL	SL
	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.	AL	HL	SL
	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.	AL	HL	SL
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.	AL	HL	SL
	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	AL	HL	SL
	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.	AL	HL	SL
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.	AL	HL	SL
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	AL	HL	SL
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	AL	HL	SL
	d. Check for duplication and overlap among exam sections.	AL	HL	SL
	e. Check the entire exam for balance of coverage.	AL	HL	SL
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	AL	HL	SL
a. Author	Archie Lucky	Archie Lucky		Date
b. Facility Reviewer (*)	SIMON SCHWIKOST			04/26/2011
c. NRC Chief Examiner (#)	GERARD W. LASICA			07/05/2011
d. NRC Supervisor	MARK FRANCE			7/6/11
Note:	# Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines			

Facility: HARRIS		Date of Examination: JULY 2011		
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.	M	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.	M	N/A	
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	M	N/A	
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	M	N/A	
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.	<del> </del>	<del> </del>	<del> </del>
	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.	<del> </del>	<del> </del>	<del> </del>
	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.	<del> </del>	<del> </del>	<del> </del>
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.	N	A	
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations	<del> </del>	<del> </del>	<del> </del>
	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.	<del> </del>	<del> </del>	<del> </del>
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.	M	N/A	
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	M	N/A	
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	M	N/A	
	d. Check for duplication and overlap among exam sections.	N/A	N/A	N/A
	e. Check the entire exam for balance of coverage.	M	N/A	
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	M	N/A	
a. Author <u>MICHAEL MEERS</u> <small>Printed Name/Signature</small> 		Date <u>08/17/2010</u>		
b. Facility Reviewer (*) <u>N/A</u>		Date <u>N/A</u>		
c. NRC Chief Examiner (#) <u>GERARD W. LASICA</u> 		Date <u>9/14/2010</u>		
d. NRC Supervisor <u>MALCOLM T. WIDMANN</u> 		Date <u>09/14/2010</u>		
Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines				

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 9-14-2010 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 7-22-2011. 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. Archie Lucky	SNOTI / Facility Author	<i>Archie Lucky</i>	9-14-2010	<i>Archie Lucky</i>	7-21-11
2. Mac McDougall	Slim Support	<i>Mac McDougall</i>	11/22/10	<i>Mac McDougall</i>	7/21/11
3. Ron Slight	Slim Support	<i>Ron Slight</i>	12/8/10	<i>Ron Slight</i>	7/21/11
4. SIMON SCHEWINDT	FACILITY REPRESENTATIVE	<i>Simon Schewindt</i>	01/24/11	<i>Simon Schewindt</i>	07/21/11
5. Don MacDougall	Operations SRO	<i>Don MacDougall</i>	2/8/11	<i>Don MacDougall</i>	7/21/11
6. Ken Olive	SNOTI / Development Assn.	<i>Ken Olive</i>	2/9/11	<i>Ken Olive</i>	7/21/11
7. Larry Taylor	OPS Program Leader / Development	<i>Larry Taylor</i>	3/7/11	NOTE(1)	7/25/11
8. TRIPPER	SNOTI	<i>Tripper</i>	4/3/11	<i>Tripper</i>	7-21-11
9. ALAN KENNEDY	FLEET PEER EXAM	<i>Alan Kennedy</i>	4-5-11	NOTE(1)	7/25/11
10. MICHAEL NENEK	FLEET PEER EXAM WRITER	<i>Michael Nenek</i>	4/5/11	NOTE(1)	7/25/11
11. Rick Moore	Fleet Peer EXAM WRITER	<i>Rick Moore</i>	4/5/11	NOTE(1)	7/25/11
12. Kristen Bell (Gill)	SNOTI	<i>Kristen Bell</i>	4/9/11	<i>Kristen Bell</i>	7-21-11
13. Bruce Horne	RO	<i>Bruce Horne</i>	4/17/11	<i>Bruce Horne</i>	7/21/11
14. JOSH LANGNESS	OPS / SRO	<i>Josh Langness</i>	4-17-11	<i>Josh Langness</i>	7-21-11
15. Mark Christopherson	CRS	<i>Mark Christopherson</i>	4-17-11	NOTE(1)	7/26/11

NOTES:

NOTE(1) Per Telecom @ 7/25/11

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 9-14-2010 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 7-22-2011. 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. FRANK D JACKSON	CO/ Rotational Inst.	<i>[Signature]</i>	4/17/11	<i>[Signature]</i>	7/21/11	
2. DAN BURNETT	CO/ F-Shift	<i>[Signature]</i>	5/2/11	<i>[Signature]</i>	7/25/11	
3. Rick Vandenberg	SRO / D-Shift	<i>[Signature]</i>	5-2-11	<i>[Signature]</i>	7/21/11	
4. Robert Stephenson	SRO / D-Shift	<i>[Signature]</i>	5-2-11	<i>[Signature]</i>	7/21/11	
5. Hank Stroup	SRO/Off Shift	<i>[Signature]</i>	5-19-11	<i>[Signature]</i>	7/21/11	
6. Lee Lintal	Sim. Eng / Sim. Support	<i>[Signature]</i>	5/21/11	NOTE 1	7/21/11	
7. DIMP SUDHAKARAN	SIM ENG / SIM SUPPORT	<i>[Signature]</i>	5/21/11	NOTE 1	7/25/11	
8. Eddie RAN	LEAD SIM INSTRUCTOR	<i>[Signature]</i>	5/21/10	NOTE 1	7/25/11	
9. William Guterz	MDO	<i>[Signature]</i>	5/25/10	<i>[Signature]</i>	7/21/11	
10. Matt Fulks	SNOTI	<i>[Signature]</i>	6/14/11	<i>[Signature]</i>	7/25/11	
11. Tom Craig	SNOTI	<i>[Signature]</i>	7/8/11	<i>[Signature]</i>	7/21/11	
12. Mike Spellman	CBS / TAN	<i>[Signature]</i>	7/8/11	<i>[Signature]</i>	7/21/11	
13. Vince Parente	SRO	<i>[Signature]</i>	7/21/11	<i>[Signature]</i>	7/21/11	
14. Artie Sylvester	Supv-DIT / Oversight	<i>[Signature]</i>	7-12-11	NOTE 1	7/25/11	
15. Thonda Foxy	Technical Asst	<i>[Signature]</i>	7/13/11	<i>[Signature]</i>	7/21/11	

NOTES:

NOTE (1) Per Telecom *[Signature]* 7/21/11  
 (2) *[Signature]* 7/25/11

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 9-14-2010 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 7-22-11. 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>Sally Sert</u>	<u>Supt Ops Training</u>	<u>[Signature]</u>	<u>7/13/11</u>	<u>[Signature]</u>	<u>7/21/11</u>	
2.	<u>DUANNE McLAUGHLIN</u>	<u>CONTROL OPERATOR 1005</u>	<u>[Signature]</u>	<u>7-19-11</u>	<u>[Signature]</u>	<u>7-21-11</u>	
3.							
4.							
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13.							
14.							
15.							

NOTES:

1. Pre-Examination

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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 7-22-2011. 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. Archie Lucky	SNOTE/Facility Auditor	<i>Archie Lucky</i>	9-14-2010	<i>Archie Lucky</i>	7-21-11	
2. Mac McDougall	Sim Support	<i>Mac McDougall</i>	11/22/10	<i>Mac McDougall</i>	7/21/11	
3. Ron Selig	Sim Support	<i>Ron Selig</i>	12/8/10	<i>Ron Selig</i>	7/21/11	
4. SIMON SCHWINDT	FACILITY REPRESENTATIVE	<i>Simon Schwindt</i>	01/04/11	<i>Simon Schwindt</i>	07/21/11	
5. Don MacDougall	Operations SRO	<i>Don MacDougall</i>	2/8/11	<i>Don MacDougall</i>	7/21/11	
6. Ken Olive	SNOTE/Development Assn	<i>Ken Olive</i>	3/9/11	<i>Ken Olive</i>	7/21/11	
7. Larry Taylor	OPS Program Leader/Development	<i>Larry Taylor</i>	3/7/11	NOTE(1)	7/25/11	
8. T. J. FARRER	SNOTE	<i>T. J. Farrer</i>	4/3/11	<i>T. J. Farrer</i>	7-21-11	
9. ALAN KENNEDY	FLEET PEER EXAM	<i>Alan Kennedy</i>	4-5-11	NOTE(1)	7/25/11	
10. MICHAEL NEMEL	FLEET PEER EXAM WRITER	<i>Michael Nemel</i>	4/5/11	NOTE(1)	7/25/11	
11. Rick Noebel	FLEET PEER EXAM WRITER	<i>Rick Noebel</i>	4/5/11	NOTE(1)	7/25/11	
12. Kristinella Gill	SNOTE	<i>Kristinella Gill</i>	4/9/11	<i>Kristinella Gill</i>	7-21-11	
13. Bruce Horne	RO	<i>Bruce Horne</i>	4/11/11	<i>Bruce Horne</i>	7/21/11	
14. John Langaness	OPS/SRO	<i>John Langaness</i>	4-7-11	<i>John Langaness</i>	7-21-11	
15. Mark Christopherson	CRS	<i>Mark Christopherson</i>	4-17-11	NOTE(1)	7/26/11	

NOTES:

NOTE(1) Per Telecom @ 7/25/11

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 9-14-2010 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 7-26-2011. 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. Frank D Jackson	CO/ Rotational Inst.	[Signature]	4/17/11	[Signature]	7/26/11	
2. Jan Burnett	CO/ E-Shift	[Signature]	5/2/11	[Signature]	7/25/11	
3. Rick Vanderberg	SRO / D-Shift	[Signature]	5-2-11	[Signature]	7/21/11	
4. Robert Stephenson	SRO / D-Shift	[Signature]	5-2-11	[Signature]	7/23/11	
5. Hank Struck	SRO / Off Shift	[Signature]	5-19-11	[Signature]	7/21/11	
6. See listed	Sim. Eng / Sim. Support	[Signature]	5/21/11	NOTE 1	7/21/11	
7. Dilip Senthilnathan	Sim Eng / Sim Support	[Signature]	5/21/11	NOTE 1	7/25/11	
8. Eddie Rau	LEAD Sim INSTRUCTOR	[Signature]	5/21/10	NOTE 1	7/25/11	
9. William Guter	MSO	[Signature]	5/25/10	[Signature]	7/21/11	
10. Matt Fulks	SNOTI	[Signature]	6/11/11	[Signature]	7/25/11	
11. Tom Craig	SNOTI	[Signature]	7/8/11	[Signature]	7/21/11	
12. Mike Spellman	CAS TRN	[Signature]	7/8/11	[Signature]	7/21/11	
13. Vince Parente	SRO	[Signature]	7/12/11	[Signature]	7/21/11	
14. Artie Sylvester	Supv-DIT / Oversight	[Signature]	7-12-11	NOTE 1	7/25/11	
15. Thonda Foxy	Technical Asst	[Signature]	7/13/11	[Signature]	7/21/11	

NOTES:

NOTE (1) Pac Telecom a/c 7/21/11  
 (2) 7/25/11

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 9-14-2010 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 7-22-11. 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>Sally Satt</u>	<u>Supt Ops Training</u>	<u>[Signature]</u>	<u>7/13/11</u>	<u>[Signature]</u>	<u>7/21/11</u>	
2.	<u>DUANE McLAUGHLIN</u>	<u>Control Room OPERATOR ICRS</u>	<u>[Signature]</u>	<u>7-14-11</u>	<u>[Signature]</u>	<u>7-21-11</u>	
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NOTES:

FINAL

ES-301

**Administrative Topics Outline**

**Form ES-301-1**

Facility: <u>Harris Nuclear Plant</u>		Date of Examination: <u>July 11, 2011</u>
Examination Level: RO <input checked="" type="checkbox"/> SRO <input type="checkbox"/>		Operating Test Number: <u>05000400/2011301</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, R	Determine Rod Height Misalignment Using Thermocouples (JPM CR-139) Common  <i>K/A G2.1.7</i>  <b>2011 NRC RO A1-1</b>
Conduct of Operations	M, R	Determine the Target Rod Height and the Boron Required for a Rapid Power Reduction IAW AOP-038  <i>K/A G2.1.25</i>  <b>2011 NRC RO A1-2</b>
Equipment Control	N, R	Review the Completed OST for Auxiliary Feedwater Pump 1B-SB (JPM ADM-103)  <i>K/A G2.2.12</i>  <b>2011 NRC RO A2</b>
Radiation Control	M, R	Using Survey Maps determine stay times while performing a clearance activity. (JPM ADM-100) Common  <i>K/A G2.3.4</i>  <b>2011 NRC RO A3</b>
Emergency Procedures/Plan	N/A	NOT SELECTED FOR RO  <b>2011 NRC RO A4</b>
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	<b>(4)</b>
	(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)	<b>(0)</b>
	(N)ew or (M)odified from bank (≥ 1)	<b>(3)</b>
	(P)revious 2 exams (≤ 1; randomly selected)	<b>(1)</b>

## 2011 NRC RO Admin JPM Summary

### **2011 NRC RO A1-1** - Determine Rod Misalignment Using Thermocouples

**Previous** - 2009A NRC Exam JPM \*randomly selected from bank

*K/A G2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.  
(CFR: 41.5 / 43.5 / 45.12 / 45.13) RO 4.4 SRO 4.7*

The plant is at 90% power with a load decrease in progress when a control rod is observed indicating 12 steps higher than group demand. The candidate must perform Attachment 2 of AOP-001, Malfunction of Rod Control and Indication System, to calculate the temperature difference between the affected thermocouple and its symmetric thermocouples.

