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

Facility: **Oconee Nuclear Station** Date of Examination: **10/25/2010**

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

Target Date*	Task Description (Reference)	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a and b)	rfa
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	rfa
-120	3. Facility contact briefed on security and other requirements (C.2.c)	rfa
-120	4. Corporate notification letter sent (C.2.d)	rfa
[-90]	[5. Reference material due (C.1.e; C.3.c; Attachment 3)]	rfa
{-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)	rfa
{-70}	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	rfa
{-45}	8. Proposed examinations (including written, walk-through JPMs, and scenarios, as applicable), supporting documentation (including Forms ES-301-3, ES-301-4, ES-301-5, ES-301-6, and ES-401-6, and any Form ES-201-3 updates), and reference materials due (C.1.e, f, g and h; C.3.d)	rfa
-30	9. Preliminary license applications (NRC Form 398's) due (C.1.l; C.2.g; ES-202)	
-14	10. Final license applications due and Form ES-201-4 prepared (C.1.l; C.2.i; ES-202)	
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g)	
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	
-7	14. Final applications reviewed; 1 or 2 (if >10) applications audited to confirm qualifications / eligibility; and examination approval and waiver letters sent (C.2.i; Attachment 5; ES-202, C.2.e; ES-204)	
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k)	
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	

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

Facility: **OCONEE** Date of Examination: **10/25/10**

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	Phillip G. Capehart / Clifford P. Witherspoon	8/12/10
b. Facility Reviewer (*)	Gabriel WASHBURN /	8/12/10
c. NRC Chief Examiner (#)	Ronald F. Aiello /	8/24/10
d. NRC Supervisor	Malcolm Widmann /	08/24/10

* will verify during prep week

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

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

WRITTEN

Facility: OCONEE Date of Examination: 2010-302

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

	Printed Name/Signature	Date
a. Author	MICHAEL MEEKS / Michael Meeks	03/26/2010
b. Facility Reviewer (*)	[illegible]	5/26/10
c. NRC Chief Examiner (#)	RON RICHO /	5/26/10
d. NRC Supervisor	MALCOLM T. WIDMANN /	06/29/10

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

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 **10/25/2010** as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of **10/25/2010**. 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.	DENNIS PARHAM	MAINT. TEC	Dennis Parham	8-26-10	Dennis Parham	11-10-10
2.	Daniel E Strawderman	CR SRO		8-26-10		11-5-10
3.	Robert M Helms	CR SRO	Robert M Helms	8-27-10		11-3-10
4.	RICHARD LONG	INSTRUCTOR LIT		8-29-10		
5.	David Shepardel			9-2-10		11-22-10
6.	Sheila Pittman	Sr. Systems Programmer		9-3-10	Sheila Pittman Per Email	11-22-10
7.	Diane Bowen	admin Spec	Diane Bowen	9-14-10	Diane Bowen	11/15/10
8.	DAVID RATHBONE	CR SRO	David Rathbone	9-22-10	David Rathbone	11-5-10
9.	PATRICK GADSBY	CR RO		9-22-10		11-9-10
10.	Andreas Goldau	CR SRO		9-23-10		11-6-10
11.	DANIEL K GEORGE	RO	Daniel K George	9-23-10	Daniel K George	12-14-10
12.	Bob Hyatt	RO		9-27-10		11-9-10
13.	TONY R. LEE	OPS TRAINING LIAISON	Tony R. Lee	9-28-10	Tony R. Lee	11-11-10
14.	SCOTT MORRIS	SRO		10-4-10		11-7-10
15.	CURTIS NORDEN	RO		10-4-10		12-7-10

NOTES:

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1.	Scot Hawkescenith	OPS RO		10/4/10		11/2/10
2.	Aaron Smith	OPS SRO		10/12/10		11/4/10
3.	Diane Perry	OTC ADMIN SPEC		10/19/10		11/04/10
4.	Harry Gerstey	Instructor		10/25/10		11/05/10
5.	Ravoath A. Yarbrough	Instructor		10/25/10		11/04/10
6.	J Ed Burchfield Jr.	OPS Superintendent		10/25/10		11/3/10
7.	SAM LARK	INITIAL TRNG SUPERVISOR		10/25/10		11/3/10
8.	ROBIN LANE	INSTRUCTOR		10/25/10		11/4/10
9.	Theodore A. Coe	INSTRUCTOR		10/25/10		11/4/10
10.	JOHN ASHCRAFT	INSTRUCTOR		10/25/2010		11-4-10
11.	DAVID P GARLAND	ENGR SUPV/EOP-AP SUPPORT		10/25/10		11-5-10
12.	JOHN R. ALGEO	INSTRUCTOR		10/26/10		11-9-10
13.	Michael R. Smith	Instructor		10/27/10		11-6-10
14.	Stephen S. Bowen	Instructor		10/28/10		11-5-10
15.						

