Facility: Watts Bar 2008-301 Date of Examination: 5/12/2008

Examinations Developed by: Facility

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)	11/2007
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	1/08/2008
-120	3. Facility contact briefed on security and other requirements (C.2.c)	1/08/2008
-120	4. Corporate notification letter sent (C.2.d)	1/11/2008
[-90]	[5. Reference material due (C.1.e; C.3.c; Attachment 2)]	3/31/2008
{-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)	3/17/2008
{-70}	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	3/22/2008
{-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)	3/31/2008
-30	9. Preliminary license applications (NRC Form 398's) due (C.1.l; C.2.g; ES-202)	4/12/2008
-14	10. Final license applications due and Form ES-201-4 prepared (C.1.l; C.2.i; ES-202)	4/28/2008
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	4/28/2008
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g)	4/28/2008
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	5/5/2008
-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)	5/5/2008
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k)	5/19/2008
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	5/5/2008

* 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.

Facility: Date of Examination:

Item	Task Description	Initials a	Initials b*	Initials c#
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.			
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.			
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.			
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.			
2. SIMULATOR	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.			
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity, and ensure that each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s), and that scenarios will not be repeated on subsequent days.			
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.			
3. W/T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.			
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations			
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.			
4. GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.			
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.			
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.			
	d. Check for duplication and overlap among exam sections.			
	e. Check the entire exam for balance of coverage.			
	f. Assess whether the exam fits the appropriate job level (RO or SRO).			

	Printed Name/Signature	Date
a. Author	Darrell Hensley / Darrell Hensley	3/14/08
b. Facility Reviewer (*)	Donald W. LeGrand / Donald W. LeGrand	3/14/08
c. NRC Chief Examiner (#)	GERALD W. LASKA / Gerald W. Laska	3/25/08
d. NRC Supervisor		

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

SEE ATTACHED E-Mail & Forms

New Opest Outline Submitted

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

Facility: Date of Examination:

Item	Task Description	Initials a	b*	c#
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.			
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.			N/A
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.			N/A
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.			
2. SIMULATOR	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	DH	DWL	
	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.	DH	DWL	
	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.	DH	DWL	
3. W/T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.			N/A
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations			
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.			
4. GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.	DH	DWL	
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	DH	DWL	
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.		N/A	
	d. Check for duplication and overlap among exam sections.	DH	DWL	
	e. Check the entire exam for balance of coverage.		N/A	
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	DH	DWL	

	Printed Name/Signature	Date
a. Author	Darrell Hensley / Darrell Hensley	3/27/08
b. Facility Reviewer (*)	Donald W. LeGrand / Donald W. LeGrand	3/27/08
c. NRC Chief Examiner (#)	Gerard M. Cwick / Gerard M. Cwick	5/1/08
d. NRC Supervisor	MARCELLE T. WIDMANN / Marcelle T. Widmann	05/02/08

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

Original Form Was not Initialed by D. LeGrand - Initials obtained by Fac 5/1/2008

Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

June 11, 2008

10 CFR 55.40

Mr. Gerard W. Laska
U.S. Nuclear Regulatory Commission, Region II
Sam Nunn Atlanta Federal Center
61 Forsyth St., Suite 23T85
Atlanta, Georgia 30303-8931

Dear Mr. Laska:

In the Matter of the Tennessee Valley Authority	))	Docket No. 50-390

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - REACTOR AND SENIOR REACTOR OPERATOR INITIAL EXAMINATIONS - 05000390/2008301

TVA's letter dated June 6, 2008, submitted documentation related to the operator initial examinations to satisfy the requirements of Examination Standard (ES) 501, "Initial Post-Examination Activities," of NUREG 1021, "Operator Licensing Examination Standards for Power Reactors." Also in the June 6, 2008, letter, TVA indicated that the original Examination Security Agreement would be provided by June 30, 2008. Consistent with this, please find enclosed the completed original Examination Security Agreement. With the transmittal of this document, all required documentation associated with the examinations has been provided to NRC.

TVA's principal contact regarding the license examination is Don LeGrand, WBN Operations Training. Should you require additional information regarding this matter, please contact Mr. LeGrand at (423) 365-3858 or contact me at (423) 365-1824.

Sincerely,

M. K. Brandon
Manager, Site Licensing
and Industry Affairs

Enclosure
cc: Page 2

Enclosures
cc (w/o Enclosures):
NRC Resident Inspector
Watts Bar Nuclear Plant
1260 Nuclear Plant Road
Spring City, Tennessee 37381

ATTN: Patrick D. Milano, Project Manager
U.S. Nuclear Regulatory Commission
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
MS O-8H4
Washington, DC 20555-0001

U.S. Nuclear Regulatory Commission, Region II
ATTN: Mr. Malcolm Widmann
Chief, Operator Licensing and Human Performance Branch
Sam Nunn Atlanta Federal Center
61 Forsyth St., Suite 23T85
Atlanta, Georgia 30303

ENCLOSURE

Examination Security Agreement

Original Security Agreement w/FAX

ram - Watts Bar

Examination Security Agreement **Form ES-201-3**

ialized knowledge about the NRC licensing examinations scheduled for the week(s) of 5/12/08 as of the date
lowingly divulge any information about these examinations to any persons who have not been authorized by the
am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered
ate until completion of examination administration, except as specifically noted below and authorized by the NRC
or or communicator is acceptable if the individual does not select the training content or provide direct or indirect
he physical security measures and requirements (as documented in the facility licensee's procedures) and
s of this agreement may result in cancellation of the examinations and/or an enforcement action against me or
port to facility management or the NRC chief examiner any indications or suggestions that examination security

2. Post-Examination

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

	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1.	Darrell Hensley	Exam Project Manager	Darrell Hensley	1/04/08	Darrell Hensley	6/3/08
2.	Diane I Hughes	EXAM Developer		1/4/08		6/3/08
3.	Donald LeGrand	Exam Supervisors	Donald LeGrand	01/11/08		6/3/8
4.	William Boegly	Simulator Services		1/4/08		6/3/08
5.	P STINNETT	UO		1/16/08		6-4-8
6.	Michael A. Hay	SRO	matt	1-16-8	matt	6-4-8
7.	STEVE HEDRICK	SIMF		1-25-8		6/4/08
8.	Robert J Hunt	SIM	R J Hunt	1-25 8	R J Hunt	6-4-08
9.	Dale Hoffman	Sim Instr	Dale Hoffman	1-28-8	Dale Hoffman	6/3/08
10.	RORY L. WARREN	Reactor Engr. / RXE	Rory L Warren	2/20/08	Rory L Warren	6/10/08
11.	Steve Reininghaus	Contractor / Consultant		3/1/08		6/4/08
12.	JF Hill	UO		3/1/8		6-4-8
13.	RF Crews	SM		3/1/08		6-5-08
14.	JOYCE N. ADKINS	~~SRO~~		3/20/08		6/4/08
15.	HARVEY C. BARGER	UO	Harvey Craig Barger	3/20/08	Harvey Craig Barger	6/4/08

NOTES:

4/25/08

Page 1 of ~~2~~ 3

May 2008 ILT NRC Exam – Watts Bar

ES-201 | **Examination Security Agreement** | **Form ES-201-3**

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of May 12, 2008 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

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

	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	Thomas Jones	SQN Operations Inst.		2/12/08	SEE ATTACHED FAX		
2.	John B. Roden	SQN Operations Instr.		2/13/08	SEE ATTACHED FAX		
3.	Josh Bowman	WBNP SM		3/22/8		6-5-8	
4.	Vincent Sumner	WBN UO		3/22/08		6/5/08	
5.	Larry Dennis	WBN U.O.		4/1/08	Per telecon	6/5/08	DAH Operator on 8 day break
6.	Dennis Jones	WBN OPS INST		4/1/08		6/3/08	
7.	Robert Collins	WBN U.O		4/1/08		6-4-08	
8.	Chris Rico	WBN UO		04/01/08		06/08	
9.	Steven R Smith	WBN Ops Supt		4.1.08		6-3-08	
10.	B.P. Hunt	WBN SM		4/3/08		6/5/08	
11.	Kevin S. Elam	WBN RXE		4/16/08		6/5/08	
12.	William H. Horton	WBN OPS		4-21-8		6-4-8	
13.	Timothy Nagy	WBN OPS		4-21-8		6-4-8	
14.	S. Shaffer	Unit Manager/SM		4/22/8	Per Telecon	6-5-08	DAH Operator at SQN conducting interviews
15.	William Dimond	WBN INST		4-25-08		6-4-8	

NOTES:

DA 4/25/08

May 2003 ILT NRC Exam--
Watts Bar

ES-201 **Examination Security Agreement** **Form ES-201-3**

1. **Pre-Examination**

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of May 12, 2008 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 cancelation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. **Post-Examination**

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

	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1.	Thomas Jones	SQN Operations Instr.		4/12/08		6/4/08
2.	John B. Hoden	SQN Operations Instr.		4/12/08	John B Hoden	6/4/08
3.	Josh Bowman	WBNP SM		4/28/08		
4.	Vincent Sammons	WBN RO		3/20/08		
5.	Sonny Dennis	WBN U.O.		4/1/08		
6.	Dennis Jones	WBN OS INST		4/1/08		6/4/08
7.	Robert Collins	WBN S.O		4/1/08		6/4/08
8.	Chris Rico	WBN UO		04/01/08		6/4/08
9.	Steven K Smith	WBN OS Supt		4/1/08		6-3-08
10.	B.P. Hunt	WBN SM		4/2/08		
11.	Kevin S. Elam	WBN RE		4/15/08	Kevin Elam	6/5/08
12.	William A. Norton	WBN OTA		4-28-8		6-4-8
13.	[illegible]	WBNP PDS		4-21-8		6-4-8
14.	[illegible]	Unit Manager/Supt		4/22/8		6-4-8
15.	William Dimond	WBN ISE		4-25-8		6-4-8