**NOTE:** Two thermocouple temperatures were changed with the resulting calculation now indicating a difference of greater than 10°F, indicating that the rod is misaligned. The 2009a JPM thermocouple temperatures resulted in a calculation of <10°F. During the 2009a exam the <10°F difference resulted was a rod position indication problem. For the 2011 exam the temperature difference of >10°F will have a concluding result of a rod misalignment.

### **2011 NRC RO A1-2** - Determine the Target Rod Height and the Boron Concentration Change Required for a Rapid Power Reduction IAW AOP-038 **MODIFIED**

*K/A G2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc.  
(CFR: 41.10 / 43.5 / 45.12) RO 3.9 SRO 4.2*

With plant conditions requiring a rapid power reduction to 65% power the candidate will be required to determine the target rod height, the time in core life and the amount of boric acid required for the power reduction.

This JPM was modified by changing the initial power level conditions and final power level.

### **2011 NRC RO A2** - Review the Completed OST for Auxiliary Feedwater Pump 1B-SB - **NEW** (JPM ADM-103)

*K/A G2.2.12 Knowledge of surveillance procedures.  
(CFR: 41.10 / 45.13) RO 3.7 SRO 4.1*

The candidate will be supplied a completed copy of OST-1076, Auxiliary Feedwater Pump 1B-SB Operability Test Quarterly Interval Modes 1-4 and be assigned the task of performing a peer check of the procedure prior to approval from the CRS.

## 2011 NRC RO Admin JPM Summary (continued)

**2011 NRC RO A3 (Common)** - Using Survey Maps, Simplified Drawings, Plant Maps and valve lists, determine stay times while performing a clearance activity. **MODIFIED**

*K/A G2.3.4 - Knowledge of radiation exposure limits under normal or emergency conditions.  
(CFR: 41.12 / 43.4 / 45.10) RO 3.2 SRO 3.7*

The candidate will be supplied a survey map of a location in the RAB and a clearance mission to complete in this radioactive area. The location also contains one or more hot spots. They must determine the individual stay times for two Auxiliary Operators (AO) without exceeding the annual administrative dose limits. They will be provided Survey Maps, Simplified plant drawings to locate valves, Plant Maps of the area and a plant valve list to determine the location of the valves they will be hanging a clearance on. The given information will supply the accumulated annual whole body doses for the two AOs, one of which recently worked for another utility. They must perform their calculations based on Progress Energy Administrative Dose Limits.

This JPM was modified by changing the location of the clearance and values of radiation areas.

**2011 NRC RO A4** – Not selected

FINAL

ES-301

**Administrative Topics Outline**

**Form ES-301-1**

Facility: Harris Nuclear Plant

Date of Examination: July 11, 2011

Examination Level: RO

SRO

Operating Test Number: 05000400/2011301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, R	Determine Rod Height Misalignment Using Thermocouples (JPM CR-139) Common  <i>K/A G2.1.7</i>  <b>2011 NRC SRO A1-1</b>
Conduct of Operations	M, R	Determine Subcooling with the Subcooling Margin Monitor Unavailable (JPM ADM-031)  <i>K/A G 2.1.23</i>  <b>2011 NRC SRO A1-2</b>
Equipment Control	D, R	Review (for approval) a completed surveillance procedure for PORV block valves. (JPM ADM-035 SRO)  <i>K/A G 2.2.12</i>  <b>2011 NRC SRO A2</b>
Radiation Control	M, R	Using Survey Maps, Simplified Drawings, Plant Maps and Valve Lists, determine stay times while performing a clearance activity. (JPM ADM-100) Common  <i>K/A G2.3.4</i>  <b>2011 NRC SRO A3</b>
Emergency Procedures/Plan	N, R	Given a Set of Plant Conditions Classify An Event and manually complete an Emergency Notification Form.  <i>K/A G2.4.41</i>  <b>2011 NRC SRO A4</b>

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	<b>(5)</b>
	(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)	<b>(1)</b>
	(N)ew or (M)odified from bank (≥ 1)	<b>(3)</b>
	(P)revious 2 exams (≤ 1; randomly selected)	<b>(1)</b>

## 2011 NRC SRO Admin JPM Summary

**2011 NRC SRO A1-1** - Determine Rod Misalignment Using Thermocouples  
Previous - 2009A NRC Exam JPM \*randomly selected from bank

*K/A G2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.  
(CFR: 41.5 / 43.5 / 45.12 / 45.13) RO 4.4 SRO 4.7*

The plant is at 90% power with a load decrease in progress when a control rod is observed indicating 12 steps higher than group demand. The candidate must perform Attachment 2 of AOP-001, Malfunction of Rod Control and Indication System, to calculate the temperature difference between the affected thermocouple and its symmetric thermocouples.

**NOTE:** Two thermocouple temperatures were changed with the resulting calculation now indicating a difference of greater than 10°F, indicating that the rod is misaligned. The 2009a JPM thermocouple temperatures resulted in a calculation of <10°F. With <10°F difference the result was a rod position indication problem. With the temperature difference of >10°F the result is a rod misalignment. In the current JPM the SRO will need to determine Tech Spec requirements for a rod misalignment.

**2011 NRC SRO A1-2** - Determine Subcooling with the Subcooling Margin Monitor Unavailable (JPM ADM-031) Bank - **MODIFIED**

*K/A G2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.  
(CFR: 41.10 / 43.5 / 45.2 / 45.6) RO 4.3 SRO 4.4*

The applicant will be informed that a Small Break LOCA has occurred with SI actuated. They will be provided with copies of the EOP User's Guide and multiple plant parameters. They will be required to determine the RCS Subcooling margin IAW the EOP User's Guide directions.

This JPM was modified by changing the initial conditions to where the Containment pressure will be > 3 psig requiring the candidate to use adverse Containment values. In addition to this change the ERFIS computer will not be available. These two changes will require using different indicators and the results will be completely different values.

**2011 NRC SRO A2** - Review (for approval) a completed surveillance procedure for PORV block valves. (JPM ADM-035 SRO) Direct

*K/A G2.2.12 - Knowledge of surveillance procedures.  
(CFR: 41.10 / 45.13) RO 3.7 SRO 4.1*

The applicant will be provided with a handout of a completed copy of a PORV Block Valve full stroke quarterly surveillance. The procedure contains three (3) errors that the candidate must identify.

## 2011 NRC SRO Admin JPM Summary (continued)

**2011 NRC SRO A3 (Common)** - Using Survey Maps, Simplified Drawings, Plant Maps and valve lists, determine stay times while performing a clearance activity.  
(2009B NRC Admin JPM) - **MODIFIED**

*K/A G2.3.4 - Knowledge of radiation exposure limits under normal or emergency conditions.  
(CFR: 41.12 / 43.4 / 45.10) RO 3.2 SRO 3.7*

The applicant will be supplied a survey map of a location in the RAB and a clearance mission to complete in this radioactive area. The location also contains one or more hot spots. They must determine the individual stay times for two Auxiliary Operators (AO) without exceeding the annual administrative dose limits. They will be provided Survey Maps, Simplified plant drawings to locate valves, Plant Maps of the area and a plant valve list to determine the location of the valves they will be hanging a clearance on. The given information will supply the accumulated annual whole body doses for the two AOs, one of which recently worked for another utility. They must perform their calculations based on Progress Energy Administrative Dose Limits.

This JPM was modified by changing the location of the clearance and radiation area intensities.

**2011 NRC SRO A4** - Classify an Event (NEW)

*K/A G2.4.41 Knowledge of the emergency action level thresholds and classifications  
(CFR: 41.10 / 43.5 / 45.11) RO 2.9 SRO 4.6*

Given a set of initial conditions and the EAL Flow Path, the candidate must classify the appropriate Emergency Action Level for the event in progress. After completing the EAL classification the candidate will then manually complete an Emergency Notification Form (ENF).

Facility: <u>Harris Nuclear Plant</u>		Date of Examination: <u>07/11/2011</u>
Exam Level: RO	SRO-I	<b>SRO-U (bold)</b>
		Operating Test No.: <u>05000400/2011301</u>
Control Room Systems® (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF - bold)		
System / JPM Title	Type Code*	Safety Function
a. <b>Malfunction of RMU Control (AOP-003) (JPM-CR-048)</b>  <i>K/A 004 A4.13</i>	<b>D, L, S</b>	<b>1</b>
b. <b>Loss of Seal Injection To The RCPs - take corrective actions IAW AOP-018 (AOP-018) (NEW JPM-CR-245)</b>  <i>K/A APE 015/017 AA2.10</i>	<b>A, N, EN, S</b>	<b>2</b>
c. SGTR Without Pressurizer Pressure Control (EOP-EPP-022) (JPM-CR-150)  <i>K/A G2.1.20</i>	A, M, S	3
d. Loss of RCS Inventory While on RHR MODE 5 (AOP-020) (JPM-CR-60)  <i>K/A 005 A4.01</i>	A, D, EN, S	4P
e. Using ESW System As A Backup Source Of Water To AFW (PATH-1 and OP-137) (JPM-CR-107)  <i>K/A 054 AA1.01</i>	P, C or S	4S
f. Manually Align Containment Spray (PATH-1) (JPM-CR-106) <b>RO ONLY</b>  <i>K/A 026 A4.01</i>	A, D, EN, S	5
g. LOSP While Paralleling a Emergency Diesel Generator from the Main Control Room for Testing (OP-155) (JPM-CR-203)  <i>K/A 056 A2.14</i>	A, D, EN, S	6
h. <b>Respond to a Rupture in the Instrument Air Header at 50% power (AOP-017) (JPM-CR-234)</b>  <i>K/A APE 065 AA2.06</i>	<b>A, D, S</b>	<b>8</b>

In-Plant Systems <sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U - BOLD)		
i. <b>Reset the Turbine Driven AFW Pump Mechanical Overspeed (pump tripped on start) (OP-137) (JPM-IP-001)</b> <i>K/A 061 K4.07</i>	<b>D, E, R</b>	<b>4S</b>
j. <b>Align the Train 'A' Battery Charger to the Alternate Power Supply</b> <i>K/A APE 058 AA1.01</i>	<b>E, N</b>	<b>6</b>
k. <b>Perform Local Actions For Placing a Failed Pressurizer pressure Channel In TEST (OWP-RP-02)</b> <i>K/A APE 027 AA2.16</i>	<b>N</b>	<b>3</b>
<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	(6, 5, 2)
(C)ontrol room		
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4	(7, 6, 3)
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	(2, 2, 2)
(EN)gineered safety feature	- / - / ≥ 1	(4, 3, 1)
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1	(1, 1, 1)
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1	(4, 4, 2)
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2	(1, 1, 0)
(R)CA	≥ 1 / ≥ 1 / ≥ 1	(1, 1, 1)
(S)imulator		

## 2011 NRC Control Room/In-Plant JPM Summary

### **JPM a – Malfunction of Rx Makeup Control (JPM CR-237) –SRO Upgrade**

*K/A 004 A4.13 – Ability to manually operate and/or monitor in the control room: VCT level control and pressure control  
(CFR: 41.7 / 45.5 to 45.8) RO 3.3 / SRO 2.9*

This bank JPM has been revised by changing the initial power level and revising the required boration flow rates based on the current core cycle boron concentrations. I am still considering this a 'direct' from the bank JPM.