NOTES:

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	PAUL MARSHALL	SRO		7/11/10		11/23/10	
2.	Daniel M. Bacon	RO		7/17/10		11/23/10	
3.	JOHN W. COLEMAN	SRO		7/17/10		11-6-10	
4.	William R McIntyre	Tech Supp Supv.		7-21-10		11-30-10	
5.	Darrell Hensley	Peer reViewer		7/28/10	Darrell Hensley by C.S. Willy	11-22-10	
6.	Eric P. MAOSEN	Peer reviewer		7/28/10	Eric P. Maosen	12-6-10	
7.	L. BRUCE BOYETTE	CNS SRO		7/28/10	L. Bruce Boyette	12-6-10	
8.	Joseph S. Appignani	RO		8/4/10		11-12-10	
9.	ROBERT S. SHAW	RO		8/4/10		11-5-10	
10.	Robert D. Wilks	SRO		8/4/10		11/22/10	
11.	Fred B Kirk	MNS Exam Lead		8/19/10	* Fred B Kirk	12-6-10	
12.	H. Clark Fletcher	MNS Exam Team		8/19/10	* H Clark Fletcher	12-6-10	
13.	Stanley C Pressley	ONS SRO		8/26/10		11/5/10	
14.	Ben McCall	ONS RO		8/26/10		11-5-10	
15.	M. Shane Johnson	ONS RO		8/26/10		11-12-10	

NOTES:

* Via phone call

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

1. Pre-Examination

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	Gabriel WASHBURN	Training Supervisor		4/26/10		11-3-10	
2.	Cliff Witherspoon	Exam Author		4/26/10		11-3-2010	
3.	John Sustek	COE		5/4/10	John Sustek/cpwpurphone	11-16-2010	
4.	Rick Robinson	OPS Rep		5/4/10		11-3-2010	
5.	PAUL STOVALL	FLEET OTM		5-10-10		11/3/2010	
6.	Dean Hubbard	TM		5-10-10		11-16-10	
7.	KEITH WELCHEL	Sim Supv.		5/12/10		11/4/2010	
8.	JAMES Byko	Simulator Instr.		6-9-10		11/4/2010	
9.	Joey Woolbright	Simulator Staff		6-15-10		11/5/10	
10.	Jeff Pottmeyer	Simulator Staff		6-15-10		11/5/10	
11.	Tam V. VO	Simulator STAFF		6-15-10		11-4-10	
12.	BILL ROSTRON	Simulator Staff		6/15/10		11/8/10	
13.	John R Steely	OPS Trng Mgr		7/7/10		11-3-10	
14.	FRED CONN	VENDOR		7/7/10		11-3-10	
15.	Alan Dills	OPS B SHIFT OPERATOR		7-10-10		11-4-10	

NOTES:

FINAL

Facility: **Oconee**		Date of Examination: **10/25/10**
Examination Level: RO [X] SRO [ ]		Operating Test Number: **1**
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations G2.1.25 (3.9/4.2)	D,R	**Admin-126 Manual Shutdown Margin Calculation** Both
Conduct of Operations G2.1.4 (3.3/3.8)	N,R	**Admin-124 Determine if RO License requirements met** RO Only
Equipment Control G2.2.42 (3.9/4.6)	D,R	**Admin-202 Determine SSF RCMUP Operability** RO Only
Radiation Control G2.3.12 (3.2/3.7)	N,R	**Admin-304 Determine Posting and Access requirements of LPI Room Based on Plan View** Both

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

* Type Codes & Criteria:

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

ES-301 **Administrative Topics Outline** Form ES-301-1

FINAL

Facility: **Oconee**		Date of Examination: **10/25/10**
Examination Level: RO ☐ SRO [X]		Operating Test Number: **1**
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations G2.1.25 (3.9/4.2)	D,R	**Admin-126 Manual Shutdown Margin Calculation** Both
Conduct of Operations G2.1.4 (3.3/3.8)	N,R	**Admin-125 Determine if SRO License requirements met** SRO only
Equipment Control G2.2.40 (3.4/4.7)	N,R	**Admin-211 Determine Tech Spec and SLC requirements for inoperable ADV flowpath** SRO only
Radiation Control G2.3.12 (3.2/3.7)	N,R	**Admin-304 Determine Posting and Access requirements of LPI Room Based on Plan View** Both
Emergency Plan G2.4.30 (2.7/4.1)	N,R	**Admin-409 Determine "Immediate" reportability requirements for a Reactor Trip.** SRO only