NOTES:

OA 4/25/08

Page 2 of ~~2~~ 3

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 5/12/08 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of _____. 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.	Albert V. White	WBN Instructor	Albert V White	4-25-08	Albert V White	6-4-08	
2.	DANIEL W. BARKER	WBN INSTRUCTOR	D W Barker	4-29-08	D W Barker	6-4-08	
3.	Mary R. Shipe	WBN LEARN + DEV. REP	Mary R. Shipe	5/12/08	Mary R. Shipe	6/4/08	
4.	Ralph E. Schmoak	WBN - STA	R E Schmoak	5/12/08	R E Schmoak	6/5/8	
5.	STEVEN T HEDRICK	WBN SIMF	Steven Hedrick	5/12/08	Steven Hedrick	6/4/08	
6.	Mary Lynn Watson	Sequestor	Mary Lynn Watson	5/12/08	Per telecon	6/5/08	Individual left Watts Bar
7.	Rick A O'Rear	Sequestor	R O'Rear	5/12/08	R O'Rear	6/4/08	
8.	Clyde T. Benton	Instructor	Clyde T. Benton	5/12/08	Clyde T. Benton	6/3/08	
9.	Allen Wynn	Instruction	Allen Wynn	5/12/08	Per phone con - BAT	6/4/08	Individual left Watts Bar.
10.	Terry L. Newman	OPS Training Manager	Terry L Newman	5/12/08	Terry L Newman	6/5/08	
11.	Billy Johnson	OPS SRO/Unit Supervisor		5/27/08		6/5/8	
12.	J. Adam Newport	OPS Unit Operator	J. Adam Newport	5/27/8	J. Adam Newport	6/5/8	
13.							
14.							
15.							

SPM, sequestering ONLY *

NOTES:

3 of 3

* These 4 individuals have not been, and will not be exposed to any written exam materials

May 2008 ICT NRC Exam - Watts Bar

ES-201 | **Examination Security Agreement** | **Form ES-201-3**

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 5/12/08 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of _____. 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.	Darrell Hensley	Exam Project Manager	Darrell Hensley	1/04/08	Darrell Hensley	6/3/08
2.	Daniel Hughes	Exam Developer		1/4/08		6/3/08
3.	Donald LeGrand	Exam Supervisors	Donald LeGrand	01/4/08		6/3/8
4.	William Boeyly	Simulator Services		1/4/08		6/3/08
5.	PSTAVICH	UO		1/16/8		6-4-8
6.	Michael A. Hay	SRO	matt	1-16-8	matt	6.4.8
7.	STEVE HEDRICK	SIMF		1-25-8		6/4/08
8.	Robert J Hunt	SIM		1-25 8		6-4-08
9.	Dale Hoffman	Sim Instr		1-28-8		6/3/08
10.	ROBYL WARREN	Reactor Engr. / RXE		2/20/08		
11.	Steve Reininghaus	Contractor / Consultant		3/1/08		6/4/08
12.	JF Hill	UO		3/1/8		6-4-8
13.	RE Crews	SM		3/1/08		6-5-08
14.	Joyce N. Adkins	~~SRO~~ UO		3/20/08		6/4/08
15.	HARVEY C. BARGER	UO	Harvey Craig Barger	3/20/08	Harvey Craig Barger	6/4/08

NOTES:

4/25/08

Page 1 of ~~2~~ 3

May 2008 ILT NRC Exam-
Watts Bar

ES-201 **Examination Security Agreement** **Form ES-201-3**

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of May 12, 2008 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

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	Thomas Jones	SQN Operations Inst.		2/12/08	SEE ATTACHED FAX		
2.	John B. Roden	SQN Operations Instr.		2/13/08	SEE ATTACHED FAX		
3.	Josh Bowman	WBNP SM		3/22/8		6-5-8	
4.	Vincent Sumner	WBN UO		3/22/08		6/5/08	
5.	Danny Dennis	WBN U.O.		4/1/08	Per Telecon	6/5/08	DAH Operator on 8 day break
6.	Dennis Jones	WBN OPS INST		4/1/08		6/5/08	
7.	Robert Collins	WBN U.O		4/1/08		6-4-08	
8.	Chris Rice	WBN UO		04/01/08		06/08	
9.	Steven R Smith	WBN Ops Supt		4/1-08		6-3-08	
10.	B.P. Hunt	WBN SM		4/3/08		6/5/08	
11.	Kevin S. Elam	WBN RXE		4/16/08		6/5/08	
12.	William H. Horton	WBN OPS		4-21-8		6-4-8	
13.	Timothy A Cosby	WBN OPS		4-21-8		6-4-8	
14.	S. Shuper	Unit Manager/SM		4/22/8	Per Telecon	6-5-08	DAH Operator at SQN conducting interviews.
15.	William Simonds	WBN INST		4-25-08		6-4-8	

NOTES:

DA 4/25/08

Page 2 of ~~2~~ 3

FROM : SEQUOYAH OPERATOR TRAINING PHONE NO. : 423 843 4339 Jun. 04 2008 01:02PM P1 P.01/01 TOTAL P.01

May 2008 ILT NRC Exam - Watts Bar

ES-201 | **Examination Security Agreement** | **Form ES-201-3**

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of May 12, 2008 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 cancelation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

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

	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1.	Thomas Sams	SQN Operations Insp.		2/12/08		6/4/08
2.	John B. Loden	SQN Operations Insp.		2/12/08	John B Loden	6/4/08
3.	Josh Bowman	WBNP SM		3/20/08		
4.	Vincent Sumner	WBN RO		3/20/08		
5.	Jonny Dennis	WBN U.O.		4/1/08		
6.	Dennis Jones	WBN OS Instr		4/1/08		6/4/08
7.	Robert Collins	WBN U.O		4/1/08		6/4/08
8.	Chris Rico	WBN UO		04/01/08		6/4/08
9.	Steven K Smith	WBN Ops Supt		4/1/08		6-3-08
10.	B.P. Hunt	WBN SM		4/2/08		
11.	Kevin S. Elam	WBN RO/E		4/15/08	Kevin Elam	6/5/08
12.	William H. Norton	WBN OSS		4-28		6-4-8
13.	[illegible]	WBNP PM		4-25-8		6/4/8
14.	[illegible]	Unit Manager Ops		4/22/8		6/4/8
15.	William Simard	WBN UST		4-25-08		6-4-8

NOTES:

On 4/25/08

Page 2 of 3

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 5/12/08 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of _____. 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.	Albert V. White	WBN Instructor	Albert V White	4-25-08	Albert V White	6-4-08	
2.	DANIEL W. BARKER	WBN INSTRUCTOR	D W Barker	4-29-08	D W Barker	6-4-08	
3.	Mary R. Shipe	WBN LEARN + DEV. REP	Mary R. Shipe	5/12/08	Mary R. Shipe	6/4/08	
4.	Ralph E. Schmook	WBN - STA	R. Schmook	5/12/08	R Schmook	6/5/8	
5.	STEVEN T HEDRICK	WBN SIMF	Steve Hedrick	5/12/08	Steve Hedrick	6/4/08	
6.	Mary Lynn Watson	Mary Lynn White / Sequestor	Mary Lynn White	5/12/08	Per telecon	6/5/08	Individual left Watts Bar
7.	Rick A O'Rear	RO Rer Sequestor	RO Rer	5/12/08	RO Rer	6/4/08	
8.	Clyde T. Benton	Instructor	Clyde T. Benton	5/12/08	Clyde T. Benton	6/3/08	
9.	Allen WYNN	Instructor	Allen Wynn	6/12/08	Per phone con - Ltr	6/4/08 -	Individual left Watts Bar
10.	Terry L. Newman	OPS Training Manager	Terry L Newman	5/12/08	Terry L Newman	6/5/08	
11.	Billy Johnson	OPS SRO/unit Supervisor		5/27/08		6/5/8	
12.	J. Adam Newport	OPS Unit operator	J. Adam Newport	5/27/8	J. Adam Newport	6/5/8	
13.							
14.							
15.							

JPM, Scen, Sequestering ONLY *

NOTES:

3 of 3

* These 4 individuals have not been, and will

FINAL

Facility: **WATTS BAR**	Date of Examination: **May 2008**
Examination Level (circle one): **RO / SRO**	Operating Test Number **1**

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N	Hand calculation of Boric Acid & Primary Water integrator settings for a manual makeup to the VCT.
Conduct of Operations	N	Perform Shift Daily Surveillance Log Mode1
Equipment Control	N	Hand calculation of RCS water inventory balance 1-SI-68-32.
Radiation Control	M	Calculate radiation dose to perform job in an area with two possible access routes and determine if dose exceeds administrative limits.

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

* Type Codes & Criteria

(C)ontrol room, (S)imulator, or Class(R)oom
(D)irect from bank (≤ 3 for ROs;≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥1)
(P)revious 2 exams (≤ 1; randomly selected)

FINAL

Facility: **WATTS BAR**	Date of Examination: **May 2008**
Examination Level (circle one): **RO** / **SRO**	Operating Test Number **1**

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N	Hand calculation of Boric Acid & Primary Water integrator settings for a manual makeup to the VCT.
Conduct of Operations	N	Review and Evaluate Shift Daily Surveillance Log Mode1
Equipment Control	N	Hand calculation of RCS water inventory balance, 1-SI-68-32.
Radiation Control	M	Calculate radiation dose to perform job in an area with two possible access routes and determine if dose exceeds administrative limits.
Emergency Plan	M	Classify the event per the REP and determination of PAR, per EPIP 4.