With the unit operating at 4% power steady state conditions, a VCT makeup was required when level reached the low level auto makeup setpoint of 20%. The makeup system malfunctioned and a makeup did not occur. When the operators attempted a manual makeup the Reactor Makeup Mode Selector switch stayed in the STOP position. AOP-003, Malfunction of Reactor Makeup Control was entered and the crew has performed steps 1-14 of section 3.2. The applicant will be directed to continue from this point. This will require the applicant to select from the procedure table what attachment to perform from the given conditions. After making the selection (Attachment 2) the applicant will have to calculate the amount of flow for a local manual makeup to the VCT based on current RCS boron concentration from the status board. They will then need to perform a lineup on the MCB and start a Boric Acid pump. Next they will have to coordinate the actions of a local operator to throttle open boration and dilution valves to the correct positions based on MCR indications until VCT level has reached 40% (normal full auto makeup setpoint).

### **JPM b – Loss of Seal Injection To The RCPs (ASI pump running, align and start standby CSIP) (NEW JPM-CR-245) –SRO Upgrade**

*K/A APE 015/017 AA2.10 Ability to determine and interpret the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): When to secure RCPs on loss of cooling or seal injection  
(CFR 43.5 / 45.13) RO 3.7 / SRO 3.7*

The candidate will assume the Operator at the Controls (OAC) responsibilities with the plant operating at 100% power. After taking the watch the 'A' CSIP will trip requiring the candidate to identify that AOP-018, Reactor Coolant Pump Abnormal Conditions, entry conditions are met. The candidate will then perform the immediate action of "Check any CSIP running" answer NO and perform the RNO action of isolating letdown. After completing the immediate action the candidate will obtain a copy of AOP-018 and begin the actions of the AOP. Without any CSIP running a loss of seal flow to the RCPs is occurring. A new CVCS positive displacement pump named the Alternate Seal Injection pump (ASI pump) will auto start 2 minute and 45 seconds after 2 out of 3 flow switches detect RCP seal flows < 4.0 gpm. The candidate will start the "B" CSIP but this pump will immediately trip. Since there are no CSIPs running AOP-018 directs to the operator to trip the Reactor if only the ASI pump is operating. Since the ASI pump suction tank boron concentration is required to be 3800 – 4200 ppm any time the ASI pump is in operation a large amount of negative reactivity will be added to the RCS. The candidate is expected to carry out the RNO actions of the procedure and perform a manual Reactor trip. They will then perform the immediate actions of PATH-1. When the immediate actions are completed they will be directed to continue with AOP-018 actions to isolate the Seal Return flow path. The JPM is complete when RCP seal water return valves are isolated.

## 2011 NRC Control Room/In-Plant JPM Summary

### **JPM c** –SGTR Without Pressurizer Pressure Control (Modified JPM-CR-150)

*K/A G2.1.20 - Ability to interpret and execute procedure steps.  
(CFR: 41.10 / 43.5 / 45.12) RO 4.6 / SRO 4.6*

The candidate will be informed that EOP-EPP-022 has just been entered after a transition from PATH-2. The plant conditions are: a SGTR occurred on the 'A' SG, offsite power has been lost, and neither the PZR PORV's or PZR Auxiliary spray is functional. The SG tube rupture will be increasing 'A' SG level (current start level will be < 78%) as the candidate proceeds through EPP-022. Continuing through the procedure the candidate will get to step 15 to open normal miniflow isolation valves. The common valve (1CS-214) will not open requiring the candidate to use the RNO action of going to Step 9. Step 9 will establish minimum charging flow and isolate BIT flow. The JPM is complete after the candidate has shut the BIT outlet valves 1SI-3 and 1SI-4 and verified Cold Leg and Hot Leg Injection valves are shut.

### **JPM d** – Loss of RCS Inventory While on RHR MODE 5 (JPM-CR-60)

*K/A 005 A4.01 Ability to manually operate and/or monitor in the control room: Controls and indication for RHR pumps  
(CFR: 41.7 / 45.5 to 45.8) RO 3.6 / SRO 3.4*

The candidate will be assigned the role of OAC and be directed to maintain current plant conditions of: the plant in Mode 5 with Containment integrity established, on RHR and a bubble in the PZR, RCS temperature stable at ~ 140°F and all RCP's operating. Soon after assuming the watch a RCS leak will develop requiring the candidate to enter AOP-020, Loss of RCS Inventory or RHR While Shutdown. The candidate will obtain a copy of AOP-020 and perform steps to attempt leak isolation. When unable to isolate the leak the procedure directions are to isolate RHR and secure both RHR pumps (this will isolate the leak). The JPM is complete after RHR is isolated and both 'A' and 'B' RHR pump is secured.

### **JPM e** – Using ESW System As A Backup Source of Water To AFW (JPM-CR-107)

**PREVIOUS** – 2009a NRC Exam (NOTE: Cues have been added to the JPM to allow simulation of performance of this JPM in the Main Control Room)

*K/A 054 AA1.01 – Ability to operate and / or monitor the following as they apply to the Loss of Main Feedwater AFW controls, including the use of alternate AFW sources  
(CFR 41.7 / 45.5 / 45.6) RO 4.5 / SRO 4.4*

Following a LOCA the operator is informed that a leak developed in the Condensate Storage Tank (CST). The CST level has decreased to < 10%. The candidate is directed to supply ESW from the A Header to both the A AFW Pump and the Turbine Driven AFW pumps. This will require shutting down the B MDAFW Pump and 'A' Train of Containment Fan Coolers in addition to the ESW valve alignment.

## 2011 NRC Control Room/In-Plant JPM Summary

### **JPM f** – Manually Align Containment Spray (JPM-CR-106) **RO ONLY**

*K/A 026 A4.01 Ability to manually operate and/or monitor in the control room: CSS controls  
(CFR: 41.7 / 45.5 to 45.8) RO 4.5 SRO 4.3*

The candidate will be assigned the OAC position with a large break LOCA in progress. Containment pressure has exceeded 10 psig and automatic actuation of Containment Spray has not occurred (> 10 psig on 2/4 Containment pressure channels). The candidate will be instructed that an RCS break has occurred inside Containment and a Reactor Trip and Safety Injection have been initiated. PATH-1 is being implemented and step 10 – Check Containment Pressure has remained < 10 psig has just been reached. They will then proceed in PATH-1 and discover that the Containment Spray System should have actuated but has not. They will attempt to manually actuate Containment Spray by initiating the Spray logic but this will fail. They will then have to manually start each Containment Spray pump and manually align each flow pumps flow path. They will then be required to secure all running Reactor Coolant Pumps. This JPM is complete when all RCPs are secured.

### **JPM g** – LOSP While Paralleling a Emergency Diesel Generator from the Main Control Room for Testing (JPM-CR-203) Alternate Path and Engineered Safety Feature

*K/A 056 AA2.14 Ability to determine and interpret the following as they apply to the Loss of Offsite Power: Operational status of ED/Gs (A and B)  
(CFR: 43.5 / 45.13) RO 4.4 SRO 4.6*

The candidate will be informed that they are the 3<sup>rd</sup> Board Operator (extra operator) and will be directed by the CRS to parallel the 1B-SB Emergency Diesel Generator (EDG) to the grid from the Main Control Board IAW section 5.3 of OP-155. The candidate will exercise the EDG voltage and governor controls then parallel the EDG. After parallel operations have been achieved a Loss of Off Site Power will occur. The loss of power will require the candidate to manually open the EDG output breaker IAW OP-155 precaution and limitation #24.

### **JPM h** – Respond to a Rupture in the Instrument Air Header at 50% power (JPM-CR-234) Alternate Path –**SRO Upgrade**

*K/A APE 065 AA2.06 Ability to determine and interpret the following as they apply to the Loss of Instrument Air: When to trip reactor if instrument air pressure is decreasing  
(CFR: 43.5 / 45.13) RO 3.6 SRO 4.2*

The candidate will be assigned the OAC position and be directed to maintain current plant conditions of steady state ~50% power. The plant is on hold for chemistry concerns. Soon after taking the watch an Instrument Air leak will develop. The candidate will be expected to respond to the low pressure annunciators and enter AOP-017. Air pressure will decrease requiring a manual Reactor Trip. The candidate will be expected to perform the immediate actions of PATH-1 then be directed to continue with AOP-017. They will have to contact Auxiliary Operators to vent and depressurize the remaining air from the system. Continuing with the procedure requires the candidate to locate and place multiple MCB controls to manual and zero demand.

## 2011 NRC Control Room/In-Plant JPM Summary

### **JPM i – Reset the Turbine Driven AFW Pump Mechanical Overspeed - pump tripped on start (JPM-IP-001) –SRO Upgrade**

*K/A 061 K4.07 Knowledge of AFW design feature(s) and/or interlock(s) which provide for the following: Turbine trip, including overspeed*

*(CFR: 41.7) RO 3.1 SRO 3.3*

NOTE: This JPM is inside the RCA

The candidate will be informed that the plant has tripped from 100% power. The Turbine Driven AFW pump started and has tripped on overspeed. The pump is needed for plant cooldown efforts. The cause of the overspeed trip has been identified and corrected by Maintenance. The CRS has directed the candidate to reset the Turbine Driven AFW mechanical overspeed trip linkage. 1MS-70 and 1MS-72 (steam supply valves to the TDAFW pump) are indicating shut from the MCB. The CRS also notifies the candidate that the Trip and Throttle Valve will be reopened from the Control Room.

### **JPM j – Align a Train ‘A’ battery Charger to the alternate Power Supply – NEW SRO Upgrade**

*K/A APE 058 AA1.01 Ability to operate and / or monitor the following as they apply to the Loss of DC Power: Cross-tie of the affected dc bus with the alternate supply*

*(CFR 41.7 / 45.5 / 45.6) RO 3.4 SRO 3.5*

The candidate will be informed that the plant is in Mode 3 following a Reactor Trip from a Loss of Off-Site power and failure of both Emergency Diesel Generators to energize their respective Emergency Buses. The Crew will be implementing EPP-001, Loss of AC Power to 1A-SA and 1B-SB Buses, they have verified that the Dedicated Shutdown Diesel Generator has started, loaded and is now supplying 1D23 bus. The CRS will be directing the candidate to align the 1A-SA battery Charger to the alternate Power Supply IAW EOP-001 step 22 using OP-156.01, AC Electrical Distribution, Section 8.15 with initial conditions met.

NOTE: This is a new component was installed during the RFO-17 refueling outage.

### **JPM k – Perform Local Actions For Placing a Failed Pressurizer pressure Channel In TEST**

*K/A APE 027 AA2.16 Ability to determine and interpret the following as they apply to the Pressurizer Pressure Control Malfunctions: Actions to be taken if PZR pressure instrument fails low*

*(CFR: 43.5 / 45.13) RO 3.6 SRO 3.9*

The candidate will be informed that the plant was operating at 100% when Pressurizer Pressure Channel 455 failed low. They will be directed to perform the local actions per OWP-RP-02 for troubleshooting and tripping bistable for PT-455 to meet Technical Specifications. They will be required to perform actions at PIC 17 and PIC 1 to place the failed channel in TEST. They will then have to report to the Main Control Room and select an operable Pressurize Pressure recorder channel and verify the correct bistable status lights are lit for placing the channel in test.

## 2011 NRC Control Room/In-Plant JPM Summary

### Rev. 1 Summary

#### Simulator JPM A - NRC review resulted in request for replacement

- Simulator JPM A has been replaced. Original JPM A was Continuous Rod Withdrawal of a Control Bank – Pull to POAH / Take Corrective Actions IAW AOP-001. Review statement of JPM said: Does not appear to be very discriminating/Some actions are the same as the actions that will be required in JPM 'b'. Suggest replacing JPM A.

#### Simulator JPM C – NRC review stated not alternate path

- Simulator JPM C has been modified. During the restoration lineup of the CSIP the common miniflow valve 1CS-214 will not open. Since the valve does not open this will require the candidate to use the RNO action to manipulate CVCS valves and controllers.

#### Simulator JPM F - NRC review resulted in request for replacement

- Simulator JPM F has been replaced. Original JPM F was Reduce Containment Spray Flow. Review statement of JPM said: While performing this task, the applicant will be using EPP-012. The 401-2 outline states that tasks using this procedure are related to safety function 4(P). You have this listed as safety function 5 (this would be the second 4P that you have in the control room/simulator portion of the outline. Only 1 is allowed. Not very discriminating as written, will observe on prep week. (RO ONLY).

A discussion with the Lead NRC Examiner about the association of the K/A for the original JPM has taken place. The NRC Examiner was correct by stating the K/A is not appropriate for this JPM and therefore will be replaced JPM titled Manually Align Containment Spray which has been verified as a Safety Function 5 JPM.

#### Simulator JPM G - NRC review during Prep Week resulted in request for replacement

- Simulator JPM G has been replaced. Original JPM G was to start a Emergency Diesel Generator. Following the start the local operator was to report that oil was coming out of the crank case vent. This report indicates that a major malfunction has occurred on the Diesel and IAW the starting procedure precautions and limitations the operator should immediately secure the Diesel. The NRC Examiner determined that the feedback should be from indications not from a local report. The Main Control room indications do not support this level of detail.