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

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

AG FINAL

Facility: **Oconee**	Date of Examination: **10/25/2010**
Exam Level: **RO X** SRO-I ☐ SRO-U ☐	Operating Test No.: **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. **CRO-108, Recover a Dropped Rod** OP/O/A/1105/009, Enclosure 4.15 (Recovery Of Dropped/Misaligned Safety Or Regulating Control Rod with Diamond In Automatic) APE 005 AA2.03 (3.5/4.4) (15 min)	M, A, S	1
b. **CRO-204, ES Recovery** EOP Enclosure 5.41 (ES Recovery) 006 A4.08 (4.2/4.3) (15 min)	D, S	2
c. **CRO- 004, Perform Actions For a Failed LPI Train** EOP Enclosure 5.1 (ES Actuation) EPE 011 EA1.04 (4.4/4.4) (10 min)	M, A, S, E, EN	3
d. **CRO-092, Swapping LPI Modes – High Pressure Mode to LPI Normal** OP/1/A/1104/004, Enclosure 4.15 (Swapping LPI Modes – High Press Mode to LPI Normal Mode) 005 A4.01 (3.6*/3.4) (15 min)	D, S, L	4P
e. **CRO-404, Alignment of Condensate Recirc** EP/1/A/1800/001, Enclosure 5.23 (Alignment of Condensate Recirc) APE054 G2.1.20 (4.6/4.6) (10 min)	N, A,S, E	4S
f. **CRO-602, Live Bus Transfer Of MFB Power From CT 4 To CT 1** OP/0/A/1106/019, Enclosure 4.11 (Live Bus Transfer Of MFB Power From CT 4 To CT 1) 062 A4.01 (3.3/3.1) (15 min)	N, S, L	6
g. **CRO-060, Perform Required Actions for a Turbine Building Flood** AP/10, (Uncontrollable Flooding of Turbine Building) APE BW/A07 AA1.3 (3.3/3.5) (15 min)	M, A, S	8
h. **CRO-500, Restore RB Auxiliary Fan Coolers Following a Loss of LPSW** OP/1104/019 (LPSW) Enclosure 4.16 (LPSW Shutdown and Return to Service of RB Aux Coolers) 022 A4.04 (3.1*/3.2) (15 min)	D, S	5

In-Plant Systems[@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. NLO-026, Manually Operate 2FDW-315 EOP Enclosure 5.27 (Alternate Methods for Controlling EFDW Flow) APE 054 AK3.03 (3.8/4.1) (10 min)	D, E, R	4S
j. NLO-003, Shutdown of Inverters During SBO EOP Enclosure 5.32 (Load Shed of Inverters During SBO) EPE 055 G2.1.30 (4.4/4.0) (5 min)	D, E, L	6
k. NLO-041, Restart The Primary IA Compressor Following A Compressor Trip OP/0/A/1106/27, Enclosure 4.3 (Primary IA Compressor Restart Following Trip) 078 G2.1.30 (4.4/4.0) (20 min)	D, E	8
@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		

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

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

Facility: **Oconee** Date of Examination: **10/25/2010**

Exam Level: **RO** ☐ SRO-I **X** SRO-U ☐ Operating Test No.: **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. **CRO-108, Recover a Dropped Rod** OP/O/A/1105/009, Enclosure 4.15 (Recovery Of Dropped/Misaligned Safety Or Regulating Control Rod with Diamond In Automatic) APE 005 AA2.03 (3.5/4.4) (15 min)	M, A, S	1
b. **CRO-204, ES Recovery** EOP Enclosure 5.41 (ES Recovery) 006 A4.08 (4.2/4.3) (15 min)	D, S	2
c. **CRO-004, Perform Actions For a Failed LPI Train** EP/1/A/1800/001 (Emergency Operating Procedure) Enclosure 5.1 (ES Actuation) EPW 011 EA1.04 (4.4/4.4) (10 min)	M, A, S, E, EN	3
d. **CRO-092, Swapping LPI Modes – High Pressure Mode to LPI Normal** OP/1/A/1104/004, Enclosure 4.15 (Swapping LPI Modes – High Press Mode to LPI Normal Mode) 005 A4.01 (3.6*/3.4) (15 min)	D, S, L	4P
e. **CRO-404, Alignment of Condensate Recirc** EP/1/A/1800/001, Enclosure 5.23 (Alignment of Condensate Recirc) APE054 G2.1.20 (4.6/4.6) (10 min)	N, A,S, E	4S
f. **CRO-602, Live Bus Transfer Of MFB Power From CT 4 To CT 1** OP/0/A/1106/019, Enclosure 4.11 (Live Bus Transfer Of MFB Power From CT 4 To CT 1) 062 A4.01 (3.3/3.1) (15 min)	N, S, L	6
g. **CRO-060, Perform Required Actions for a Turbine Building Flood** AP/10, (Uncontrollable Flooding of Turbine Building) APE BW/A07 AA1.3 (3.3/3.5) (15 min)	M, A, S	8
h. n/a		