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

* Type Codes & Criteria

(C)ontrol room, (S)imulator, or Class(R)oom
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥ 1)
(P)revious 2 exams (≤ 1; randomly selected)

FINAL

ES-301 **Control Room/In-Plant Systems Outline** **Form ES-301-2**

Facility: **Watts Bar**	Date of Examination: **May 2008**
Exam Level: **RO**	Operating Test No.: **1**

B.1 Control Room Systems@ (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

	System / JPM Title	Type Code*	Safety Function
a.	Synchronize Main Turbine to grid.	MLS	4S
b.	Manual makeup to VCT with failure of Primary Water to automatically stop.	MAS	1
c.	Transfer Containment Spray Suction to Containment Sump Per ES-1.3.	DS	5
d.	Raise Cold Leg Accumulator Level.	DENS	3
e.	Establish RCS Feed and Bleed per FR-H.1.	MALS	4P
f.	Calibrate Power Range Nuclear Instrumentation	MS	7
g.	Restore charging and letdown with failure of letdown temperature controller and letdown temperature divert valve.	NAS	2
h.	Place Upper Containment Purge in service.	NS	8

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

a.	Local S/G level control from Motor Driven AFW Pump.	DRE	4S
b.	1A-A Diesel Generator idle start for warmup.	DA	6
c.	Local emergency Control of 1-62-93 Charging Flow Control Valve	DRE	1

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

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

FINAL

ES-301 **Control Room/In-Plant Systems Outline** **Form ES-301-2**

Facility: **Watts Bar**	Date of Examination: **May 2008**
Exam Level: **SRO-I**	Operating Test No.: **1**

B.1 Control Room Systems@ (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

	System / JPM Title	Type Code*	Safety Function
a.	(Not required for SRO-I.)		
b.	Manual makeup to VCT with failure of Primary Water to automatically stop.	MAS	1
c.	Transfer Containment Spray Suction to Containment Sump Per ES-1.3.	DS	5
d.	Raise Cold Leg Accumulator Level.	DENS	3
e.	Establish RCS Feed and Bleed per FR-H.1.	MALS	4P
f.	Calibrate Power Range Nuclear Instrumentation	MS	7
g.	Restore charging and letdown with failure of letdown temperature controller and letdown temperature divert valve..	NAS	2
h.	Place Upper Containment Purge in service.	NS	8

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

a.	Local S/G level control from Motor Driven AFW Pump.	DRE	4S
b.	1A-A Diesel Generator idle start for warmup.	DA	6
c.	Local emergency Control of 1-62-93 Charging Flow Control Valve	DRE	1

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

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

FINAL

ES-301 **Control Room/In-Plant Systems Outline** **Form ES-301-2**

Facility: **Watts Bar**	Date of Examination: **May 2008**
Exam Level: **SRO-U**	Operating Test No.: **1**

B.1 Control Room Systems@ (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

	System / JPM Title	Type Code*	Safety Function
a.	(Not required for SRO-U.)		
b.	(Not required for SRO-U.)		
c.	(Not required for SRO-U.)		
d.	Raise Cold Leg Accumulator Level.	DENS	3
e.	Establish RCS Feed and Bleed per FR-H.1	MALS	4P
f.	(Not required for SRO-U.)		
g.	Restore charging and letdown with failure of letdown temperature controller and letdown temperature divert valve.	NAS	2
h.	(Not required for SRO-U.)		

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

a.	(Not required for SRO-U.)		
b.	1A-A Diesel Generator idle start for warmup.	DA	6
c.	Local emergency Control of 1-62-93 Charging Flow Control Valve	DRE	1

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

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

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

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).	DAH	DAH	
b. There is no day-to-day repetition between this and other operating tests to be administered during this examination.	DAH	DAH	
c. The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)	DAH	DAH	
d. Overlap with the written examination and between different parts of the operating test is within acceptable limits.	DAH	DAH	
e. It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	DAH	DAH	
2. Walk-Through Criteria	--	--	--
a. Each JPM includes the following, as applicable: • initial conditions • initiating cues • references and tools, including associated procedures • reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time-critical by the facility licensee • operationally important specific performance criteria that include: – detailed expected actions with exact criteria and nomenclature – system response and other examiner cues – statements describing important observations to be made by the applicant – criteria for successful completion of the task – identification of critical steps and their associated performance standards – restrictions on the sequence of steps, if applicable	DAH	DAH	
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.	DAH	DAH	
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.	DAH	DAH	

	Printed Name / Signature	Date
a. Author	Darrell Hensley / Darrell Hensley	4/4/08
b. Facility Reviewer(*)	Donald W. LeGrand / Donald W. LeGrand	4/4/08
c. NRC Chief Examiner (#)	GERALD W. LASICA / Gerald W. Lasica	5/1/2008
d. NRC Supervisor	MALCOLM T. WIDMANN / Malcolm T. Widmann	05/02/08

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

Bottom Block (For ES-301-4 NOT INITIALED on original - got initial on 5/1/2008 DAH

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).			
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.			
c.	The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)			
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.			
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.			
	2. Walk-Through Criteria	--	--	--
a.	Each JPM includes the following, as applicable: • initial conditions • initiating cues • references and tools, including associated procedures • reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time-critical by the facility licensee • operationally important specific performance criteria that include: – detailed expected actions with exact criteria and nomenclature – system response and other examiner cues – statements describing important observations to be made by the applicant – criteria for successful completion of the task – identification of critical steps and their associated performance standards – restrictions on the sequence of steps, if applicable			
b.	Ensure that any changes from the previously approved systems and administrative walk-through outlines (Forms ES-301-1 and 2) have not caused the test to deviate from any of the acceptance criteria (e.g., item distribution, bank use, repetition from the last 2 NRC examinations) specified on those forms and Form ES-201-2.			
	3. Simulator Criteria	--	--	--
The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.				

		Printed Name / Signature	Date
a.	Author	Darrell Hensley / Darrell Hensley	4/4/08
b.	Facility Reviewer(*)	Donald W. LeGrand / Donald W LeGrand	4/4/08
c.	NRC Chief Examiner (#)		
d.	NRC Supervisor		

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

SEE ATTACHED

Facility: Date of Exam: Scenario Numbers: / / Operating Test No.:

QUALITATIVE ATTRIBUTES		Initials		
		a	b*	c#
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.			
2.	The scenarios consist mostly of related events.			
3.	Each event description consists of • the point in the scenario when it is to be initiated • the malfunction(s) that are entered to initiate the event • the symptoms/cues that will be visible to the crew • the expected operator actions (by shift position) • the event termination point (if applicable)			
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.			
5.	The events are valid with regard to physics and thermodynamics.			
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.			
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.			
8.	The simulator modeling is not altered.			
9.	The scenarios have been validated. Pursuant to 10 CFR 55.46(d), any open simulator performance deficiencies or deviations from the referenced plant have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.			
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.5 of ES-301.			
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).			
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).			
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.			

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

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

Facility: Watts Bar	Date of Exam: May 2008	Operating Test No.:1

APPLICANT	EVENT TYPE	Scenarios - for **U1, I1, R1**												TOTAL	MINIMUM(*)		
		1			2			3									
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U
RO	RX	---					---							0	1	1	0
SRO-I	NOR	1					6							2	1	1	1
SRO-U **U1**	I/C	2,3,4,5, 6					1,4							7	4	4	2
	MAJ	7					5,7							3	2	2	1
	TS	3,4,5					---							3	0	2	2
RO	RX		1		---									1	1	1	0
SRO-I **I1**	NOR		---		6									1	1	1	1
SRO-U	I/C		2,4,5		1,3,4									6	4	4	2
	MAJ		7		5,7									3	2	2	1
	TS		---		1,3,5									3	0	2	2
RO **R1**	RX			---		6								1	1	1	0
SRO-I	NOR			1		---								1	1	1	1
SRO-U	I/C			3,6		2,3								4	4	4	2
	MAJ			7		5,7								3	2	2	1
	TS			---		---								0	0	2	2
RO	RX														1	1	0
SRO-I	NOR														1	1	1
SRO-U	I/C														4	4	2
	MAJ														2	2	1
	TS														0	2	2

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position.

2. Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.

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

Facility:	Watts Bar				Date of Exam:	May 2008					Operating Test No.:1							
APPLICANT	EVENT TYPE	Scenarios - for **I3, I2, R2, U2**																
		1			2			3						TOTAL	MINIMUM(*)			
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION							
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U	
RO	RX	---				6								1	1	1	0	
SRO-I **I3**	NOR	1				---								1	1	1	1	
SRO-U	I/C	2,3,4,5, 6				2,3								7	4	4	2	
	MAJ	7				5,7								3	2	2	1	
	TS	3,4,5				---								3	0	2	2	
RO	RX		1					---						1	1	1	0	
SRO-I **I2**	NOR		---					6						1	1	1	1	
SRO-U	I/C		2,4,5					1,3,4						6	4	4	2	
	MAJ		7					5,7						3	2	2	1	
	TS		---					1,3,5						3	0	2	2	
RO **R2**	RX			---					6					1	1	1	0	
SRO-I	NOR			1					---					1	1	1	1	
	I/C			3,6					2,3					4	4	4	2	
SRO-U	MAJ			7					5,7					3	2	2	1	
	TS			---					---					0	0	2	2	
RO	RX				---									0	1	1	0	
SRO-I	NOR				6									1	1	1	1	
	I/C				1,3,4									3	4	4	2	
SRO-U **U2**	MAJ				5,7									2	2	2	1	
	TS				1,3,5									3	0	2	2	

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position.

2. Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.

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

Facility: Watts Bar Date of Examination: May 08 Operating Test No.: 1

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

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

Instructions:

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

Facility: Watts Bar Date of Examination: May 08 Operating Test No.: 1

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

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

Instructions:

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

FINAL

ES-401 **PWR Examination Outline** **Form ES-401-2**

NRC Exam

Facility: **Watts Bar** Date of Exam: **May 2008** **RO**

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	2	1	5	N/A			3	4	N/A		3	18			
	2	1	3	2				1	1			1	9			
	Tier Totals	3	4	7				4	5			4	27			
2. Plant Systems	1	3	2	3	4	2	1	3	4	2	2	2	28			
	2	2	-	1	-	1	1	1	1	-	1	2	10			
	Tier Totals	5	2	4	4	3	2	4	5	2	3	4	38			
3. Generic Knowledge and Abilities		1			2			3			4		10	1	2	3	4
		3			2			2			3						

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/evolutions that are not included on the outline should be added. Refer to Section D.1.b of ES-401 for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. Refer to Section D.1.b of ES-401 for the applicable K/As.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

NRC Exam

ES-401	PWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 **(RO)**						Form ES-401-2		
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1			**01**				Reason for actions contained in EOP for reactor trip	4.0	1
000009 Small Break LOCA / 3		**03**					Interrelation between S/Gs and small break LOCA	3.0	1
000015/17 RCP Malfunctions / 4	**03**						Basis for reduced power with one RCP out of service	3.0	1
000022 Loss of Reactor Coolant Makeup / 2						**2.4.31**	Alarms, indications, and response procedures	4.2	1
000025 Loss of RHR System / 4			**02**				RHR low press piping isolation	3.3	1
000026 Loss of Component Cooling Water / 8				**02**			Monitor loads on CCW system from control room	3.2	1
000027 Pressurizer Pressure Control System Malfunction / 3					**02**		Normal values for RCS pressure	3.8	1
000038 Steam Gen. Tube Rupture / 3						**2.2.40**	Apply Tech Specs	3.4	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4					**02**		Adhere to procs and operate within limits of license	3.4	1
000055 Station Blackout / 6				**01**			Operate/monitor incore thermocouples	3.7	1
000057 Loss of Vital AC Elec. Inst. Bus / 6			**01**				Reasons for EOP actions	4.1	1
000058 Loss of DC Power / 6	**01**						Op imps of battery chrgr and instrumentation	2.8	1
000062 Loss of Nuclear Service Water / 4					**02**		Determine/interpret cause of SWS leak	2.9	1
000065 Loss of Instrument Air / 8			**04**				Reason for crossover to backup air supplies	3.0	1
W/E04 LOCA Outside Containment / 3			**03**				Manipulation of controls for desired results	3.8	1
W/E11 Loss of Emergency Coolant Recirc. / 4				**03**			Monitor for desired results	3.7	1
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4					**02**		Adhere to procs and operate within limits of license	3.7	1
000077 Generator Voltage and Electric Grid Disturbances / 6						**2.1.20**	Interpret and execute procedure steps	4.6	1
K/A Category Point Totals:	**2**	**1**	**5**	**3**	**4**	**3**	Group Point Total:		**18**

NRC Exam

ES-401 PWR Examination Outline Form ES-401-2
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO)

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000001 Continuous Rod Withdrawal / 1		01					Rod bank step counters	2.9	1
000028 Pressurizer Level Malfunction / 2	01						PZR reference leak abnormalities	2.8	1
000032 Loss of Source Range NI / 7		01					Power supplies, incl proper switch positions	2.7	1
000059 Accidental Liquid RadWaste Rel. / 9			01				Reasons for termination of a release	3.5	1
000067 Plant Fire On-site / 8				07			Operate/mon fire alarm reset panel	2.9	1
000069 (W/E14) Loss of CTMT Integrity / 5					01		Determine conditions and select procedures	3.3	1
000076 High Reactor Coolant Activity / 9						2.2.38	Conditions and limitations in facility license	3.6	1
W/EO1 & E02 Rediagnosis & SI Termination / 3			02				Procedures associated with SI Termination	3.3	1
W/E13 Steam Generator Over-pressure / 4		01					Component interlocks, failure modes, etc.	3.0	1
K/A Category Point Totals:	1	3	2	1	1	1	Group Point Total:		9

NRC Exam

ES-401	PWR Examination Outline Plant Systems- Tier 2/Group 1 (RO)											Form ES-401-2		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
003 Reactor Coolant Pump			04									Effect on RPS of RCP malf	3.9	1
004 Chemical and Volume Control				14								L/D tank bypass valve	2.8	1
005 Residual Heat Removal					09							Dilution/boration consider	3.2	1
006 Emergency Core Cooling						02						Eff. of core flood tanks malf	3.4	1
007 Pressurizer Relief/Quench Tank							02					Maintain PRT tank pressure	2.7	1
008 Component Cooling Water								02				High/low surge tank level	3.2	1
010 Pressurizer Pressure Control									01			Monitor during PORV test	3.0	1
	08											Cause/eff with PZR level	3.2	1
012 Reactor Protection											2.4.31	Alarms, response procs	4.2	1
013 Engineered Safety Features Actuation										02		Reset ESFAS channels	4.3	1
022 Containment Cooling									01			Monitor auto operation	4.1	1
025 Ice Condenser								05				Abnormal glycol tank level	2.5	1
026 Containment Spray							03					Containment sump level	3.5	1
039 Main and Reheat Steam					08							Steam removal eff on react	3.6	1
								03				Rad mon inds for SGTR	3.4	1
059 Main Feedwater				05								Control MFP speed	2.5	1
061 Auxiliary/Emergency Feedwater			02									AFW malf effect on S/G	4.2	1
062 AC Electrical Distribution		01										Power supp to system loads	3.3	1
063 DC Electrical Distribution	02											Cause/eff with AC system	2.7	1
064 Emergency Diesel Generator		02										Power supp to fuel oil pps	2.8	1
				05								Incomplete start relay	2.8	1
073 Process Radiation Monitoring			01									PRM malf eff on release	3.6	1
											2.4.35	Local AO tasks and effects	3.8	1
076 Service Water				03								CCW hx isolation valves	2.9	1
							02					Rx/turb bldg water temps	2.6	1
078 Instrument Air	01											Sensor air	2.8	1
103 Containment								05				Emergency entry	2.9	1
										09		Cont. vacuum system	3.1	1
K/A Category Point Totals:	3	2	3	4	2	1	3	4	2	2	2	Group Point Total:		28

NRC Exam

ES-401	PWR Examination Outline Plant Systems- Tier 2/Group 2 (RO)											Form ES-401-2		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
014 Rod Position Indication								**02**				Power loss to RPIS	3.1	1
028 Hydrogen Recombiner andPurge Control							**02**					Predict effect on cont pressure	3.4	1
033 Spent Fuel Pool Cooling											**2.2.36**	Effect of maint on LCO status	3.1	1
045 Main Turbine Generator					**17**							Effect on reactor of raising load	2.5	1
055 Condenser Air Removal											**2.4.3**	Identify post-accident instrument	3.7	1
056 Condensate	**03**											Cause/eff with MFW	2.6	1
068 Liquid Radwaste						**10**						Rad mon eff on on Liq Rad Sys	2.5	1
075 Circulating Water	**02**											Interface with radwaste discharge	2.9	1
079 Station Air										**01**		Cross-tie with IAS	2.7	1
086 Fire Protection			**01**									FPS malf eff on S/D capability eqp	2.7	1
K/A Category Point Totals:	**2**	--	**1**	--	**1**	**1**	**1**	**1**	--	**1**	**2**	Group Point Total:		**10**

ES-401 **Generic Knowledge and Abilities Outline (Tier 3)** **Form ES-401-3**

NRC EXAM

Facility: **Watts Bar** Date of Exam: **May 2008** **RO**

Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.5	Ability to use procedures related to staffing/overtime.	2.9	1		
	2.1.28	Purpose of major system components/controls	4.1	1		
	2.1.36	Procedures/limitations for core alterations	3.0	1		
	Subtotal			3		
2. Equipment Control	2.2.12	Knowledge of surveillance procedures	3.7	1		
	2.2.44	Interpret control room indications	4.2	1		
	Subtotal			2		
3. Radiation Control	2.3.7	Ability to comply with radiation work permits	3.5	1		
	2.3.14	Knowledge of radiation or contamination hazards	3.4	1		
	Subtotal			2		
4. Emergency Procedures / Plan	2.4.13	Knowledge of crew roles during EOP usage	4.0	1		
	2.4.37	Knowledge of lines of authority during E-plan.	3.0	1		
	2.4.42	Knowledge of emergency response facilities	2.6	1		
	Subtotal			3		
Tier 3 Point Total				10		

FINAL

ES-401 **PWR Examination Outline** **Form ES-401-2**

NRC EXAM

Facility: **Watts Bar** Date of Exam: **May 2008** **SRO**

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				N/A					N/A				3	3	6
	2													2	2	4
	Tier Totals													5	5	10
2. Plant Systems	1													3	2	5
	2													1	2	3
	Tier Totals													4	4	8
3. Generic Knowledge and Abilities		1		2		3		4						1	2	3	4	7
														2	1	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/evolutions that are not included on the outline should be added. Refer to Section D.1.b of ES-401 for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. Refer to Section D.1.b of ES-401 for the applicable K/As.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