A new JPM has been selected still dealing with operating the Emergency Diesel Generator and securing the Diesel based on the procedure precaution and limitations.

#### Simulator JPM K - NRC review resulted in request for replacement

- In-Plant JPM K has been replaced. Original JPM K was locally tripping the Reactor. The NRC lead examiner determined the JPM lacked discriminatory value and therefore has been replaced with a JPM dealing with local actions required for a Pressurizer Pressure transmitter failure.

Facility:		Date of Examination:		Operating Test Number:		
1. General Criteria				Initials		
				a	b*	c#
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).			X	M	J
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.			X	M	J
c.	The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)			X	M	J
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.			X	M	J
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.			X	M	J
2. Walk-Through Criteria				--	--	--
a.	Each JPM includes the following, as applicable: <ul style="list-style-type: none"> <li>• initial conditions</li> <li>• initiating cues</li> <li>• references and tools, including associated procedures</li> <li>• reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time-critical by the facility licensee</li> <li>• operationally important specific performance criteria that include:                         <ul style="list-style-type: none"> <li>– detailed expected actions with exact criteria and nomenclature</li> <li>– system response and other examiner cues</li> <li>– statements describing important observations to be made by the applicant</li> <li>– criteria for successful completion of the task</li> <li>– identification of critical steps and their associated performance standards</li> <li>– restrictions on the sequence of steps, if applicable</li> </ul> </li> </ul>			X	M	J
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.			X	M	J
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.				X	M	J
		Printed Name / Signature		Date		
a.	Author	<u>Archie Lucky / Archie Lucky</u>		<u>5-23-11</u>		
b.	Facility Reviewer(*)	<u>SIMON SCHWINDT / [Signature]</u>		<u>05/31/2011</u>		
c.	NRC Chief Examiner (#)	<u>GERARD W. LASKA / [Signature]</u>		<u>07/05/2011</u>		
d.	NRC Supervisor	<u>MARK FRANZ / [Signature]</u>		<u>2/6/11</u>		
NOTE: * The facility signature is not applicable for NRC-developed tests. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.						

Facility: Harris Nuclear Plant		Date of Exam: 07-11-2011		Scenario Numbers: 1 / 2 / 3 / 4 (Spare)	
Operating Test No.: 05000400/2011301					
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.	X	11	[Signature]	
2.	The scenarios consist mostly of related events.	X	11	[Signature]	
3.	Each event description consists of <ul style="list-style-type: none"> <li>the point in the scenario when it is to be initiated</li> <li>the malfunction(s) that are entered to initiate the event</li> <li>the symptoms/cues that will be visible to the crew</li> <li>the expected operator actions (by shift position)</li> <li>the event termination point (if applicable)</li> </ul>	X	11	[Signature]	
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.	X	11	[Signature]	
5.	The events are valid with regard to physics and thermodynamics.	X	11	[Signature]	
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	X	11	[Signature]	
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.	X	11	[Signature]	
8.	The simulator modeling is not altered.	X	11	[Signature]	
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.	X	11	[Signature]	
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.	X	11	[Signature]	
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	X	11	[Signature]	
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).	X	11	[Signature]	
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	X	11	[Signature]	
<b>Target Quantitative Attributes (Per Scenario; See Section D.5.d)</b>		<b>Actual Attributes</b>			
1.	Total malfunctions (5-8)	9 / 9 / 8 / 8	X	11	[Signature]
2.	Malfunctions after EOP entry (1-2)	2 / 3 / 2 / 2	X	11	[Signature]
3.	Abnormal events (2-4)	3 / 3 / 3 / 3	X	11	[Signature]
4.	Major transients (1-2)	1 / 1 / 2 / 1	X	11	[Signature]
5.	EOPs entered/requiring substantive actions (1-2)	2 / 1 / 3 / 2	X	11	[Signature]
6.	EOP contingencies requiring substantive actions (0-2)	0 / 1 / 1 / 1	X	11	[Signature]
7.	Critical tasks (2-3)	2 / 2 / 3 / 2	X	11	[Signature]

7/5/2011

SCENARIO'S 2 - 4

ES-301

Transient and Event Checklist

Form ES-301-5

Facility: Shearon Harris Date of Exam: 07-11-11 Operating Test No.: 05000400/2011301

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 (*)			
		1-SPARE			2			3			4				R	I	U	
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N							
		S R O	A T C	B O P														
RO - 1 <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX					1									1	1		
	NOR													1	1	1		
	I/C					3								4	7	4		
	MAJ					1								1	2	2		
	TS														0	0		
RO - 2 <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX					1									1	1		
	NOR									1				1	2	1		
	I/C					3				4				4	11	4		
	MAJ					1				2				1	4	2		
	TS														0	0		
RO - 3 <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX					1									1	1		
	NOR									1					1	1		
	I/C					3				4					7	4		
	MAJ					1				2					3	2		
	TS														0	0		
RO - 4 <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX									1					1	1		
	NOR						1								1	1		
	I/C						5			2					7	4		
	MAJ						1			2					3	2		
	TS														0	0		

Instructions:

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

## SCENARIO'S 2 - 4

**ES-301**

### Transient and Event Checklist

**Form ES-301-5**

Facility: Shearon Harris		Date of Exam: 07-11-11		Operating Test No.: 05000400/2011301													
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 (*)		
		1-SPARE			2			3			4						
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N						
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P		R	I	U
RO - 5 <input checked="" type="checkbox"/>	RX								1					1	1		
	NOR						1							1	1		
SRO-I <input type="checkbox"/>	I/C						5		2					7	4		
SRO-U <input type="checkbox"/>	MAJ						1		2					3	2		
	TS													0	0		
RO - 6 <input checked="" type="checkbox"/>	RX								1					1	1		
	NOR						1							1	1		
SRO-I <input type="checkbox"/>	I/C						5		2					7	4		
SRO-U <input type="checkbox"/>	MAJ						1		2					3	2		
	TS													0	0		
RO - 7 <input checked="" type="checkbox"/>	RX												1	1			
	NOR									1			1	2	1		
SRO-I <input type="checkbox"/>	I/C									4			3	7	4		
SRO-U <input type="checkbox"/>	MAJ									2			1	3	2		
	TS													0	0		

**Instructions:**

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

SCENARIO'S 2 - 4

ES-301

Transient and Event Checklist

Form ES-301-5

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 (*)		
		1-SPARE			2			3			4				R	I	U
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N						
		S R O	A T C	B O P													
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U1 <input checked="" type="checkbox"/>	RX				1			1						2			0
	NOR				1			1						2			1
	I/C				8			6						14			2
	MAJ				1			2						3			1
	TS				2			4						6			2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U2 <input checked="" type="checkbox"/>	RX				1			1						2			0
	NOR				1			1						2			1
	I/C				8			6						14			2
	MAJ				1			2						3			1
	TS				2			4						6			2
RO <input type="checkbox"/> SRO-I 1 <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX				1			1				1		3	1		
	NOR				1			1				1		3	1		
	I/C				8			6				3		17	4		
	MAJ				1			2				1		4	2		
	TS				2			4						6	2		

Instructions:

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

## SCENARIO # 1 "Spare"

**ES-301**

**Transient and Event Checklist**

**Form ES-301-5**

Facility: Shearon Harris		Date of Exam: 07-11-11			Operating Test No.: 05000400/2011301												
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(*)		
		1 -SPARE			2			3			4						
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P		R	I	U
<input type="checkbox"/> RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U	RX	1	1	0													
	NOR	1	0	1													
	I/C	8	3	5													
	MAJ	1	1	1													
	TS	4	-	-													
<input type="checkbox"/> RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U	RX																
	NOR																
	I/C																
	MAJ																
	TS																
<input type="checkbox"/> RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U	RX																
	NOR																
	I/C																
	MAJ																
	TS																
<input type="checkbox"/> RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U	RX																
	NOR																
	I/C																
	MAJ																
	TS																

**Instructions:**

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

## Revision Summary Page

**ES-301**

**Transient and Event Checklist**

**Form ES-301-5**

### **Rev. 1**

#### Scenario #1

Event #6 did not identify a Technical Specification call for the SRO. It was identified during Operator validation which occurred after the submittal of the NRC outlines. Due to this identification each SRO Transient and Event Checklist for SRO Tech Specs has been updated.

An additional Component Failure was identified during Operations Validations – Event #7 'A' CSIP trip and subsequent AOP-018 entry should have been identified but was not. Event #7 was originally listed as just the Major event which included the 'A' CSIP trip and the Small Break LOCA. These are 2 separate events. Each RO in the ATC position and the SRO's will be given credit for one additional Component Failure.

#### Scenario #2

Identification of a change will be captured here for tracking. There is no affect on the Transient and Event Checklist totals because the Component and Instrument failures are counted together.

Event 5 was been miss-identified as an Instrument Failure it should have been classified as a Component Failure. This was discovered during Scenario Based Testing simulator validation. The correct classification is now identified in the scenario and scenario outline.

### **Rev. Final**

During Prep Week the Chief NRC Examiner determined that Scenario #1 would be better suited as the SPARE. All values have been re-calculated based on Scenario #1 as the spare.

Archie Lucky  
6/28/2011

Facility: Harris Nuclear Plant

Date of Examination: 07-11-11

Operating Test No.: 05000400/2011301

Competencies	APPLICANTS											
	RO			RO (BOP)			SRO-U			SRO-I		
	SCENARIO			SCENARIO			SCENARIO			SCENARIO		
	1	2	3	1	2	3	1	2	3	1	2	3
Interpret/Diagnose Events and Conditions	2/4 5/7 8/9	2/4 5/7/8	2/4 6/7/8	1/3 6/8 10	3/6 7/9 10	3/5 7/8/9	2/3 4/5 6/7 8/9 10	0	2/3 4/5 6/7 8/9	2/3 4/5 6/7 8/9/10	3/6 7/9 10	2/3 4/5 6/7 8/9
Comply With and Use Procedures (1)	1/2 4/5 7/8/9	1/2 4/5 7/8	1/2 4/6 7/8	1/3 6/8 10	1/3 6/7 9/10	1/3 5/7 8/9	1/2 3/4 5/6 7/8 9/10	0	1/2 3/4 5/6 7/8/9	1/2/3 4/5/6 7/8/9 10	1/3 6/7 9/10	1/2 3/4 5/6 7/8/9
Operate Control Boards (2)	1/2 4/5 7/8/9	1/2 4/5 7/8	1/2 4/6 7/8	1/3 6/8 10	1/3 6/7 9/10	1/3 5/7 8/9	0	0	0	0	1/3 6/7 9 10	0
Communicate and Interact	1/2 4/5 7/8/9	1/2 4/5 7/8	1/2 4/6 7/8	1/3 6/8 10	1/3 6/7 9/10	1/3 5/7 8/9	1/2 3/4 5/6 7/8 9/10	0	1/2 3/4 5/6 7/8/9	1/2/3 4/5/6 7/8/9 10	1/3 6/7 9/10	1/2 3/4 5/6 7/8/9
Demonstrate Supervisory Ability (3)	0	0	0	0	0	0	1/2 3/4 5/6 7/8 9/10	0	1/2 3/4 5/6 7/8/9	1/2/3 4/5/6 7/8/9 10	0	1/2 3/4 5/6 7/8/9
Comply With and Use Tech. Specs. (3)	0	0	0	0	0	0	1/3 4/6	0	3/4 5/6	1/3 4/6	0	3/4 5/6

Notes:

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

Instructions:

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

Facility: Harris Nuclear Plant		Date of Examination: 07-11-11			
Operating Test No.: 05000400/2011301					
Competencies	APPLICANTS				
	RO	RO (BOP)	SRO-U	SRO-I	
	SCENARIO	SCENARIO	SCENARIO	SCENARIO	
	4	4	4	4	
	Interpret/Diagnose Events and Conditions	5/7 8/11	2/3/4 8/9/10	2/3/4 5/6/7 8/9/10	2/3/4 5/6/7 8/9/10
Comply With and Use Procedures (1)	1/5/7 8/11	1/2/3/4 8/9/10	1/2/3 4/5/6 7/8/9/10	1/2/3 4/5/6 7/8/9/10	
Operate Control Boards (2)	1/5/7 8/11	1/2/3/4 8/9/10	1/2/3 4/5/6 7/8/9/10	1/2/3 4/5/6 7/8/9/10	
Communicate and Interact	1/5/7 8/11	1/2/3/4 8/9/10	1/2/3 4/5/6 7/8/9/10	1/2/3 4/5/6 7/8/9/10	
Demonstrate Supervisory Ability (3)	0	0	1/2/3 4/5/6 7/8/9/10	1/2/3 4/5/6 7/8/9/10	
Comply With and Use Tech. Specs. (3)	0	0	2/3/4	2/3/4	
<p>Notes:</p> <p>(1) Includes Technical Specification compliance for an RO.</p> <p>(2) Optional for an SRO-U.</p> <p>(3) Only applicable to SROs.</p> <p><b>SCENARIO # 4 submitted as a SPARE Scenario</b></p>					