In-Plant Systems[@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. **NLO-026, Manually Operate 2FDW-315** EOP Encl. 5.27 (Alternate Methods for Controlling EFDW Flow) APE 054 AK3.03 (3.8/4.1) (10 min)	D, E, R	4S
j. **NLO-003, Shutdown of Inverters During SBO** EOP Enclosure 5.32 (Load Shed of Inverters During SBO) EPE 055 G2.1.30 (3.9/3.4) (5 min)	D, E, L	6
k. **NLO-041, Restart The Primary IA Compressor Following A Compressor Trip** OP/0/A/1106/27, Enclosure 4.3 (Primary IA Compressor Restart Following Trip) 078 G2.1.30 (4.4/4.0) (20 min)	D, E	8
@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		

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

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

Facility: **Oconee** Date of Examination: **10/25/2010**

Exam Level: **RO** ☐ SRO-I ☐ SRO-U **X** Operating Test No.: **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. **CRO-108, Recover a Dropped Rod** OP/O/A/1105/009, Enclosure 4.15 (Recovery Of Dropped/Misaligned Safety Or Regulating Control Rod with Diamond In Automatic) APE 005 AA2.03 (3.5/4.4) (15 min)	M, A, S	1
b. n/a		
c. **CRO- 004 Perform Actions For a Failed LPI Train** EOP Enclosure 5.1 (ES Actuation) EPW 011 EA1.04 (4.4/4.4) (10 min)	M, A, S, E, EN	3
d. n/a		
e. n/a		
f. **CRO-602, Live Bus Transfer Of MFB Power From CT 4 To CT 1** OP/0/A/1106/019 Enclosure. 4.11 (Live Bus Transfer Of MFB Power From CT 4 To CT 1) 062 A4.01 (3.3/3.1) (15 min)	N, S, L	6
g. n/a		
h. n/a		
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. **NLO-026, Manually Operate 2FDW-315** EOP Enclosure 5.27 (Alternate Methods for Controlling EFDW Flow) APE 054 AK3.03 (3.8/4.1) (10 min)	D, E, R	4S
j. n/a		
k. **NLO-041, Restart The Primary IA Compressor Following A Compressor Trip** OP/0/A/1106/27, Enclosure 4.3 (Primary IA Compressor Restart Following Trip) 078 G2.1.30 (4.4/4.0) (20 min)	D, E	8

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

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

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

FINAL

Facility: **Oconee** Date of Examination: **10-25-2010** Operating Test Number: **1**

	1. General Criteria	Initials a	Initials b*	Initials 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	Gabriel Washburn / Khalid Wade	10-13-10
b. Facility Reviewer(*)	John R. Steely	10-13-10
c. NRC Chief Examiner (#)	Ron Aiello /	10/18/10
d. NRC Supervisor	Malcolm T. Widmann /	10/18/10

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

Facility: **Oconee** Date of Exam: **10-25-2010** Scenario Numbers: **1 / 2 / 3 / 4** Operating Test No.: **1**

QUALITATIVE ATTRIBUTES	Initials a	Initials b*	Initials 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)	7 / 8 / 7 / 7			
2. Malfunctions after EOP entry (1–2)	2 / 2 / 1 / 2			
3. Abnormal events (2–4)	3 / 3 / 3 / 0			
4. Major transients (1–2)	1 / 1 / 1 / 2			
5. EOPs entered/requiring substantive actions (1–2)	1 / 1 / 2 / 2			
6. EOP contingencies requiring substantive actions (0–2)	1 / 1 / 2 / 1			
7. Critical tasks (2–3)	3 / 3 / 4 / 4			

Facility: **Oconee** Date of Exam: **10-25-10** Operating Test No.: **1**

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

Instructions:

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

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

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

Facility: **Oconee** Date of Examination: **10-25-2010** Operating Test No.: **1**

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

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

Instructions:

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

Facility: OCONEE Date of Exam: 2010-302

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

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
008AG2.4.49	Pressurizer Vapor Space Accident / 3	4.6	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.
009EA2.38	Small Break LOCA / 3	3.9	4.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Existence of head bubble
011EG2.4.21	Large Break LOCA / 3	4.0	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the parameters and logic used to assess the status of safety functions
015AK2.07	RCP Malfunctions / 4	2.9	2.9	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	RCP seals
022AG2.1.7	Loss of Rx Coolant Makeup / 2	4.4	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.
025AA1.03	Loss of RHR System / 4	3.4	3.3	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	LPI pumps
027AK3.03	Pressurizer Pressure Control System Malfunction / 3	3.7	4.1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Actions contained in EOP for PZR PCS malfunction
029EK1.01	ATWS / 1	2.8	3.1	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Reactor nucleonics and thermo-hydraulics behavior
038EA1.32	Steam Gen. Tube Rupture / 3	4.6	4.7	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Isolation of a ruptured S/G
040AA2.05	Steam Line Rupture - Excessive Heat Transfer / 4	4.1	4.5	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	When ESFAS systems may be secured
054AA2.06	Loss of Main Feedwater / 4	4	4.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	AFW adjustments needed to maintain proper T-ave. and S/G level