NRC EXAM

ES-401	PWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (SRO)						Form ES-401-2	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1					5		Interpret reactor trip first-out indication	3.9	1
000022 Loss of Reactor Coolant Makeup / 2						2.1.7	Evaluate plant perf and make operational judgements	4.7	1
000025 Loss of RHR System / 4					1		Interpret running RHR pump amperage	2.9	1
000027 Pressurizer Pressure Control System Malfunction / 3						2.4.6	EOP mitigation strategies	4.7	1
000058 Loss of DC Power / 6					1		Determine loss of DC power has occurred/backups I/S	4.1	1
W/E11 Loss of Emergency Coolant Recirc. / 4						2.2.22	Knowledge of LCOs and safety limits	4.7	1
K/A Category Point Totals:	--	--	--	--	3	3	Group Point Total:		6

NRC EXAM

ES-401	PWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (SRO)						Form ES-401-2		
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000059 Accidental Liquid RadWaste Rel. / 9					~~3~~ 2	8	Misleading Rad Mon inds for accidental release	3.6	1
000068 (BW/A06) Control Room Evac. / 8						**2.4.8**	Use of abnormal procs in conj with EOPs	4.5	1
W/E13 Steam Generator Over-pressure / 4					**1**		Interpret conditions and select appr procedures	3.4	1
CE/A11; W/E08 RCS Overcooling - PTS / 4						**2.4.18**	Specific bases for EOPs	4.0	1
K/A Category Point Totals:	--	--	--	--	**2**	**2**	Group Point Total:		**4**

NRC EXAM

ES-401	PWR Examination Outline Plant Systems- Tier 2/Group 1 (SRO)											Form ES-401-2		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
003 Reactor Coolant Pump								**5**				Effect of VCT press	2.8	1
012 Reactor Protection											**2.2.44**	Verify system status	4.4	1
061 Auxiliary/Emergency Feedwater								**9**				Total loss of feedwater	**TBD	1
064 Emergency Diesel Generator											**2.2.37**	Determine operability	4.6	1
076 Service Water								**1**				Loss SWS	3.7	1
K/A Category Point Totals:	--	--	--	--	--	--	--	**3**	--	--	**2**	Group Point Total:		**5**

*** (TBD): Please note: Internal discussion with exam team members determined that the Importance Rating of K/A 061A2.09 is greater than 2.5. This discussion included the following points:

1. Safety significance of total loss of FW on Watts Bar Nuclear Plant operation and entry into Emergency Operating Procedures.
2. Recent industry operating experience related to total loss of feedwater.

NRC EXAM

ES-401 PWR Examination Outline Plant Systems- Tier 2/Group 2 (SRO) Form ES-401-2

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
011 Pressurizer Level Control											**2.1.32**	Limits and precautions	4.0	1
075 Circulating Water								**3**				Safety features	2.7	1
086 Fire Protection											**2.4.9**	Mitigation for low power	4.2	1
K/A Category Point Totals:	--	--	--	--	--	--	--	**1**	--	--	**2**	Group Point Total:		**3**

ES-401 Generic Knowledge and Abilities Outline (Tier 3) Form ES-401-3

NRC EXAM

Facility: **Watts Bar**		Date of Exam: **May 2008**				**SRO**
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.23	Perform system and integrated procedures all modes			4.4	1
	2.1.34	Knowledge of primary/secondary plant chemistry limits			3.5	1
	Subtotal					2
2. Equipment Control	2.2.40	Ability to apply Tech Specs for a system			4.7	1
	Subtotal					1
3. Radiation Control	2.3.6	Ability to approve release permits			3.8	1
	2.3.15	Knowledge of radiation monitoring equipment			3.1	1
	Subtotal					2
4. Emergency Procedures / Plan	2.4.23	Basis for prioritizing emergency procedures implementation			4.4	1
	2.4.29	Knowledge of the emergency plan			4.4	1
	Subtotal					2
Tier 3 Point Total						7

RO Examination		
Tier / Group	Randomly Selected K/A	Reason for Rejection
1/1	015/017 AK1.03	Watts Bar does not operate at a reduced power level with one RCP out of service. A new K/A (015/017AK1.04) was provided by the Chief Examiner.
1/1	000022 Category K2	Category K2 has no K/As with importance rating ≥ 2.5. Randomly selected Category G, with a randomly selected K/A of 2.4.31.
1/1	000058 Category K2	Category K2 has no K/As with importance rating ≥ 2.5. Randomly selected Category K1 with a randomly selected K/A of K1.01.
1/1	000062 Category K1	Category K1 contains no K/As. Randomly selected another category (K2). This category also contains no K/As. Continued random selection of categories and obtained Category A2, with a K/A of A2.02.
1/1	000065 Category K2	Category K2 has no K/As with importance rating ≥ 2.5. Randomly selected Category K3 with a randomly selected K/A of K3.04.
1/2	000076AA1.04	Failed fuel monitor not part of current design basis at Watts Bar. Since there were no other K/As in Category A1 with importance rating ≥ 2.5, selected another Category, obtaining Category Generic. Note: this Category re-selection was not entirely random, but was implemented in order to improve sampling balance in Category Generic, for Tier 1, Group 2. After selecting G Category, performed a random sample, and obtained G2.2.38.
2/1	005K5.04	Low importance rating (2.1). Randomly resampled and obtained 005K5.09.
2/1	039 Category K6	Category K6 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category K5.
2/1	078 Category K5	Category K5 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category K1.
2/1	103 Category K6	Category K6 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category A2.
2/1	026A1.05	Chemical additive tank for Cont. Spray not part of Watts Bar design. Randomly resampled remaining K/As in Category A1 and obtained A1.03.
2/2	033 Category K6	Category K6 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category A4.
2/2	033 Category A4	Category A4 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category G.
2/2	045K5.08	Low importance rating (1.8). Resampled and obtained K5.10. Resampled repeatedly (due to numerous low importance ratings) until obtaining K5.17.
2/2	055 Category K4.	Category K4 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category G.
2/2	056 Category K3	Category K3 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category A1.
2/2	056 Category A1	Category A1 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category K1.
2/2	068 Category K2	Category K2 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category K6.

2/2	075K1.05	Low importance rating (2.0). Resampled and obtained K1.02.
2/2	079 Category K2	Category K2 has only one K/A and it has a low importance rating (2.3). Resampled and obtained Category A1.
2/2	079 Category A1	Category A1 has no associated K/As. Resampled and obtained Category K5.
2/2	079 Category K5.	Category K5 has no K/As with importance rating $\geq$ 2.5. Resampled and obtained Category A4.
SRO Examination		
Tier / Group	Randomly Selected K/A	Reason for Rejection
3	2.1.28	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.1.3.
3	2.1.3	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.1.34.
3	2.4.37	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.4.31.
3	2.4.31	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.4.23.
1/1	000022 G2.1.28	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.1.7.
1/2	059AA2.03	A new K/A (059AA2.02) more conducive to an SRO only question was provided by the Chief Examiner.
2/2	011 G2.1.31	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.1.32.

RO Examination		
Tier / Group	Randomly Selected K/A	Reason for Rejection
1/1	000022 Category K2	Category K2 has no K/As with importance rating ≥ 2.5. Randomly selected Category G, with a randomly selected K/A of 2.4.31.
1/1	000058 Category K2	Category K2 has no K/As with importance rating ≥ 2.5. Randomly selected Category K1 with a randomly selected K/A of K1.01.
1/1	000062 Category K1	Category K1 contains no K/As. Randomly selected another category (K2). This category also contains no K/As. Continued random selection of categories and obtained Category A2, with a K/A of A2.02.
1/1	000065 Category K2	Category K2 has no K/As with importance rating ≥ 2.5. Randomly selected Category K3 with a randomly selected K/A of K3.04.
1/2	000076AA1.04	Failed fuel monitor not part of current design basis at Watts Bar. Since there were no other K/As in Category A1 with importance rating ≥ 2.5, selected another Category, obtaining Category Generic. Note: this Category re-selection was not entirely random, but was implemented in order to improve sampling balance in Category Generic, for Tier 1, Group 2. After selecting G Category, performed a random sample, and obtained G2.2.38.
2/1	005K5.04	Low importance rating (2.1). Randomly resampled and obtained 005K5.09.
2/1	039 Category K6	Category K6 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category K5.
2/1	078 Category K5	Category K5 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category K1.
2/1	103 Category K6	Category K6 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category A2.
2/1	026A1.05	Chemical additive tank for Cont. Spray not part of Watts Bar design. Randomly resampled remaining K/As in Category A1 and obtained A1.03.
2/2	033 Category K6	Category K6 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category A4.
2/2	033 Category A4	Category A4 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category G.
2/2	045K5.08	Low importance rating (1.8). Resampled and obtained K5.10. Resampled repeatedly (due to numerous low importance ratings) until obtaining K5.17.
2/2	055 Category K4.	Category K4 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category G.
2/2	056 Category K3	Category K3 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category A1.
2/2	056 Category A1	Category A1 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category K1.
2/2	068 Category K2	Category K2 has no K/As with importance rating ≥ 2.5. Randomly resampled and obtained Category K6.
2/2	075K1.05	Low importance rating (2.0). Resampled and obtained K1.02.
2/2	079 Category K2	Category K2 has only one K/A and it has a low importance rating (2.3). Resampled and obtained Category A1.

2/2	079 Category A1	Category A1 has no associated K/As. Resampled and obtained Category K5.
2/2	079 Category K5.	Category K5 has no K/As with importance rating ≥ 2.5. Resampled and obtained Category A4.
SRO Examination		
Tier / Group	Randomly Selected K/A	Reason for Rejection
3	2.1.28	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.1.3.
3	2.1.3	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.1.34.
3	2.4.37	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.4.31.
3	2.4.31	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.4.23.
1/1	000022 G2.1.28	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.1.7
2/2	011 G2.1.31	Not linked to 10 CFR 55.43. Randomly resampled and obtained 2.1.32.