*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.*

FINAL

Facility: <b>Harris 2011-301</b>														Date of Exam: <b>July 2011</b>			
Tier	Group	RO K/A Category Points											SRO-Only Points				
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2	G*	Total	
1. Emergency & Abnormal Plant Evolutions	1	3	3	3	N/A			3	3	N/A			3	18	3	3	6
	2	1	2	2				1	2				1	9	2	2	4
	Tier Totals	4	5	5				4	5				4	27	5	5	10
2. Plant Systems	1	3	2	3	1	3	2	3	3	2	3	3	28	3	2	5	
	2	0	1	1	1	1	1	1	1	1	1	1	10	1	1	3	
	Tier Totals	3	3	4	2	4	3	4	4	3	4	4	38	5	3	8	
3. Generic Knowledge and Abilities Categories					1	2	3	4	10				1	2	3	4	7
					2	2	3	3					1	2	2	2	

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

ES-401		PWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)						Form ES-401-2	
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1	X						007EK1.05 Knowledge of the operational implications of the following concepts as they apply to the reactor trip: Decay power as a function of time.	3.3/3.8	
000008 Pressurizer Vapor Space Accident / 3									
000009 Small Break LOCA / 3						X	009EG2.4.20 Knowledge of the operational implications of EOP warnings, cautions, and notes.	3.8/4.3	
000011 Large Break LOCA / 3		X					011EK2.02 Knowledge of the interrelations between the and the following Large Break LOCA: Pumps	2.6/2.7	
000011 Large Break LOCA / 3 (SRO)						X	011EG2.4.9 Knowledge of low power/shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies.	3.8/4.2	
000015/17 RCP Malfunctions / 4			X				015AK3.03 Knowledge of the reasons for the following responses as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): Sequence of events for manually tripping reactor and RCP as a result of an RCP malfunction	3.7/4.0	
000022 Loss of Rx Coolant Makeup / 2					X		022AA2.03 Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Makeup: Failures of flow control valve or controller	3.1/3.6	
000025 Loss of RHR System / 4 (SRO)					X		025AA2.02 Ability to determine and interpret the following as they apply to the Loss of Residual Heat Removal System: Leakage of reactor coolant from RHR into closed cooling water system or into reactor building atmosphere	4.0/4.2	
000025 Loss of RHR System / 4					X		025AA2.01 Ability to determine and interpret the following as they apply to the Loss of Residual Heat Removal System: Proper amperage of running LPI/decay heat removal/RHR pump(s)	2.7/2.9	
000026 Loss of Component Cooling Water / 8				X			026AA1.06 Ability to operate and / or monitor the following as they apply to the Loss of Component Cooling Water: Control of flow rates to components cooled by the CCWS	2.9/2.9	
000027 Pressurizer Pressure Control System Malfunction / 3	X						027AK1.01 Knowledge of the operational implications of the following concepts as they apply to Pressurizer Pressure Control Malfunctions: Definition of saturation temperature	3.1/3.4	

000029 ATWS / 1		X				029EK2.06 Knowledge of the interrelations between the and the following an ATWS: Breakers, relays, and disconnects	2.9/3.1	
000029 ATWS / 1 (SRO)					X	029EA2.02 Ability to determine or interpret the following as they apply to a ATWS: Reactor trip alarm	4.2/4.4	
000038 Steam Gen. Tube Rupture / 3				X		038EA1.36 Ability to operate and monitor the following as they apply to a SGTR: Cooldown of RCS to specified temperature	4.3/4.5	
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4	X					WE12EK1.3 Knowledge of the operational implications of the following concepts as they apply to the (Uncontrolled Depressurization of all Steam Generators) Annunciators and conditions indicating signals, and remedial actions associated with the (Uncontrolled Depressurization of all Steam Generators).	3.4/3.7	
000054 (CE/E06) Loss of Main Feedwater / 4				X		054AA1.01 Ability to operate and / or monitor the following as they apply to the Loss of Main Feedwater (MFW): AFW controls, including the use of alternate AFW sources	4.5/4.4	
000055 Station Blackout / 6								
000056 Loss of Off-site Power / 6 (SRO)					X	056AG2.2.25 Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.	3.2/4.2	
000057 Loss of Vital AC Inst. Bus / 6								
000058 Loss of DC Power / 6 (SRO)					X	058AA2.01 Ability to determine and interpret the following as they apply to the Loss of DC Power: That a loss of dc power has occurred; verification that substitute power sources have come on line	3.7/4.1	
000062 Loss of Nuclear Svc Water / 4			X			062K3.04 Knowledge of the reasons for the following responses as they apply to the Loss of Nuclear Service Water: Effect on the nuclear service water discharge flow header of a loss of CCW	3.5/3.7	
000065 Loss of Instrument Air / 8					X	065AG2.2.44 Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.	4.2/4.4	
000077 Generator Voltage and Electric Grid Disturbances / 6					X	077AG2.2.37 Ability to determine operability and/or availability of safety related equipment	3.6/4.6	
W/E04 LOCA Outside Containment / 3					X	WE04EA2.1 Ability to determine and interpret the following as they apply to the (LOCA Outside Containment) Facility conditions and selection of appropriate procedures during abnormal and emergency operations.	3.4/4.3	
W/E04 LOCA Outside Containment / 3 (SRO)					X	WE04EG2.1.23 Ability to perform specific system and integrated plant procedures during all modes of plant operation.	3.4/4.4	

WE11 Loss of Emergency Coolant Recirc. / 4			X					WE11EK3.4 Knowledge of the reasons for the following responses as they apply to the (Loss of Emergency Coolant Recirculation) RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.	3.6/3.8	
BW/E04; WE05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4		X						WE05EK2.1 Knowledge of the interrelations between the (Loss of Secondary Heat Sink) and the following: Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.	3.7/3.9	
<b>K/A Category Totals:</b>	3	3	3	3	3	3	3	<b>Group Point Total:</b>		18
<b>SRO K/A Category Totals:</b>					3	3		<b>Group Point Total:</b>		6



000068 (BW/A06) Control Room Evac. / 8						X	068AA2.03 Ability to determine and interpret the following as they apply to the Control Room Evacuation: T-hot, T-cold, and in-core temperatures	4.0/4.2	
000069 (W/E14) Loss of CTMT Integrity / 5									
000074 (W/E06&E07) Inad. Core Cooling / 4						X	074EA2.07 Ability to determine or interpret the following as they apply to a Inadequate Core Cooling: The difference between a LOCA and inadequate core cooling, from trends and indicators	4.1/4.7	
000076 High Reactor Coolant Activity / 9									
W/E01 & E02 Rediagnosis & SI Termination / 3									
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5 (SRO)						X	WE15EG2.4.18 Knowledge of the specific bases for EOPs	3.3/4.0	
W/E16 High Containment Radiation / 9									
BW/A01 Plant Runback / 1									
BW/A02&A03 Loss of NNI-X/Y / 7									
BW/A04 Turbine Trip / 4									
BW/A05 Emergency Diesel Actuation / 6									
BW/A07 Flooding / 8									
BW/E03 Inadequate Subcooling Margin / 4									
BW/E08; W/E03 LOCA Cooledown - Depress. / 4						X	WE03EG2.1.32 Ability to explain and apply system limits and precautions.	3.8/4.0	
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4	X						WE09EK1.2 Knowledge of the operational implications of the following concepts as they apply to the (Natural Circulation Operations) Normal, abnormal and emergency operating procedures associated with (Natural Circulation Operations)	3.3/3.7	
BW/E13&E14 EOP Rules and Enclosures									
CE/A11; W/E08 RCS Overcooling - PTS / 4 (SRO)						X	WE08EA2.1 Ability to determine and interpret the following as they apply to the (Pressurized Thermal Shock) Facility conditions and selection of appropriate procedures during abnormal and emergency operations.	3.4/4.2	
CE/A16 Excess RCS Leakage / 2									
CE/E09 Functional Recovery									
K/A Category Point Totals:	1	2	2	1	2	1	Group Point Total:		9
K/A Category Point Totals: (SRO)					2	2	Group Point Total:		4

ES-401	PWR Examination Outline Plant Systems - Tier 2/Group 1 (RO / SRO)											Form ES-401-2		
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
003 Reactor Coolant Pump											X	003G2.2.42 Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	3.9/4.6	
003 Reactor Coolant Pump						X						003K6.14 Knowledge of the effect of a loss or malfunction on the following will have on the RCPS: Starting requirements	2.6/2.9	
004 Chemical and Volume Control								X				004A2.22 Ability to (a) predict the impacts of the following malfunctions or operations on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Mismatch of letdown and changing flows	3.2/3.1	
005 Residual Heat Removal		X										005K2.03 Knowledge of bus power supplies to the following: RCS pressure boundary motor-operated valves	2.7/2.8	
005 Residual Heat Removal			X									005K3.07 Knowledge of the effect that a loss or malfunction of the RHRS will have on the following: Refueling operations	3.2/3.6	
006 Emergency Core Cooling							X					006A1.07 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ECCS controls including: Pressure, high and low	3.3/3.6	
006 Emergency Core Cooling (SRO)								X				006A2.10 Ability to (a) predict the impacts of the following malfunctions or operations on the ECCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Low boron concentration in SIS	3.4/3.9	
006 Emergency Core Cooling										X		006A4.04 Ability to manually operate and/or monitor in the control room: RHRS	3.7/3.6	

007 Pressurizer Relief/Quench Tank								X					007A1.01 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRTS controls including: Maintaining quench tank water level within limits	2.9/3.1	
008 Component Cooling Water		X											008K2.02 Knowledge of bus power supplies to the following: CCW pump, including emergency backup	3.0/3.2	
008 Component Cooling Water			X										008K3.01 Knowledge of the effect that a loss or malfunction of the CCWS will have on the following Loads cooled by CCWS	3.4/3.5	
010 Pressurizer Pressure Control								X					010K6.04 Knowledge of the effect of a loss or malfunction of the following will have on the PZR PCS: PRT	2.9/3.2	
012 Reactor Protection										X			012A3.06 Ability to monitor automatic operation of the RPS, including: Trip logic	3.7/3.7	
013 Engineered Safety Features Actuation	X												013K1.18 Knowledge of the physical connections and/or cause effect relationships between the ESFAS and the following systems: Premature reset of ESF actuation	3.7/4.1	
022 Containment Cooling (SRO)									X				022A2.03 Ability to (a) predict the impacts of the following malfunctions or operations on the CCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations Fan motor thermal overload/high-speed operation	2.6/3.0	
022 Containment Cooling										X			022A4.05 Ability to manually operate and/or monitor in the control room: Containment readings of temperature, pressure, and humidity system	3.8/3.8	
025 Ice Condenser													N/A		
026 Containment Spray										X			026A4.01 Ability to manually operate and/or monitor in the control room: CSS controls	4.5/4.3	
039 Main and Reheat Steam					X								039K5.08 Knowledge of the operational implications of the following concepts as they apply to the MRSS: Effect of steam removal on reactivity	3.6/3.6	









Facility:	Harris	Date of Exam:	2011			
Category	K/A #	Topic	RO		SRO-Only	
			IR	Q#	IR	Q#
1. Conduct of Operations	2.1.8	Ability to coordinate personnel activities outside the control room.	3.4		4.1	
	2.1.26	Knowledge of industrial safety procedures (such as rotating equipment, electrical, high temperature, high pressure, caustic, chlorine, oxygen and hydrogen).	3.4		3.6	
	2.1.35	Knowledge of the fuel-handling responsibilities of SROs. (SRO)			3.9	
	Subtotal		2		1	
2. Equipment Control	2.2.14	Knowledge of the process for controlling equipment configuration or status. (SRO)			4.3	
	2.2.20	Knowledge of the process for managing troubleshooting activities.	2.6		3.8	
	2.2.38	Knowledge of conditions and limitations in the facility license. (SRO)			4.5	
	2.2.42	Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	3.9		4.6	
	Subtotal		2		2	
3. Radiation Control	2.3.4	Knowledge of radiation exposure limits under normal or emergency conditions	3.2		3.7	
	2.3.5	Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc. (SRO)			2.9	
	2.3.7	Ability to comply with radiation work permit requirements during normal or abnormal conditions. (SRO)			3.6	
	2.3.13	Knowledge of radiological safety procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.	3.4		3.8	
	2.3.14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.	3.4		3.8	
	Subtotal		3		2	
4. Emergency Procedures / Plan	2.4.12	Knowledge of general operating crew responsibilities during emergency operations.	4.0		4.3	
	2.4.22	Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.	3.6		4.4	
	2.4.27	Knowledge of "fire in the plant" procedures. (SRO)			3.9	
	2.4.17	Knowledge of EOP terms and definitions. (SRO)			4.3	
	2.4.45	Ability to prioritize and interpret the significance of each annunciator or alarm.	4.1		4.3	
	Subtotal		3		2	
Tier 3 Point Total			10		7	