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
055EK1.01	Station Blackout / 6	3.3	3.7	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Effect of battery discharge rates on capacity
056AA1.25	Loss of Off-site Power / 6	2.9	2.9	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Main steam supply valve control switch
057AK3.01	Loss of Vital AC Inst. Bus / 6	4.1	4.4	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Actions contained in EOP for loss of vital ac electrical instrument bus
065AK3.04	Loss of Instrument Air / 8	3	3.2	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Cross-over to backup air supplies
077AK2.01	Generator Voltage and Electric Grid Disturbances / 6	3.1	3.2	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Motors
BE04EK1.2	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	4	4.2	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Normal, abnormal and emergency operating procedures associated with (Inadequate Heat Transfer).
BE10EK2.2	Reactor Trip - Stabilization - Recovery / 1	3.5	4	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Facility s heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
005AA1.01	Inoperable/Stuck Control Rod / 1	3.6	3.4	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	CRDS
032AK1.01	Loss of Source Range NI / 7	2.5	3.1	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Effects of voltage changes on performance
051AK3.01	Loss of Condenser Vacuum / 4	2.8	3.1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Loss of steam dump capability upon loss of condenser vacuum
061AK1.01	ARM System Alarms / 7	2.5	2.9	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Detector limitations
069AG2.2.38	Loss of CTMT Integrity / 5	3.6	4.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of conditions and limitations in the facility license.
076AK2.01	High Reactor Coolant Activity / 9	2.6	3	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Process radiation monitors
BA07AA1.2	Flooding / 8	2.8	3	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Operating behavior characteristics of the facility.
BE03EK3.2	Inadequate Subcooling Margin / 4	3.6	3.8	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Normal, abnormal and emergency operating procedures associated with (Inadequate Subcooling Margin).
BE09EA2.1	Natural Circ. / 4	2.8	4.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
003K1.13	Reactor Coolant Pump	2.5	2.5	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	RCP bearing lift oil pump
003K4.04	Reactor Coolant Pump	2.8	3.1	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Adequate cooling of RCP motor and seals
004G2.1.32	Chemical and Volume Control	3.8	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to explain and apply all system limits and precautions.
005K6.03	Residual Heat Removal	2.5	2.6	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	RHR heat exchanger
006K3.03	Emergency Core Cooling	4.2	4.4	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Containment
007A3.01	Pressurizer Relief/Quench Tank	2.7	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Components which discharge to the PRT
008A1.02	Component Cooling Water	2.9	3.1	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	CCW temperature
008A4.07	Component Cooling Water	2.9	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Control of minimum level in the CCWS surge tank
010A3.02	Pressurizer Pressure Control	3.6	3.5	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	PZR pressure
012K5.02	Reactor Protection	3.1	3.3	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Power density
013K1.08	Engineered Safety Features Actuation	3.6	3.8	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	CCWS

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
022A4.05	Containment Cooling	3.8	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Containment readings of temperature, pressure and humidity system
026A2.02	Containment Spray	4.2	4.4	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Failure of automatic recirculation transfer
026G2.4.46	Containment Spray	4.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to verify that the alarms are consistent with the plant conditions.
039K5.05	Main and Reheat Steam	2.7	3.1	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Bases for RCS cooldown limits
059K4.19	Main Feedwater	3.2	3.4	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Automatic feedwater isolation of MFW
061K2.01	Auxiliary/Emergency Feedwater	3.2	3.3	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	AFW system MOVs
061K5.02	Auxiliary/Emergency Feedwater	3.2	3.6	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Decay heat sources and magnitude
062K2.01	AC Electrical Distribution	3.3	3.4	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Major system loads
063K2.01	DC Electrical Distribution	2.9	3.1	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Major DC loads
064A1.04	Emergency Diesel Generator	2.8	2.9	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Crankcase temperature and pressure
064K6.07	Emergency Diesel Generator	2.7	2.9	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Air receivers

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
073A2.02	Process Radiation Monitoring	2.7	3.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Detector failure
076A2.01	Service Water	3.5	3.7	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Loss of SWS
078K3.02	Instrument Air	3.4	3.6	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Systems having pneumatic valves and controls
078K4.03	Instrument Air	3.1	3.3	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Securing of SAS upon loss of cooling water
103A3.01	Containment	3.9	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Containment isolation
103K1.05	Containment	2.8	3.0	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Personnel access hatch and emergency access hatch