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

Facility: Watts Bar Date of Exam: 06/03/08 Exam Level: RO ☒ SRO ☒

	Item Description	Initial a	Initial b*	Initial c#
1.	Questions and answers are technically accurate and applicable to the facility.	DH	TLN	
2.	a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	DH	TLN	
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401	DH	TLN	
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).	DH	TLN	
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 __ the licensee certifies that there is no duplication; or __ other (explain)	DH	TLN	
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: 24/1 Modified: 9/2 New: 42/22	DH	TLN
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: 32/6 C/A: 43/19	DH	TLN
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.	DH	TLN	
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.	DH	TLN	
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.	DH	TLN	
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.	DH	TLN	

	Printed Name / Signature	Date
a. Author	Darrell Hensley / Darrell Hensley	5/28/08
b. Facility Reviewer (*)	Terry L. Newman / Terry L. Newman	5/28/08
c. NRC Chief Examiner (#)	GORDON W. LASKA / Gordon W. Laska	5/29/08
d. NRC Regional Supervisor	MALCOLM T. WIDMANN / Malcolm T. Widmann	05/29/08

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.

FINAL

ES-401, Rev. 9 Watts Bar 2008-301 SRO Written Examination Review Worksheet **Form ES-401-9**

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

Instructions

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

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

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
76	H	3												E	007 EA2.05 Appears to match K/A. Does Watts Bar typically use the term "via"? If not try using "in accordance" with or "using" 1-SI-99-10B. Are these the only first outs or annunciators that will be of significance in this event? Appears to be SRO only. **NEW** **Changed to using instead of VIA. Question SAT 5/20/2008.**
77	H	2												E	022AG2.1.7 Appears to match K/A. In the second part of the question ..on the PER by … reactor engineering fits grammatically, but Management Review Committee does not. Maybe a "the" in front of management would work. **NEW** Added the to Management Review committee. **SAT 5/20/2008.**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
78	H	2	X	X									X	U	025AA2.01 Appears to match the K/A. Not SRO only. Stem Focus is giving the applicant a cue. And the mitigating strategy in accordance with GO-10. The other actions are in accordance with AOPI 14.0. The applicant need only know is what is happening to motor amps. This question can then be answered with only systems knowledge, making it an RO question. Need to reword stem. **NEW** **Removed several items from stem, appears to be SRO only knowledge. Changed distractors B and D. Changed all implements to enter. SAT 5/20/2008.**
79	H	2											X	U	027AG2.4.6 Appears to match K/A. Question is not SRO only. Knowledge of EOP immediate operator actions is RO knowledge, along with the entry conditions for FRP-S.1. Would AOP actions apply? Secure the RCP in that loop? **NEW** **Completely changed question, replaced it with a bank question, and them modified it. SAT 5/20/2008.**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
80	H	2										X	X	U	058AA2.01 Question does not appear to match K/A. A loss of DC has not occurred. Also may not be SRO only, although this information is listed in the T/S basis, it is typically system knowledge. (How long are the batteries supposed to last. With this K/A, we should be going into the loss of DC AOI, or something similar. **NEW** **Replaced Question with a new question. Need to add correct breaker ID.** **Otherwise SAT 5/20/2008.** **Made changes as requested. SAT 5/21/2008**
81	H	2										X		U	W/E11G2.2.22 Question does not appear to match K/A. Appears to be SRO only. There is not a loss of emergency coolant Recirc. in the question, only a possible loss of swapover capability. **NEW** **Replaced question with another new question. SAT 5/20/2008.**
82	F	2										X	X	U	059AA2.03 Question does not appear to match the K/A. The question really asks what is required if a normal release is interrupted. Need to attempt to cover the failure modes, symptoms and the cause of misleading indicators. This question is not SRO only also. This is the process for restarting a release. **NEW** **Gerry to select New K/A.059AA2.02** **Wrote new question SAT 5/22/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
83	H	2					X							E	068AG2.4.8 Question appears to match K/A. Appears to be SRO Only. It appears that the correct answer (D) Does not allow any actions from the EOP (as answer is written). Are we sure that entry into the EOPs are NOT allowed. The terminology in distractor C states that the AOP and EOP will be entered and that the EOP takes precedence, but in D it appears that no actions of the EOP are allowed. I just want to make sure this is correct. Also is there an EOP that would be used in conjunction with the AOI? **BANK** **Rewrite question using AOI-27** **Keep same K/A. Completely rewrote question SAT 5/21/2008**
84	H	2												S	W/E13 EA2.1 Question appears to match K/A. Question appears to be SRO only. Distractor analysis is incorrect on a and b. The transition to H.3 is directed on H.2. Otherwise SAT **NEW** **SAT 5/20/2008.**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
85	H	3		X										U	W/E08 G2.4.18 Question borderline on matching K/A. Appears to be SRO only. It does contain the basis for one step, but it also tests transitions. Teaching in stem, both the step listed is considered teaching, and the flow path in stem E-1 to Z.1 to P.1. This needs to be addressed. **NEW** **Tabled (C and D distractors need work to be more plausible. 5/20/2008.** **Replaced distractors C and D** **SAT 5/22/2008**
86	H	2				X							X	U	003A2.05 Question matches K/A in a backwards logic method. Not SRO only. Why would you leave the other pumps off if all of their criteria were sat. A and C distractors not credible. **NEW** **Still needs work. 5/20/2008. Made changes as requested.** **SAT 5/21/2008**
87	H	2											X	U	012G2.2.44 Question appears to match K/A. Is not SRO only, this question can be answered using systems knowledge. 1) What is the power supply to the MFRVs. 2) What happens when the RT breakers loose power? (UV coils drop out and breaker opens). This question may be complicated, but can still be answered using only systems knowledge. **NEW** **Rewrote question appears to be SAT 5/20/2008.**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
88	H	2												S	061A2.09 Question appears to match K/A. Appears to be SRO only SAT. **NEW**
89	H	2												U	064G2.2.37 Question appears to match K/A. Appears to be SRO only. It appears by reading your distractor analysis that A is the correct answer, however the analysis states that D is the correct answer. Need to ensure that this reference will not answer any questions on the other SRO questions, or the RO questions. This reference can not allow the applicants to rule out other distractors on any of these questions. This question is Unsat until the correct answer is determined. **NEW** **A was correct, but with further investigation the term available is not applicable for TS. Need to rework question to work availability into answer.** **5/20/2008.** **Work in progress appears to be a good start.** **Question SAT 5/22/2008**
90	H	2									X			U	076A2.01 Kind of meets K/A. Although the PSA risk assessment is high level, and would not be considered until after the mitigating actions are completed. It appears in the distractor analysis that the question may not be technically correct, analysis for B states: plausible since crosstie is done for various other situations, but not this one. Yet, this is the correct answer listed in D. this question will be listed as Unsat until the technical issues are addressed. May want to move the PSA risk

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
															statement to the second part of the answer. **NEW** **Got second opinion for FJE .Changed as requested, also changed B D/G to A D/G. Some distractor analysis otherwise SAT.**
91	H	2				X								U	011G2.1.32 Question appears to match K/A. Appears to be SRO only. Distractors B and C are not credible. Why would any one pick Condition C (Completion time of condition B not met) if condition B was not the statement of concern? The distractor analysis does not match the actual distractors. I believe that D is the correct answer. I also don't believe that there is a procedure for preventing a lockout on low pressurizer level and heater shutoff. I believe that there are actions that would help prevent level from getting that low and maintain the heaters energized. This question needs a lot of work. And with two non plausible distractors is Unsat. **NEW upon further review, the K/A is not being met. Continue to work.** **5/20/2008.** **Made changes to all distractors using reasons. SAT 5/21/2008**
92	F	2											X	U	075A2.03 Question appears to match K/A. Is not SRO only. Understanding how the water box delta T responds to the dumps being closed and procedure entry requirements are RO knowledge. Unsat **NEW Made changes to add notifications to make**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
															SRO only. SAT 5/20/2008.
93	H	2				X								U	086G2.4.9 Good attempt at matching a tough K/A. Appears to be SRO only. Do you have procedure direction to cross connect SFP cooling and RHR systems to keep the core cooled? If so, under what conditions would this lineup be allowed? If not, distractors B and D are not credible. **NEW** **Licensee does have a procedure that allows the cross connect between the SFP and RHR.** **SAT 5/20/2008.**
94	F	2				X								E	G2.1.23 Question appears to match K/A. Appears to be SRO only. Distractor B is not plausible as written the Spent fuel pool is full of irradiated assemblies. So why would anyone pick this one? **NEW** **To be fixed on 5/21/2008** **Made changes to question SAT 5/21/2008**
95	F	2												S	G2.1.34 Question appears to match K/A. Appears to be SRO only. **NEW SAT 5/20/2008.**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
96	F	2											X	U	G2.2.40 Question appears to match K/A. Is not SRO only. This is a less than 1 hour technical specification and is required knowledge of ROs. Need to change to a topic that is greater than one hour. This question has been on several RO exams. **Replaced with a NEW question. SAT 5/20/2008.**
97	F	2												S	G2.3.6 Question appears to match K/A. Appears to be SRO only. SAT **NEW** **SAT 5/20/2008.**
98	F	2												E	G2.3.15 Question appears to match K/A. Appears to be SRO only. Remove the Since from distractors B and C. Use RM-90-102 output will be blocked during the source check: the SRO will …Does this monitor start a particular train if so which one? This should also be listed (i.e. B train ABGTS will be inoperable.) **NEW** **Ask Phil to get a second opinion. (ABGTS autostarts)** **Question Okay SAT 5/22/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
99	H	2												U	G2.4.23 Question appears to match K/A. It is NOT SRO only. Entry conditions for ECA 0.0 are RO knowledge, Immediate actions are RO knowledge, and the notes prior to the immediate action steps are RO knowledge (they apply). **BANK** **Rewrite using SGTR and FR P.1 entry or not. SAT 5/20/2008. question rewritten question SAT 5/21/2008.**
100	H	2				X								E	G2.4.29 Question appears to match the K/A. Appears to be SRO only. Distractor D is not plausible. If you declare any event you must report within 1 hour. Therefore no one will choose D. **NEW** **Changed times to be 1 hour and 15 minutes. SAT 5/20/2008.**