Facility: Harris Nuclear Plant - Test No. 05000400/2011301				Date of Exam: 07-11-2011			Exam Level: RO <input checked="" type="checkbox"/> SRO <input checked="" type="checkbox"/>	
Item Description	Initial			a	b*	c*		
	a	b*	c*					
1. Questions and answers are technically accurate and applicable to the facility.				X	M	M		
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.				X	M	M		
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401				X	M	M		
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).				X	M	M		
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: ___ the audit exam was systematically and randomly developed; or ___ the audit exam was completed before the license exam was started; or ___ the examinations were developed independently; or <u>X</u> the licensee certifies that there is no duplication; or ___ other (explain)				X	M	M		
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	X	M	M		
	43 / 12	1 / 1	31 / 12					
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		X	M	M		
	33 / 10	42 / 15						
8. References/handouts provided do not give away answers or aid in the elimination of distractors.				X	M	M		
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.				X	M	M		
10. Question psychometric quality and format meet the guidelines in ES Appendix B.				X	M	M		
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.				X	M	M		
a. Author	Printed Name / Signature					Date		
b. Facility Reviewer (*)	Archie Lucky / Archie Lucky					7/7/11		
c. NRC Chief Examiner (#)	JIMON SWINOT / JIMON SWINOT					7/7/11		
d. NRC Regional Supervisor	GERARD W. LASCA / GERARD W. LASCA					7/7/11		
	MARK FRANKIE / MARK FRANKIE					7/7/11		
Note:	* The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.							

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A		
<p><b>Instructions</b></p> <p>[Refer to Section D of ES-401 and Appendix B for additional information regarding each of the following concepts.]</p> <p>1. Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.</p> <p>2. Enter the level of difficulty (LOD) of each question using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).</p> <p>3. Check the appropriate box if a psychometric flaw is identified:</p> <ul style="list-style-type: none"> <li>• The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).</li> <li>• The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).</li> <li>• The answer choices are a collection of unrelated true/false statements.</li> <li>• The distractors are not credible; single implausible distractors should be repaired, more than one is unacceptable.</li> <li>• One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).</li> </ul> <p>4. Check the appropriate box if a job content error is identified:</p> <ul style="list-style-type: none"> <li>• The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).</li> <li>• The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be known from memory).</li> <li>• The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).</li> <li>• The question requires reverse logic or application compared to the job requirements.</li> </ul> <p>5. <u>Check questions that are sampled</u> for conformance with the approved K/A and those that are <i>designated SRO-only</i> (K/A and license level mismatches are unacceptable).</p> <p>6. Based on the reviewer's judgment, is the question as written (U)nsatisfactory (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?</p> <p>7. At a minimum, explain any "U" ratings (e.g., how the Appendix B psychometric attributes are not being met).</p>														
1	F	2											S	007EK5.01 Question appears to match the K/A. SAT has a calculated -1/3 dpm rate been determined? What was this time?  <b>NEW</b>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
2	F	2												S	<b>009EG2.4.20</b> Question appears to match the K/A. SAT <b>NEW</b>
3	H	2				X								E	<b>011EK2.02</b> Question appears to match the K/A. Distractor D is not plausible. With a large break LOCA in progress, a yellow path is not plausible. Need to develop another distractor for d, or use a two by two with the other distractors, and maybe including a reason for taking the actions. <b>NEW</b> <b>Made changes to stem. SAT. 6/29/2011</b>
4	H	2	X											E	<b>0015AK5.03</b> Question appears to match the K/A. Raise reactor power in the stem to 55%, and change the 49% <sup>s</sup> in the distractors to greater than P8. <b>NEW Made changes SAT. 6/29/2011</b>
5	H	2				X								E	<b>022AA2.03</b> Question appears to match the K/A. Change distractor D to read: FCV114B....had a loss of air during the auto make-up. (The way it is stated now, this is teaching in the distractor). The applicant should know the valve fails closed. <b>BANK Made changes SAT. 6/29/2011</b>
6	H	2												S	<b>025AA2.01</b> Question appears to match the K/A. SAT <b>NEW</b>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
7	H	2				X									E	<p><b>026AA1.06</b> Question appears to match the K/A. Distractors A is not totally plausible. It the applicant believed (as in your example of distractor analysis) that the TCV would go full open (High CCW flow) why would you secure letdown, it would be cooler than normal, this could cause an RCS dilution (colder water through the demins causing boron to be kept in the demins) causing Tave to rise. Need to do something to the A and B distractors.</p> <p><b>BANK Made some changes to stem, added noun names. Then SAT 6/29/2011</b></p>
8	F	2													S	<p><b>027AK1.01</b> Question appears to match the K/A.SAT</p> <p><b>BANK</b></p>
9	H	2													S	<p><b>029EK2.06</b> Question appears to match the K/A. Distractor D should be changed to read fails to energize. Otherwise SAT.</p> <p><b>NEW</b></p> <p><b>Left as is SAT 6/29/2011</b></p>
10	H	2													S	<p><b>038EA1.36</b> Question appears to match the K/A.SAT</p> <p><b>BANK</b></p>
11	H	2													S	<p><b>WE12EK1.3</b> Question appears to match the K/A.SAT</p> <p><b>NEW</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
12	H	2				X									U	<p><b>054AA1.01</b> Question appears to match the K/A. Distractors B and C are not plausible. Based on WOG usage, H.5 is never required to be entered. Conditions are not close for implementation of C.2 Core exit TCs must be around 700 °F to be required to enter.</p> <p><b>BANK</b></p> <p><b>Changed stem and distractors now SAT 6/29/2011</b></p>
13	F	2	X												E	<p><b>062AK3.03</b> Question appears to match the K/A. (Leave the plant conditions as is)</p> <p>Which one of the following describes the reason for isolating ESW to the "A" train containment fan coolers?</p> <p><b>BANK</b></p> <p><b>Made changes as requested SAT 6/29/2011</b></p>
14	H	2	X												E	<p><b>065AG2.2.44</b> Question appears to match the K/A. This question is kind of confusing. You should separate out the two parts in the stem. Someone could read the question to state what pressure is the instrument air system at the time of the alarm.</p> <p><b>NEW SAT 6/29/2011</b></p>
15	H	3													S	<p><b>077AG2.2.37</b> Question appears to match the K/A. SAT. One page states the question is an LOR Bank question, and the LXR test item states it is new.</p> <p><b>NEW</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
16	H	2				X									U	<p><b>WE04EA2.1</b> Question appears to match the K/A. Distractors A, C, and D are not plausible as written. Not all of the SI termination values are listed in the stem. If I did not know what subcooling was, why would I transition to SI termination? S/G levels are also not present, they could be above the required amount, and reducing AFW was prudent, why would I go to H.1? With the stem stating that aux building rad monitors are in alarm and containment pressure at 0.2 psig why would I go to a post LOCA cooldown? This Question needs some work.</p> <p><b>NEW</b></p> <p><b>Add radiation monitor alarms for locations in the aux building. Then SAT</b></p>
17	F	2													S	<p><b>WE11EK3.4</b> Question appears to match the K/A. In some of the distractors, containment is capitalized and in some it is not. They should all be the same. Otherwise SAT.</p> <p><b>NEW</b></p>
18	H	2				X									U	<p><b>WE05EK2.1</b> Question appears to match the K/A. Distractors A and C are not plausible. (A) Main feedwater is normally in service at 100% power NOT and NOP. Why would I think I would need to depressurize to allow it to supply feed flow after the unit was tripped? (C) I know of no place in the procedures that have you maintain the PORVs closed and the block valves closed. This does not make sense. There are many questions out there on H.1. This question needs to be re-written.</p> <p><b>BANK</b></p> <p>Made some changes but still need to work on C</p> <p><b>C could still be considered correct. 6/29/2011</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
																<b>Changed distractors C and D SAT 6/30/2011</b>
19	H	2				X									U	<p><b>001AK2.01</b> Question appears to match the K/A. Distractors A and B are not plausible, as stated in your distractor analysis rod would be going in with high Tave. Would a failure high of impulse pressure work better (rods would initially step out at 72 steps per minute) that would make for a better distractor, this question will not work as written.</p> <p><b>BANK</b></p> <p><b>Made changes as requested SAT SAT 6/30/2011</b></p>
20	H	1										X			S	<p><b>028AK2.03</b> Question appears to match the K/A, but with no transient in progress and pressurizer level failed at the programmed level, why would any thing change? This is not really testing anything that can be identified. We either need to have a transient or the instrument needs to fail off of program. I understand the malfunction present, but if this happened in the plant, it would not be seen until a transient occurred, so essentially there is not malfunction. As written the question is not testing the malfunction, and really does not meet the K/A.</p> <p><b>BANK</b></p> <p><b>After discussion, left question as is SAT 6/30/2011</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q=K/A	SRO Only			
21	F	1				X									U	<b>037AA1.02</b> Question kind of matches the K/A. If none of the fans have any kind of auto start why would I choose C and D. These are not plausible. You state in the distractor analysis that some valves stroke, and dampers reposition, why are we not testing this? Would 55 gallons cause any of these rad monitors to alarm? Not very discriminating  <b>BANK</b> <b>Changed question to 2X2 format, SAT 6/30/2011</b>
22	H	2				X									E	<b>051AK3.01</b> Question kind of matches the K/A. Do the atmospheric dumps ever get an auto open signal? If not, they are not plausible. After reading the lesson material I believe they are plausible. Is it I do not believe A and C reasons are plausible.  <b>BANK Made changes to distractors SAT 6/30/2011</b>
23	F	1.5													S	<b>059AK3.01</b> Question appears to match the K/A. SAT <b>BANK (not very discriminating)</b>
24	F	1.5													E	<b>068AA2.03</b> Question appears to match the K/A. Repeat question from 2009B exam. Is the B train CETCs monitored from the same location, or are they monitored in different place? Can we change this question to the B train and make it a little different. If so this question will be considered modified.  <b>BANK Harris 2009B exam Long discussion on question decided to remove A trn reference (now the same as 2009B exam) but is testing the knowledge of location of fire and what should be used. SAT 6/30/2011</b>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
25	H	2												S	<b>074EA2.07</b> Question appears to match the K/A. SAT <b>NEW</b>
26	H	2												S	<b>WE03G2.1.32</b> Question appears to match the K/A. SAT <b>BANK</b>
27	H	2				X								E	<b>WE09EK1.2</b> Question appears to match the K/A. To make distractor A more plausible, have one of the CRDM fans fail to restart/trip on the loss of off site power, (only two fans are required.) Also in distractor D use the correct version of this, to ensure SG pressures are less than 50°F above RCS...to add plausibility. (this is not why the caution is there). <b>BANK</b> <b>Made changes as requested. SAT 6/30/2011</b>
28	H	2												S	<b>003G2.2.42</b> Question appears to match the K/A. SAT <b>NEW</b>
29	F	1.5												S	<b>003K6.14</b> Question appears to match the K/A. SAT <b>BANK (not very discriminating)</b>
30	H	2				X				X				E	<b>004A2.22</b> Question kind of meets K/A in a backwards fashion. A charging / letdown mismatch is evident but not stated. Distractor B is not plausible in that this malfunction causes pressurizer level to increase and VCT level to trend down. The correct answer also causes the applicant to make an assumption (direction of charging flow control failure), or select this answer by eliminating the