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
001K4.23	Control Rod Drive	3.4	3.8	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Rod motion inhibit
014A2.06	Rod Position Indication	2.6	3.0	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Loss of LVDT
015K2.01	Nuclear Instrumentation	3.3	3.7	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	NIS channels, components and interconnections
017K3.01	In-core Temperature Monitor	3.5	3.7	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Natural circulation indications
029A3.01	Containment Purge	3.8	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	CPS isolation
033K1.02	Spent Fuel Pool Cooling	2.5	2.7	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	RHRS
034A1.02	Fuel Handling Equipment	2.9	3.7	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Water level in the refueling canal
041K6.03	Steam Dump/Turbine Bypass Control	2.7	2.9	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Controller and positioners, including ICS, S/G, CRDS
068G2.1.30	Liquid Radwaste	4.4	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to locate and operate components, including local controls.
075A4.01	Circulating Water	3.2	3.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Emergency/essential SWS pumps

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.14	Conduct of operations	3.1	3.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of criteria or conditions that require plant-wide announcements, such as pump starts, reactor trip, mode changes, etc.
G2.1.26	Conduct of operations	3.4	3.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of industrial safety procedures (such as rotating equipment, electrical, high temperature, high pressure, caustic, chlorine, oxygen and hydrogen).
G2.1.8	Conduct of operations	3.4	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to coordinate personnel activities outside the control room.
G2.2.2	Equipment Control	4.6	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.
G2.2.39	Equipment Control	3.9	4.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of less than one hour technical specification action statements for systems.
G2.2.42	Equipment Control	3.9	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
G2.3.11	Radiation Control	3.8	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to control radiation releases.
G2.3.4	Radiation Control	3.2	3.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiation exposure limits under normal and emergency conditions
G2.4.23	Emergency Procedures/Plans	3.4	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the bases for prioritizing emergency procedure implementation during emergency operations.
G2.4.29	Emergency Procedures/Plans	3.1	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the emergency plan.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
008AG2.4.41	Pressurizer Vapor Space Accident / 3	2.9	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the emergency action level thresholds and classifications.
015AG2.2.44	RCP Malfunctions / 4	4.2	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions
025AA2.04	Loss of RHR System / 4	3.3	3.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Location and isolability of leaks
038EA2.16	Steam Gen. Tube Rupture / 3	4.2	4.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Actions to be taken if S/G goes solid and water enters steam line
058AA2.02	Loss of DC Power / 6	3.3	3.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	125V dc bus voltage, low/critical low, alarm
BE04EG2.4.8	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	3.8	4.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of how abnormal operating procedures are used in conjunction with EOPs.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
032AA2.08	Loss of Source Range NI / 7	2.2	3.1	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Testing required if power lost, then restored
033AG2.2.25	Loss of Intermediate Range NI / 7	3.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.
076AA2.04	High Reactor Coolant Activity / 9	2.6	3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Process effluent radiation chart recorder
BE13EG2.4.9	EOP Rules	3.8	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
003A2.02	Reactor Coolant Pump	3.7	3.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Conditions which exist for an abnormal shutdown of an RCP in comparison to a normal shutdown of an RCP
006G2.4.30	Emergency Core Cooling	2.7	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of events related to system operations/status that must be reported to internal orginizations or outside agencies.
007A2.06	Pressurizer Relief/Quench Tank	2.6	2.8	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Bubble formation in PZR
064G2.2.3	Emergency Diesel Generator	3.8	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	(multi-unit license) Knowledge of the design, procedural and operational differences between units.
073G2.2.37	Process Radiation Monitoring	3.6	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to determine operability and/or availability of safety related equipment

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
034A2.03	Fuel Handling Equipment	3.3	4.0	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Mispositioned fuel element
068G2.2.36	Liquid Radwaste	3.1	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions of operations
086G2.4.6	Fire Protection	3.7	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge symptom based EOP mitigation strategies.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.34	Conduct of operations	2.7	3.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of primary and secondary chemistry limits
G2.1.5	Conduct of operations	2.9	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to locate and use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.
G2.2.40	Equipment Control	3.4	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to apply technical specifications for a system.
G2.3.12	Radiation Control	3.2	3.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiological safety principles pertaining to licensed operator duties
G2.3.6	Radiation Control	2.0	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to aprove release permits
G2.4.12	Emergency Procedures/Plans	4.0	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of general operating crew responsibilities during emergency operations.
G2.4.44	Emergency Procedures/Plans	2.4	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of emergency plan protective action recommendations.