4 Sats **15 Unsats** **6 Enhancement**

FINAL

ES-401, Rev. 9 Watts Bar 2008-301 RO **Written Examination Review Worksheet** **Form ES-401-9**

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

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

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

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
1	H	2												S	007 EK3.01Question appears to match K/A. **NEW**
2	H	2												S	009EK2.03 Question appears to match K/A. **NEW**
3	H	2				X								U	015/017AK1.03 Question appears to match K/A. Distractors B and D are not plausible. 10% power may be the power required to allow entry to inside the polar crane wall, but there is nothing that states entry is required. Also, distractors C and D are subsets of A and B. A and B also lower power to less than 10%. This question needs some work, **NEW** **Gerry to Select new K/A. (5/21)** **015AK1.0 (5,2,4)**
4	H	2												S	022G2.4.31 Question appears to match K/A. SAT. Consider adding "assume no operator action" **NEW** **SAT 5/21/2008**
5	H	2				X								U	025AK3.02 Question kind of matches K/A. Distractors C and D do not appear to be plausible. How does stopping one or two CCPs ensure that a relief path is provided? The whole upper portion of the stem could be covered up and the question started with Section 3.4… and that would make it a memory level question. **NEW** **Completely changed the question SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
6	H	1				X								U	026AA1.02 Question kind of matches the K/A. Very little discriminatory value. The first portion of the stem could be removed it is just window dressing. It could also be asked which one of the following is the setpoint for isolating the sample heat exchanger? The question is only monitoring one load. Try giving the alarm and state what would have happened or something like that. Distractors a and d are not really credible. **NEW** **Replaced Question SAT 5/21/2008**
7	F	2	X											U	027AA2.02 Question appears to match K/A. Distractor analysis appears to be incorrect. One set of analysis states that the Reactor trip for an SI will maintain subcooling and one states that the trip will occur from the RPS. It seems like this question was modified from one at 5% reactor power. You have it listed as **NEW**. I believe the trip will ensure that DNB does not occur, but if pressure continues to fall subcooling will be lost with the reactor critical or not. Are we sure that the reason for the trip is to maintain subcooling? **MODIFIED?** **After discussion, changed subcooling to DNB, question appears to be SAT 5/21/2008**
8	H	2					X							S	038G2.2.40 Question appears to match the K/A. Appears to be SAT. **NEW** **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
9	H	2				X								U	040 (W/E12) EA2.2 Question appears to match K/A. The reference material that you included with the question refers to E-2 not ECA-2.1. However I checked ECA-2.1 and the actions appeared to be the same, except in ECA-2.1 it had the steps performed on 1 SG at a time. Does this need to be included in the question? Why would someone think the amber light indicates that a valve is closed? Does an amber light ever indicate that a valve is closed at this plant? This would make the two distractors not plausible **NEW** **Changed Question SAT 5/21/2008.**
10	H	1		X										U	055EA1.01 Question does not meet the K/A. This question is asking why they are monitored. It does not determine the ability of the operator to monitor them during a station blackout. This question needs to be re-written or replaced. **NEW** **Replaced Question SAT 5/21/2008.**
11	H	2										X		U	057AK3.01 Question does not match K/A. The K/A states: Knowledge of the reasons for the following responses…Reasons need to be included in the responses. **NEW** **Added reasons for actions SAT 5/21/2008.**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
12	H	2												?	058AK1.01 Question appears to match K/A. Do you typically test on Unit II components? Does Unit II have any vital loads? If not why are we testing on battery IV? If this battery has some purpose and effect unit one operation it may be okay. We need to discuss this. **NEW** **(Second opinion by FJE)** **Changed Diesel to 2B-B. This changed the answer to A. SAT 5/21/2008**
13	H	2												S	062AA2.02 Question appears to match K/A. For easier reading may want to move 1A from the distractor up into the stem. Otherwise. SAT **BANK** **SAT 5/21/2008**
14	F	2												S	065AK3.03 Question appears to match K/A. This question could have been asked at a higher cognitive level. SAT **NEW** **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
15	H	2									X			U	W/E04EK3.3 Question does not match K/A. The K/A asks for reasons. No reasons are listed in the distractors. Need to develop a question covering reasons for actions. For example, why are the valves in ECA 1-2 checked in the order that they are checked in? (Largest leak probabilities. can be checked from the control room etc.) **BANK** **Changed stem and distractor C. SAT 5/21/2008**
16	F	2												S	W/E11EA1.3 Question appears to match K/A. SAT **NEW** **SAT 5/21/2008**
17	F	2				X								U	W/E05EA2.2 Kind of matches K/A. Distractors A and C are essentially the same thing (thermal shock and damage to some S/G component). Distractor D (the correct answer) assumes a failure of HHSI. If this is assumed why can an applicant not assume improper operation of the primary PORVs, which would make B correct. The reference that you provided with the question does not support the correct answer. Unsat. **BANK** **Changed distractors, and order SAT 5/21/2008.**
18	F	2												S	077G2.1.20 Question appears to match K/A. SAT **NEW** **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
19	H	2				X						X		U	001AK2.01 Question does not meet the K/A. The question meets the first part, but is nothing more than rods insert/withdraw and how fast they will move. Need to attempt to match the K/A with something about the step counters for example will indicate the same as DRPI Or IRPI, or with x steps of DRPI etcetera. Distractors b and d not credible. This is manual speed of the shutdown banks. If you are going to use the speed of manual it should at least be what is capable of the control banks. **BANK** **(Second opinion by FJE)** **Changed stem and choices SAT 5/21/2008**
20	H	2												S	028AK1.01 Question appears to match K/A. SAT Need a copy of original question to determine if it is modified as listed. **MODIFIED** **SAT 5/21/2008**
21	H	2				X								E	032AK2.01 Question appears to match K/A. Distractor C is not credible. Why would the Rector trip if the channel is in bypass and not trip in normal. This does not make sense. Distractor analysis for A, B, and C are not correct. Question is listed as an enhancement, but need to determine another distractor C prior to allowing on exam. **BANK** Changed the stem and distractors. **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
22	F	2												S	Question appears to match K/A. SAT **NEW** **SAT 5/21/2008**
23	H	2												?	067AA1.07 Question loosely matches K/A. If convinced that the question meets the K/A. then question is SAT. The K/A asks for resetting the fire alarm Panel. This question asks for when the fire alarm (similar to an evacuation alarm and controlled from the control room) can be reset. I believe that resetting the local panel in accordance with SOI-13.01 section 6.2 is what the K/A is asking for. Will discuss. **NEW** **Will rewrite Question 5/21/2008.** **Question rewritten** **SAT 5/22/2008**
24	H	2												S	069(W/E14)EA2.1 Question appears to match K/A. SAT **BANK** **SAT 5/21/2008**
25	F	2												E	076G2.2.38 Question meets K/A. Suggest changing stem to read …RCS specific activity allowed without exceeding the TS limit. **BANK** **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
26	F	1				X								U	W/E02EK3.2 Question appears to match K/A. Low discriminatory value. Distractor B and D do not appear to be plausible. B would be more plausible if it stated to confirm a secondary heat sink was required. Why would you secure RCPs if you were in SI termination? These need some work. **BANK** Changed distractors as requested. **SAT 5/21/2008**
27	F	2				X								U	W/E13EK2.1 Question appears to match K/A. Not sure if distractors A and B are plausible. I will get a second opinion. I don't think a reference is required. Will discuss. **BANK** **Replaced Question SAT 5/21/2008**
28	F	2												E	003K3.04 Question appears to match K/A. Stem should state will cause a reactor trip signal. B distractor does not seem plausible. **BANK** **Rewrote question SAT 5/21/2008**
29	F	1												S	004K4.14 Question kind of matches K/A. This question is similar in topic to #4. Not very discriminating. Will discuss. **BANK** **Revise to take out alarm aspect. 5/21/2008.** **Revised will look at later.**
30	H	2												S	005K5.09 Question appears to match K/A. SAT **NEW (Need to ensure this is a requirement as stated in stem)** **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
31	H	1				X								U	006K6.02 Question appears to match K/A. Distractor A is not plausible. Three of the CLAs are enough to flood up to the lower core plate (they do not actually cover the core) So A should state: remains capable, since the contents of two operable CLAs is all that is required to provide an adequate inventory of borated water to meet the… Distractors C and/or D as written are not plausible in that should an applicant remember the TS values, and both of these are outside the value, and both can't be correct, then neither would be correct and therefore would not choose either. **NEW** **Replaced Question with a new question.** **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
32	H	1				X								U	007A1.02 Question appears to match K/A. Distractors A, C and D are not plausible. There is not a PRT on any Westinghouse plant that has a vent that automatically opens to lower pressure (that is one reason they have a rupture disk). Normal level in most Westinghouse PRTs is about 75% to allow for quenching the exhaust from a relief that has listed so why would anyone believe that A is plausible. Also B is the only distractor that has an alarm that will annunciate (just happens to be at the correct setpoint, so as written all the applicant need remember is the setpoint. **NEW** **Rewrote Question. SAT 5/21/2008**