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
															others. Need to rewrite to correct these issues. As it stands now one could state the question does not have a truly correct answer. <b>BANK</b> <b>Made changes as requested. SAT 6/30/2011</b>
31	H	2										X		U	<p><b>005K2.03</b> As written the question does not match the K/A. The operator does not need to know the power supply to the valves as stated in the K/A. The operator need only know that valves are in series and powered from a different train, and would automatically select either c or d. Recommend changing the question to read;</p> <p>Same Stem</p> <p>A. 1RH1 is powered from 1A21-SA, 1RH2 is powered from 1B21-SB. Breakers are open.</p> <p>B. 1RH1 is powered from 1A21-SA, 1RH2, is powered from 1B21-SB. Breakers are closed.</p> <p>C. 1RH1 is powered from 1B21-SB, 1RH2, is powered from 1A21-SA, Breakers are open.</p> <p>D. 1RH1 is powered from 1B21-SB, 1RH2, is powered from 1A21-SA, Breakers are closed</p> <p><b>BANK</b> <b>SAT 6/30/2011</b></p>
32	H	2										X		U	<p><b>005K3.07</b> As written the question does not match the K/A. The K/A asks for the effect on refueling operations,</p> <p>To address this K/A with Harris' TS it appears that refueling could continue for 1 hour, unless core reload is considered to be an increase in reactor decay heat load. If refueling is considered an</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
																increase in reactor decay heat load, then is should be suspended immediately. Need to work on this question at least to the point of addressing the K/A. <b>NEW Made changes as requested. SAT 6/30/2011</b>
33	F	2					X								E	<b>006A1.07</b> Question kind of matches K/A. May need to reword the second part, it appears we have a subset issue. Greater than 2200, is greater than 2000, D could also be argued as a correct answer. <b>NEW</b> <b>Made changes to stem, Made changes as requested. SAT 6/30/2011</b>
34	F	2													S	<b>006A4.04</b> Question appears to match the K/A. SAT <b>BANK</b>
35	F	1.5													E	<b>007A1.01</b> Question appears to match the K/A. This question is a repeat of #34 on the Harris 2009B exam. Change some of the items, including, change small break LOCA to safety or PORV leaking. How is this water transferred, what pump is used? This would change it up a little. <b>BANK</b> Harris 2009B exam Made changes as requested <b>Made changes as requested. SAT 6/30/2011</b>
36	F	1										X			U	<b>008K2.02</b> As written the question does not match the K/A.. Like the previous power supply question, the operator does not really need to know the power supply, only the voltage the pumps are designed for.  You give applicant a swing component in this case and both power supplies for that voltage. Distractors C and D do not appear to be plausible. If a pump

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
																can be powered from two power supplies at either voltage level one breaker would not be feasible. Need to find another distractor for the second part of C and D. <b>NEW</b> <b>Made changes as requested. SAT 6/30/2011</b>
37	F	2	X			X	X							E		<b>008K3.01</b> Question appears to match the K/A. Is this an inadvertent phase B? If not, distractor A could be considered correct IAW path-1.  Distractor C should read: RCP operation may continue provided that normal seal injection flow is maintained.  This question should either be tied to a particular procedure, or stated per system design, etc. <b>BANK</b> <b>Changed to AOP 18.0 and changed distractor D SAT 6/30/2011.</b>
38	F	1				X							X	E		<b>010K4.06</b> Question does not appear to match the K/A. How does the malfunction affect the Pressurizer pressure control system? Distractor analysis for A and C states the applicant may think that temperature will rise, but that distractors state remains the same, need to have the distractors agree with the analysis. Did you intend to have the distractors state temperature will rise? Distractor C and D do not appear to be plausible, industry standard is psig. Will discuss. I will have another examiner review also. As written not very discriminating. <b>BANK</b> <b>Changed C and D to 150 psig based on seal injection relief. Made changes as requested. SAT</b>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
																6/30/2011
39	F	2				X									E	<p><b>012A3.06</b> Question appears to match the K/A. Distractor A is not plausible. Try using a two by two with distractors C and D, and also ask what the trip protects against. (i.e. DNB etc.)</p> <p><b>BANK</b></p> <p><b>Made changes as requested. SAT 6/30/2011</b></p>
40	H	2													S	<p><b>013K1.18</b> Question appears to match K/A. SAT</p> <p><b>NEW</b></p>
41	F	2	X			X									E	<p><b>022A4.05</b> Question appears to match the K/A. First column (time) is not needed. Distractor A is not plausible, if neither value is above 120°F why would applicant pick it.</p> <p><b>NEW</b></p> <p><b>Made changes as requested. SAT 6/30/2011</b></p>
42	F	2													S	<p><b>026A4.01</b> Question appears to match the K/A. SAT</p> <p><b>BANK</b></p>
43	H	2				X									E	<p><b>039K5.08</b> Question appears to match the K/A. Distractors A and B first part is not plausible. Need to develop another first part distractor, or develop a two by two question using another parameter.</p> <p><b>BANK</b></p> <p><b>Made changes (S/G Level) Modified. Made changes as requested. SAT 6/30/2011</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
44	H	2												S	<b>059A2.01</b> Question appears to match the K/A. Change distractors C and D to Currently AFW pumps must be manually started. Otherwise SAT <b>NEW</b>
45	H	2		X										E	<b>059A3.06</b> Question appears to match the K/A. Change the conditions in the stem to C S/G level reaches 80%. An automatic reactor trip and turbine trip occurs. Then leave the current conditions as is. Informing the applicant that the trip occurred as a result of high S/G level is cuing. <b>NEW</b> <b>Made changes as requested. SAT 6/30/2011</b>
46	F	1				X								U	<b>061K5.01</b> Question appears to match the K/A. Question does not appear to be discriminating. All of the distractors seem to NOT be plausible. Need different distractors or a different way of testing this topic. Will consider changing the K/A. (Will get another examiners opinion) Second opinion agreed, there are not any distractors that are plausible. <b>BANK</b> <b>Completely changed the question. SAT 6/30/2011</b>
47	H	2												S	<b>061A2.04</b> Question appears to match the K/A. SAT <b>NEW</b>
48	F	2				X								E	<b>062K3.03</b> Question appears to match the K/A. The second part of distractors A and C are not plausible. I do not know of battery charger that automatically aligns itself. Several will automatically be repowered if the normal AC source is lost, but a battery charger not in service will not align itself.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
																<b>BANK</b> <b>Made changes as requested. SAT 6/30/2011</b>
49	F	2													S	<b>063A 1.01</b> Question appears to match the K/A. SAT <b>BANK</b>
50	F	1													S	<b>063K1.02</b> Question appears to match the K/A. SAT <b>BANK( Not very discriminating)</b>
51	F	2													S	<b>064G2.4.34</b> Question appears to match the K/A. SAT <b>BANK</b>
52	H	2													S	<b>073K5.02</b> Question appears to match the K/A. SAT <b>NEW</b>
53	H	2													S	<b>076K4.06</b> Question appears to match the K/A. SAT <b>BANK</b>
54	H	2													S	<b>078G2.1.19</b> Question appears to match the K/A. (This is a tough K/A, and this is about as good as you could do) SAT <b>NEW</b>
55	H	2													S	<b>103K1.08</b> Question appears to match the K/A. SAT <b>BANK</b>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
56	H	2												S	<b>002G2.2.40</b> Question appears to match the K/A. Distractor analysis does not match up with distractors. Otherwise SAT <b>BANK</b>
57	F	2												S	<b>014A4.01</b> Question appears to match the K/A. SAT <b>BANK 2009A Harris NRC exam</b>
58	H	2												S	<b>017K6.01</b> Question appears to match K/A. SAT <b>BANK</b>
59	F	2												S	<b>027K2.01</b> Question appears to match K/A. SAT <b>NEW</b>
60	H	2												S	<b>029A3.01</b> Question appears to match K/A. SAT <b>BANK</b>
61	F	2				X								E	<b>034K4.03</b> Question appears to match K/A Do not believe 4000 lbs to be plausible. Change to 3000 lbs. Then SAT <b>NEW</b> <b>Changed to 3000 lbs. Made changes as requested. SAT 6/30/2011</b>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
62	F	2				X							X		U	<b>071A1.06</b> Not sure this question matches the K/A. Will get a second opinion. Based on second opinions question does not meet the K/A. (nothing to do with ventilation). Does the gas release flow pass through distractors B and C? If not, they are not plausible. Key operated switch? Is this listed like this in the procedure? If not this is cuing. <b>BANK</b> <b>Made changes as requested. SAT 6/30/2011</b>
63	H	2				X									E	<b>072K3.02</b> Question appears to match K/A. SAT. Change the first part of distractors A and B to "receives an auto start signal", and C and D to "Does NOT receive an auto start signal." The way the question is worded now it implies that the fan must be started, so why would it not start automatically. <b>BANK</b> <b>Made changes as requested. SAT 6/30/2011</b>
64	H	2													S	<b>075A2.03</b> Question appears to match K/A. SAT <b>NEW</b>
65	F	2													S	<b>086K5.04</b> Question appears to match K/A. SAT <b>NEW</b>
66	H	2	X												E	<b>G2.1.8</b> Question appears to match K/A. With the noise coming from the FHB, would AOP-41.0 be more appropriate. Should it just be stated that Reactor cavity and Fuel pool level are observed lowering? Just don't want any confusion. <b>NEW</b> <b>SAT 6/30/2011</b>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
67	F	2												S	<b>G2.1.26</b> Question appears to match K/A. SAT <b>NEW</b>
68	F	2												S	<b>G2.2.20</b> Question appears to match K/A. SAT <b>BANK 2009A Harris NRC exam</b>
69	F	1.5				X								U	<b>G2.2.24</b> Question appears to match K/A. Do not believe distractors A and B are plausible. Attachment 1 of GP-007 states that above 350°F, the limit for cooldown is 100°F/hr. Not very discriminating as written. <b>BANK Made changes as requested. SAT 6/30/2011</b>
70	F	1	X											E	<b>G2.3.4</b> Question appears to match K/A. Not very discriminating. Do you have a bank question where A is the correct answer (admin limit and dose for protecting a piece of equipment? If not, the stem of this question could be changed and this would be a modified question. <b>BANK Made changes as requested. SAT 6/30/2011</b>
71	H	2	X			X								E	<b>G2.3.13</b> Question appears to match K/A. As written the question leads the applicant to believe that only one of the items below could have happened. (either purge, or containment ventilation isolation) But there are two alarms in. If the applicant knows that AOP-5 has actions for 3502, but not for 3561, then the applicant would choose A. Second part of distractor B is not plausible.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
																<b>BANK Explained why distractors were plausible. SAT 6/30/2011</b>
72	F	2				X	X								U	<b>G2.3.14</b> Question kind of matches the K/A. Distractors C and D are not plausible as written. How can setting a PORV to 88% prevent atmospheric dump actuation? In fact all of the distractors state prevent either code safety valves or atmospheric dump, and setting the PORV for this value will not prevent lifting/actuation of either. Need to work on this question. <b>BANK</b> <b>Made changes as requested. SAT 6/30/2011</b>
73	H	2				X									E	<b>G2.4.12</b> Question appears to match K/A. Distractor B is not plausible. <b>BANK</b> <b>Changed distractor B. SAT 6/30/2011</b>
74	F	1													E	<b>G2.4.22</b> Question appears to match K/A. Distractor C is not plausible. Not very discriminating. <b>BANK Made changes as requested to distractor C. SAT 6/30/2011</b>
75	H	2				X						X			U	<b>G2.4.45</b> Does not really meet the K/A. There is not any prioritization taking place. (Only One annunciator). Distractors A and B are not plausible, the rod being withdrawn is in group 1 so how could all group 1 lift coils be de-energized? <b>BANK</b> <b>Wrote a new question. SAT 6/30/2011</b>