Tier / Group	Randomly Selected KA	Reason for Rejection FINAL
1 / 1	EPE011 2.4.21	Q(3) This KA would require use of SPDS system and ONS does not have procedural guidance related to using the SPDS displays or its logic. Discussed with Chief Examiner. He picked EPE011 G2.4.20 as the replacement KA
1 / 1	APE027 AK3.03	Q(7) ONS has no EOP guidance on Pressurizer Pressure Control failure and AP guidance does not provide for a discriminating question regarding the reason for actions as required by the KA. Discussed with Chief Examiner. He picked APE027 AK3.04.
1 / 1	APE057 AK3.01	Q(14) ONS has no EOP or AP guidance for loss of a vital ac electrical instrument bus. Discussed with Chief Examiner. He picked APE057 AA1.05.
1 / 1	APE077 AK2.01	Q(16) Could not write a discriminating question on this KA. We have no guidance on the affect of generator voltage and grid disturbances on motors. Discussed with Chief Examiner. He picked APE077 AK2.07.
1 / 2	BWE09 EA2.1	Q(27) Can not write an RO level question regarding selection of procedures to this KA. Chief Examiner provided replacement KA BWE09EA1.2
2 / 1	SYS006 K3.03	Q(32) Could not write a discriminating question at the RO on this KA. Discussed with Chief Examiner on 6/28/2010. He picked 006 K3.02 as the replacement KA.
2 / 1	SYS026 A2.02	Q(40) Oconee does not have "automatic recirculation transfer". Discussed with Chief Examiner on 6/28/2010. He picked 026 A2.04 as the replacement KA.
2 / 1	SYS061 K2.01	Q(44) Oconee does not have MOVs that are required to operate of a actuation of EFDW. Could not write an operationally significant question on this KA. Discussed with Chief Examiner on 6/28/2010. He picked 061 K2.02 as the replacement KA.
2 / 1	SYS064 A1.04	Q(48) Oconee uses two hydro units for emergency power. Could not find anything to correspond with "crankcase temperature and pressure" on a hydro unit. Discussed with Chief Examiner on 6/28/2010. He picked 064 A1.03 as the replacement KA.
2 / 1	SYS064 K6.07	Q(49) Oconee uses two hydro units for emergency power. Could not find anything to correspond with "Air receivers" on a hydro unit. Discussed with Chief Examiner on 6/28/2010. He picked 064 K6.08 as the replacement KA.
2 / 1	SYS078 K4.03	Q(53) ONS has no specific relationship where loss of SAS cooling water affects design features or interlocks of IAS. Discussed with Chief Examiner. He picked 078 K4.02.
2 / 2	SYS017 K3.01	Q(59) ONS does not use Incore Instrumentation to monitor or verify Natural Circulation. It is only used as diverse indications. Discussed with Chief Examiner. He picked 017 K4.01.
2 / 2	SYS068 2.1.30	Q(64) Operations does not initiate nor control liquid releases or the Liquid Radwaste System. Discussed with Chief Examiner. He picked 056 G2.1.30.
1 / 2	APE032 AA2.08	Q(82) ONS has no Operations procedural guidance on testing requirements for Source Range NI's that lose power and then have power restored. Discussed with Chief Examiner. He picked APE032 AA2.07.
1 / 2	APE076 AA2.04	Q(84) Oconee does not have a "process effluent radiation chart recorder". Discussed with Chief Examiner on 6/28/2010. He picked APE076 AA2.02 as the replacement KA.
1 / 2	BWE13 2.4.9	Q(85) Could not write a discriminating question at the SRO on this KA. Knowledge of Rules is RO knowledge. Discussed with Chief Examiner on 6/28/2010. He picked BWE10 EA2.1 as the replacement KA.

Tier / Group	Randomly Selected KA	Reason for Rejection
2 / 1	SYS064 2.2.3	Q(89) Oconee uses two hydro units for emergency power. Could not write a discriminating question concerning unit differences and our hydro unit. Discussed with Chief Examiner on 6/28/2010. He picked 064 G2.2.6 as the replacement KA.
2 / 1	SYS073 2.2.37	Q(90) Could not write a discriminating question at the SRO level on this KA. Discussed with Chief Examiner on 6/28/2010. He picked 073 G2.2.40 as the replacement KA.
2 / 2	SYS068 2.2.36	Q(92) Could not write a discriminating question at the SRO level on this KA. Discussed with Chief Examiner on 6/28/2010. He picked 068 G2.2.36 as the replacement KA.
2 / 2	SYS086 2.4.6	Q(93) Could not get SRO level question on this system. Discussed with chief examiner and replaced this KA iwth 035G2.4.6