33	H	2												E	008A2.02 Question appears to match K/A. Distractor A is not plausible. Replace distractor. **BANK** Replaced distractor as requested. **SAT 5/21/2008**
34	H	2												S	010A3.01 Question appears to match the K/A. SAT **NEW** **SAT 5/21/2008**
35	H	2												S	010K1.08 Question appears to match the K/A. SAT **NEW** (need to say just pressurizer control system in stem or the second half of the distractors are not applicable). Added Pressurizer Pressure/Level Control. **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
36	H	2										X		U	012G2.4.31 Question does not meet the K/A. The K/A is for the reactor protection system, and the correct answer on this question is an ESF function. **NEW** **Replaced Question. SAT 5/21/2008**
37	H	2				X								E	013A4.02 Question appears to match K/A. Can the Hi-Hi containment pressure main steam isolation signal ever be blocked? If not distractors A and B are not plausible. **NEW** **Rewrote Question. SAT 5/21/2008**
38	F	2												S	022A3.01 Question appears to match the K/A. SAT **NEW** **SAT 5/21/2008**
39	H	2												S	025A2.05 Question appears to match K/A. SAT **NEW** **SAT 5/21/2008**
40	F	2												S*	026A1.03 Question appears to match K/A. *Question is very similar to #16. May have to replace one of them (otherwise SAT) **NEW** **SAT 5/21/2008**
41	H	2												S	039K5.08 Question appears to match K/A. SAT **Modified** (need to see original question to verify that it is modified. **SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
42	H	2				X								U	039A2.03 Question appears to match K/A. Not sure that the second part of distractors Band D are plausible. **NEW** **Removed second parts of B and D SAT 5/21/2008**
43	H	2				X								U	059K4.05 Question appears to match K/A. Distractor D is not plausible; it is the only one with the FRV initially going open. Distractor Bs reason is not plausible. Also in two of the distractors FW is used and the other two feedwater is used. Need to be consistent. **BANK** Rewrote distractors. **SAT 5/21/2008**
44	H	2												S	061K3.02 Question appears to match K/A. SAT **BANK** **SAT 5/21/2008**
45	F	2												S	062K2.01 Question appears to match K/A. The drawing that were provided were for the 1A Hotwell pump (instead of 1B), and 1A#3 Heater Drain Pump (instead of 1B#3 heater drain pump). Otherwise SAT. **NEW** **SAT 5/21/2008**
46	H	2												E	063K1.02 Question appears to match the K/A. Distractor D is not plausible, why would anyone think that the breaker could not be tripped mechanically? **BANK** **Changed distractor D. SAT 5/21/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
47	F													S	064K2.02 Question appears to match K/A. (again we are testing U2 power supplies, do these supply anything on U2? Are they still covered by TS, and will they have an impact on U1?) **NEW** **SAT 5/21/2008**
48	H	2												S	064K4.05 Question appears to match K/A. Distractor analysis for C does not appear to be correct. Otherwise SAT **BANK** **Verify that D is not Correct. SAT 5/21/2008**
49	F	2												E	073K3.01 Question appears to match K/A. Would this monitor ever get a high alarm if flow through it were lost? If not (unless background got to the setpoint). D could be a correct answer. Need to investigate. **BANK** **Changed distractor D. SAT 5/21/2008**
50	F	2												S	073G2.4.35 Question appears to match K/A. SAT **NEW** **Changed stem. SAT 5/21/2008**
51	F	2												E	076K4.03 Question appears to match K/A. Remove the part of the stem that states you are the CRO. Which one of the following describes the required positions for the listed ERCW valves IAW E-0 Appendix A Equipment Verification? (Does FCV-67-144 have a position A? if so the throttled distractors should be opened to position A also. What does position B do? **BANK**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
															SAT 5/21/2008
52	H	2												S	076A1.02 Question appears to match K/A. SAT **NEW** **Changed to 1B CCP. SAT 5/21/2008**
53	H	2												S	078K1.01 Question appears to match K/A. SAT **NEW** **SAT 5/21/2008**
54	F	2										X		U	103A2.05 Question does not meet K/A as written. The question addresses the impacts of the malfunction. But does not address use procedures to correct, control or mitigate the consequences, during and emergency entry. What action will allow operation to continue? Etc. this is what needs to be covered. This question as written is also at the fundamental level it requires memory of T/S. **NEW** **Replaced question SAT 5/21/2008.**
55	H	2												S	103A4.09 Question appears to match K/A. SAT **NEW** **SAT 5/21/2008**
56	H	2		X										U	014A2.02 Question appears to match K/A. Teaching in stem, by informing the applicant that one CERPI display is dark. Allow the applicant to diagnose. Remove the last bullet. Change the stem to read: Which one of the following describes the impact on RPI, and what is required for…? **NEW**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
															Changed question as requested. SAT 5/21/2008
57	F	2												E	028A1.02 Question appears to match K/A. Is the second value in the question the design limit of H2 for a design basis LOCA, if so, why would anyone ever have to sample for H2, Just put the recombiner in service. I believe this to be the value that would be acceptable to place the recombiner in service. Explain. The SOI you included states 5% is the limit for placing a recombiner in service. **NEW** **Changed Stem SAT 5/21/2008**
58	H	1.5												S	033G2.2.36 Question appears to match K/A. Distractor analysis for A in incorrect. Very little discriminatory value. Otherwise SAT **NEW** **Verify Power supplies, made changes to make question easier to read. SAT 5/21/2008**
59	H	2												S	045K5.17 Question appears to match K/A. SAT **BANK**
60	F	2												S	055G2.4.3 Question appears to match K/A. SAT **NEW** **Changed all distractors to shorten them (moved items into stem)** **SAT 5/22/2008**
61	F	2												E	056K1.03 Question appears to match K/A. Can the unit be at 100% power on only 1 MFP? If both MFPs are required for 100% power, then remove the second bullet. As written distractor A is not plausible.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
															NEW **Made changes to stem SAT 5/22/2008**
62	H	2												S	068K6.10 Question appears to match K/A. SAT **NEW** **SAT 5/22/2008**
63	F	2												U	075K1.02 Question appears to match K/A. Distractors A and B do not appear to be plausible. Need to find either two other distractors or another way of using C and D. C, along with something wrong, and C along with something right. Etc. **BANK** **Added directly to stem. SAT 5/22/2008**
64	H	2												S	079A4.01 Question appears to match K/A. SAT **BANK** **SAT 5/22/2008**
65	H	2												S	086K3.01 Question appears to match K/A. SAT Modified Need to see original question. Reference is okay as long as it does not answer any other questions or cause distractors to be eliminated on either the RO or SRO exam. **MODIFIED** **SAT 5/22/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
66	H	2												E	G2.1.5 Question appears to match K/A. Why do you state that two SRO are required in the stem? Operator should know the shift staffing requirements for licensed individuals. Remove the in addition to the two licensed SROs from the stem and add it to the choices. Need to see the original question that was modified. This is also very similar to Admin JPM. **MODIFIED** **Changed distractors, SAT 5/22/2008**
67	F	2												S	G2.1.28 Question appears to match K/A. SAT **BANK** **SAT 5/22/2008**
68	F	2												S	G2.1.36 Question appears to match K/A. SAT Need to see the original question that was modified. **MODIFIED** **SAT 5/22/2008**
69	F	2												E	G2.2.12 Question appears to match K/A. Need to make sure the SR statement will not aid answering any of the SRO questions. Need to add every to the SR statement and every 12 hours thereafter. **BANK** **Made changes as requested. SAT 5/22/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
70	H	2				X								U	G2.2.24 Question appears to match K/A. Distractor C and D are not credible. I do not know of a Westinghouse plant where the AFW FCV fail closed. Need to replace these distractors. **NEW** **This was performed on a JPM.** **Change Question. New Question required 5/22/2008**
71	F	2												E	G2.3.7 Question appears to match K/A. Change distractor A to read 100mr. Also D distractor analysis is missing total expected dose is greater than…This should be added to distractor D. area where total expected dose is greater than 5 mrem. **NEW** **Ensure correct RCI is reference and that D is actually incorrect. 5/22/2008**
72	F	2				X								U	G2.3.14 Question appears to match K/A. Distractors A and C not plausible. It appears that the pressurization unit is already running, so let the action for A and C be "Start the MCR emergency Pressurization Fans" **NEW** **Upon further discussion agreed to leave question as is.** **SAT 5/22/2008**
73	F	2												S	G2.4.13 Question appears to match K/A. SAT **BANK** **SAT 5/22/2008**

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/ S	Explanation
74	F	2												S	G2.4.37 Question appears to match K/A. SAT **BANK** **SAT 5/22/2008**
75	F	2												S	G2.4.42 Question appears to match K/A. SAT **NEW** **SAT 5/22/2008**

38 Sats **21 Unsats** **12Enhancement** **3?**

Facility: WATTS BAR Date of Exam: JUNE 03, 2008 Exam Level: RO [X] SRO [X]

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

	Printed Name/Signature	Date
a. Grader	Craig KONITZ /	8/16/2008
b. Facility Reviewer(*)	N/A (SEE OTHER SHEET)	
c. NRC Chief Examiner (*)	Gerard LASKA /	8/06/2008
d. NRC Supervisor (*)	MALCOLM T. WIDMANN /	10/16/08

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