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

**35 Sats, 13 Unsats, and 27 Enhancements**

**General statement: all bank questions should have the answers rearranged.**

**How were the repeat questions from the last two Harris NRC examinations selected?**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
<p><b>Instructions</b></p> <p>[Refer to Section D of ES-401 and Appendix B for additional information regarding each of the following concepts.]</p> <p>1. Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.</p> <p>2. Enter the level of difficulty (LOD) of each question using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).</p> <p>3. Check the appropriate box if a psychometric flaw is identified:</p> <ul style="list-style-type: none"> <li>• The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).</li> <li>• The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).</li> <li>• The answer choices are a collection of unrelated true/false statements.</li> <li>• The distractors are not credible; single implausible distractors should be repaired, more than one is unacceptable.</li> <li>• One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).</li> </ul> <p>4. Check the appropriate box if a job content error is identified:</p> <ul style="list-style-type: none"> <li>• The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).</li> <li>• The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be known from memory).</li> <li>• The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).</li> <li>• The question requires reverse logic or application compared to the job requirements.</li> </ul> <p>5. <u>Check questions that are sampled</u> for conformance with the approved K/A and those that are <i>designated SRO-only</i> (K/A and license level mismatches are unacceptable).</p> <p>6. Based on the reviewer's judgment, is the question as written (U)nsatisfactory (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?</p> <p>7. At a minimum, explain any "U" ratings (e.g., how the Appendix B psychometric attributes are not being met).</p>																
76	H	2				X								E	011EG2.4.9 Question appears to match K/A. Question does have an SRO aspect to it. Both procedures entry conditions are met. Does the operator always enter AOP-20 first?	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q=K/A	SRO Only		
															<p>What is the capacity of the charging pumps when shutdown? Distractors A and C are not plausible unless the capacity of the charging pump is approached. With level stable and temperature not rising, why would BIT flow be initiated? I could not find a step in the initial entry point in to AOP-20, or in section 3.4 that directed the operator to align BIT flow as stated in the distractor analysis.</p> <p>Need to attempt to find something that is plausible under these conditions, or change the conditions.</p> <p>This question is very similar to question 77. Although under different conditions, I might be better to ask this question closer to conditions that apply to using E-0 (path-1) Mode 4 for instance, does Path -1 apply?</p> <p><b>BANK</b></p> <p><b>Made changes to stem to improve distractor plausibility SAT 6/23/2011</b></p>
77	H	2				X								U	<p><b>025AA2.02</b> Question appears to match K/A. Question does have an SRO aspect to it. Actions are very similar to question 76. I could not find a reference in AOP16.0 to align flow through the BIT, nor could I find actions in the procedure for securing RHR pumps and isolating RHR. Also, if pressurizer level is stable, why would I initiate BIT flow? Therefore, these distractors do not appear to be plausible.</p> <p><b>BANK Made changes as requested SAT 6/23/2011</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q=K/A	SRO Only			
78	H	2											X	X	E	<p><b>029EA2.02</b> Question does not meet the K/A at the SRO level. Does not appear to be SRO only. The first part of the question is RO knowledge. (First out annunciators, conditions requiring a reactor trip. The second part asks when to perform an attachment. This attachment is directed by a foldout page, and foldout pages are considered to be RO knowledge. (RO monitor and take actions based on the foldout page) When would you have an SI and not verify the actuation? (Discussed with a second examiner)</p> <p>Made several changes to stem and distractors (foldout is not applicable until after step 10.)</p> <p><b>NEW SAT 6/29/2011</b></p>
79	F	2	X												E	<p><b>056AG2.2.25</b> Question appears to match the K/A. Appears to have an SRO aspect to it. The stem of the question asks which one of the following satisfies the bases requirements for offsite power distribution with the plant in mode 1. It looks like you have three correct answers to the stem. (I understand that only is in the responses, but a and b could be considered a subset of d. Need to rewrite the stem to allow only one correct response.</p> <p>Removed either through the switchyard or directly from D. Added numbers to other distractors.</p> <p><b>BANK</b></p> <p><b>SAT 6/29/2011</b></p>
80	H	2													S	<p><b>058AA2.01</b> Question kind of matches the K/A will allow based on plant design. SAT</p> <p><b>NEW</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
81	H	1												S	<b>WE04EG2.1.23</b> Question appears to match the K/A. Appears to have an SRO aspect to it. Not very discriminating.  <b>BANK</b>
82	H	2											X	U	<b>028AA2.04</b> Question appears to match K/A. Question is not SRO only. The answer can be determined using RO knowledge. The indications that are given indicate that a failure of LK 459F has occurred. Only one distractor has this control listed. No SRO knowledge is required to answer this question. Need to develop a question that tests the SROs required knowledge as well. Maybe a two by two with two different plausible attachments.  <b>NEW</b> <b>Rewrote question SAT 6/23/2011</b>
83	H	2	X	X							X			E	<b>051AG2.4.8</b> Question appears to match the K/A. Appears to have a SRO aspect. Kind of backwards logic and wordy stem focus. Some teaching in stem. Try wording it like this: Unit is at 100% power. <ul style="list-style-type: none"> <li>Degrading condenser vacuum was observed.</li> <li>CTMP-7-1 Cooling Tower 1 Level HI/LO is in alarms</li> <li>AOP-12 "Partial Loss of Condenser Vacuum" has been entered</li> <li>IAW AOP-12, the reactor has been tripped and EOP Path -1 has been entered</li> </ul> Which one of the following describes a parameter that would require the operator to continue taking actions in accordance with AOP-12, and when will it be appropriate to take those actions?

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q=K/A	SRO Only		
															<p>A. Condenser Pit High Level alarm annunciates; continue performing the actions of AOP-12.0 only after EPP-004 is exited.</p> <p>B. Condenser Pit High Level alarm annunciates; continue performing the actions of AOP-12.0 during the performance EPP-004 -as time allows.</p> <p>C. Continuous running of both Industrial Waste Sump pumps is observed; continue performing the actions of AOP-12.0 only after EPP-004 is exited.</p> <p>D. Continuous running of both Industrial Waste Sump pumps is observed; continue performing the actions of AOP-12.0 during the performance EPP-004 -as time allows.</p> <p><b>NEW Made changes as requested, then question was altered. Requested licensee to change back to suggested version. Made changes as requested. SAT 06/29/2011</b></p>
84	H	2												S	<p><b>WE15EG2.4.19</b> Question appears to match the K/A, and appears to be SRO knowledge. SAT</p> <p><b>NEW</b></p>
85	H	2												S	<p><b>WE08EA2.1</b> Question appears to match the K/A, and appears to be SRO only knowledge. SAT</p> <p><b>BANK</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
86	H	2	X	X										E	<p><b>006A2.10</b> Question appears to match the K/A. Question appears to have an SRO aspect to it. Typically for a time frame greater than 1 hour a reference is provided. A reference with this question would be a direct look up. Change the times to 1 hour (RO knowledge) and 72 hours. Leave the second part as is. Need to change the stem so that the applicant knows that the inoperability is based on just the line-up required by OP-110. Leave off the 1 hour in the second part (teaching in stem)</p> <p><b>NEW</b></p> <p><b>Made changes as requested SAT 6/20/2011</b></p>
87	H	2				X								E	<p><b>022A2.03</b> Question appears to match the K/A. Question appears to have an SRO aspect to it. It does not appear to me that selecting AH-3A-SA as the lead fan is plausible. Each fan AH-1, AH-2, AH-3, and AH-4 must be operable, so why would selecting AH-3A-SA as the lead fan make AH-2 operable. Need to find a better distractor.</p> <p><b>BANK</b></p> <p><b>Discussed the system, and decided that due to the control board layout, and applicant could select the 3 fan by mistake. Will allow as written. SAT 6/29/2011</b></p>
88	H	1										X	S	<p><b>039A2.02</b> Question appears to match the K/A. It is not SRO only. The conditions listed are procedure entry level conditions, and are therefore RO knowledge. The second part of the question is systems knowledge.</p> <p><b>NEW Gave licensee a new K/A. Rewrote question to new K/A. SAT 6/29/2011</b></p>	

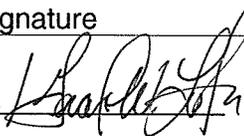
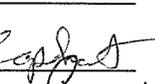
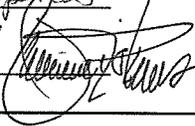
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q=K/A	SRO Only		
89	H	1												E	<p><b>076G2.4.47</b> Question appears to match the K/A. Question does have an SRO aspect to it. Why is page 8 of the AOP needed as a reference? Not a very discriminating question. What can be done to make it more discriminating?</p> <p><b>NEW</b></p> <p><b>Removed reference, SAT 6/29/2011</b></p>
90	F	2	X											E	<p><b>103G2.2.36</b> Question appears to match the K/A. Question does have an SRO aspect to it. I am assuming this valve is an MOV. Again a question is asked that involves two different technical specifications and two completion times greater than one hour. With the technical specification provided as a reference the question becomes non discriminating. This idea is good. We need to develop it further (maybe include basis for this tech spec. Stem is wordy</p> <p><b>NEW</b></p> <p><b>Made changes as requested. Shortened stem and all distractors. SAT 6/29/2011.</b></p>
91	F	2				X							X	U/S	<p><b>001G2.2.12</b> Question appears to match the K/A. Do not believe it is testing SRO only knowledge. Will get a second opinion. Second opinions stated if ROs perform this test, then this is RO knowledge. DRPI usually indicates 3 step increments, distractor C DRPI indication should change some (like to 213 on the final.) Rod steps indicated 6 steps, on drpi</p> <p><b>NEW Discuss with Boss. Changed K/A to 001G2.2.40 7/06/2011 New Question</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q=K/A	SRO Only		
92	H	2	X										X	U	<p><b>015A2.03</b> Question appears to match the K/A. Do not believe it is testing SRO only knowledge. Will get a second opinion. Second opinions determined question to be borderline SRO. (may not have enough information to determine) Does the computer alarm ARP have the RO check to see if two channels are out? First part of question is GFE. Distractors C and D are subsets of A and B, and could be considered correct as question is written (1or more) need to put minimum in the stem. <b>NEW</b></p> <p><b>Replaced Question SAT 6/29/2011</b></p>
93	F	2											X	U	<p><b>034K1.04</b> Question does not appear to match the K/A. Question does have an SRO aspect to it.</p> <p>The K/A asks for the cause-effect relationship between fuel handing system and NIS. The question already gives the applicant the cause/effect in that fuel handling is stopped due to inoperable source range detectors. The appropriate way to test this question is to have some malfunction of NIS (out of service) and ask if fuel handling can continue. Will get a second opinion on the K/A match.</p> <p><b>NEW</b></p> <p><b>Rewrote question Now SAT 6/29/2011</b></p>
94	F	2	X				X							E	<p><b>G2.1.35</b> Question appears to match the K/A. Question appears to be testing SRO knowledge. The stem should state: In accordance with FHP-020. FHP-020 also states that the Superintendent-Shift Operations must concur. This question states shift manager. Need to determine which is correct.</p> <p><b>BANK Completely changed the question (part of stem and all distractors). SAT</b></p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
95	F	2												S	<b>G2.2.14</b> Question appears to match the K/A. Question appears to be testing SRO knowledge. SAT <b>NEW</b>
96	F	2												S	<b>G2.2.38</b> Question appears to match the K/A. Question appears to be testing SRO knowledge. SAT <b>NEW</b>
97	F	2				X								E	<b>G2.3.5</b> Question appears to match the K/A. Question appears to be testing SRO knowledge. Do not believe the second part of distractors B and D are plausible. (hot standby for rad monitor inop?) <b>MOD</b> <b>Explained that several radiation monitors (rcs leakage) does require hot standby in 6 hours. Plausibility OK. SAT 6/29/2011</b>
98	F	2				X								E	<b>G2.3.7</b> Question kind of matches K/A, will allow as discussed. Question does have an SRO aspect. If the RCC would give approval for this after the TSC is manned, then the question is sat, if not we may need to develop a more plausible approval authority. <b>NEW</b> <b>Changed RCC to RCD (gives approval for emergency doses) at other times. SAT 6/29/2011</b>
99	H	2					X							E	<b>G2.4.27</b> Question appears to match the K/A. Question does have an SRO aspect to it. Distractor analysis is confusing. It states that AOP-36 is exited but the sub-procedures are not. The way this is word in the distractors, one could argue A is also

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
																correct. Need to make this clear. <b>NEW</b> <b>Replaced with a previous used question 2009A NRC Exam (modified slightly) SAT 6/29/2011</b>
100	F	1											X	S		<b>G2.4.17</b> Question appears to match the K/A. Does not appear to be SRO only knowledge will have another examiner review and give second opinion. Distractor A and C are not plausible. (not enough information in A for someone to determine if it could be done) C is not plausible because no one starts equipment until the sequencer has completed its loading sequence. <b>BANK Still need to work not SRO only</b> <b>Changed K/A to 2.4.18 (Unable to write an SRO question to original K/A.</b>

8 Sats, 5 Unsats, and 12 Enhancements

Facility: <u>HARRIS</u>		Date of Exam: <u>July 20, 2011</u>		Exam Level: <u>RO/SRO</u>	
Item Description	Initials				
	a	b	c		
1. Clean answer sheets copied before grading	<u>AS</u>	<u>N/A</u>	<u>AK</u>		
2. Answer key changes and question deletions justified and documented	<u>AS</u>		<u>AK</u>		
3. Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	<u>AS</u>		<u>AK</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>AS</u>		<u>AK</u>		
5. All other failing examinations checked to ensure that grades are justified	<u>N/A</u>		<u>AK</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>AS</u>		<u>AK</u>		
Printed Name/Signature			Date		
a. Grader	<u>GERARD W. LASICA / </u>			<u>8/8/2011</u>	
b. Facility Reviewer(*)	<u>N/A</u>				
c. NRC Chief Examiner (*)	<u>Phillip G. Capehart / </u>			<u>8/8/2011</u>	
d. NRC Supervisor (*)	<u>Malcolm T. Widmann / </u>			<u>08/10/11</u>	
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.					