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

Facility: Oconee Nuclear Station Date of Exam: 10/25/2010 Exam Level: RO ☐ SRO ☑

FINAL

Item Description			Initial a	Initial b*	Initial c*
1.	Questions and answers are technically accurate and applicable to the facility.		CPW	JRS	✓
2.	a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.		CPW	JRS	✓
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401		CPW	JRS	✓
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).		CPW	JRS	✓
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)		CPW	JRS	✓
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: 18 / 1 Modified: 5 / 5 New: 52 / 19	CPW	JRS	✓
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: 36 / 9 C/A: 39 / 16	CPW	JRS	✓
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.		CPW	JRS	✓
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.		CPW	JRS	✓
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.		CPW	JRS	✓
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.		CPW	JRS	✓

	Printed Name / Signature	Date
a. Author	Clifford P. Witherspoon / CPW	11-1-10
b. Facility Reviewer (*)	*John R. Steely / JRS	11-1-10
c. NRC Chief Examiner (#)	Ken Ide / KI	11/2/10
d. NRC Regional Supervisor	MALCOLM T. WIDMANN / MTW	11/03/10

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.

* Per phone conversation by Ken Ide

Oconee 2010-302

Q#	1. LOK (C/A)	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.
   - One or more distractors is not credible.
   - 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)nacceptable (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).

RO/SRO Combined Question

Generic:

The basis for Hi Cog was NOT included in your distractor analysis. This resulted in a significant amount of extra time to verify the cog level because the developer thought process was not included.

No general discussion in the distractor analysis as agreed upon. Failure to fill in the block results in incomplete description that results in many reviewer questions that could have been avoided during review. Many times this area provides enough background information so the NRC reviewer knows what and how the author is thinking.

Remove "Based on the following conditions" from the Qs that apply. Add at the top of the Q "Given the following conditions" Start of the Q with the WOOTF statement *Done*

DV = Discriminatory Value

NPD = Non Plausible Distractors

WOOTF= Which one of the following

Too many A/B correct answers *Revised order of distracters so that count is now A-26, B-24, C-26, D-24*

1	M	2	X			X						Y	N	U	APE008G2.4.49 See stem comment on Q 76

Q#/	1. LOK (C/A)	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
														S	Nothing is provided to indicate that 1RC-4 might fail. Therefore, manually tripping the reactor (C and D) is not plausible. This Q is U because of 2 NPDs. R. Aiello 09/08/10 ***Increased Pzr level to 350" since being at 375" precludes closing 1RC-4. This means that manually tripping the reactor would be correct if Pzr level were 375 inches. Adjusted format as suggested by Chief Examiner.*** ***Accepted by RFA 9/29/10***
2	M	2	X			X						Y	N	U S	EPE009EA2.38 See stem comment on Q 76 There is no significance to 467". Therefore, A and B are NP. Lower to something greater then 163" or raise it to just below 537" This Q is U because of 2 NPDs. R. Aiello 09/08/10 ***Changed part 1 of A/B to 523" to be just below 537". Changed the second part of the question to a new question since current question was actually SRO knowledge based on being detailed knowledge of the procedure from deep into the LOCA CD tab. Adjusted format per Chief Examiner suggestion.*** ***RFA accepts changes 9/29/10***
3	M	2										Y	N	S	EPE011G2.4.20 **See Generic comment above** R. Aiello 09/08/10 ***Adjusted format as suggested by Chief Examiner.***
4	C	2				X						Y	N	U S	APE015/017AK2.07 There are no criteria for tripping the reactor for 1 failed RCP. Therefore distractors A and B are NP. This Q is U because of 2 NPDs. R. Aiello 09/08/10 ***Discuss with Chief Examiner. AP/16 does direct tripping Rx if only 1 RCP failed (and meets Immediate Trip Criteria). If ANY RCP meets Immediate Trip Criteria when Rx power is > 70%, AP/16 directs tripping the Rx then stopping the affected RCP. Additionally, the RCP seal cavity pressures are displayed on the same OAC screen the operator monitors when determining if Immediate Trip Criteria***

Q#/	1. LOK (C/A)	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
															are met so it would be plausible to believe that the Seal Cavity pressures are part of the ITC. Adjusted format based on Chief Examiner generic feedback. Added Vibration data to stem for plausibility. ***Adjusted 1B2 RCP seal pressures to actual normal values and corrected Answer Explanations.*** ***Accepted by RFA 9/29/10***
5	C	3				X						Y	N	U S	APE022G2.1.7 See stem comment on Q 76 There is no indication that 1HP-26 failed in the stem. Therefore 1HP-410 is NP. Add something in the stem that may lead one to believe that 1HP-26 could be failed. This Q is U until a stem phrase is added to qualify B and D second part. R. Aiello 09/08/10 ***Replaced HP-410 with HP-122. Since HP-122 is the bypass around HP-26, failure of HP-26 to operate is not required to make using HP-122 plausible. HP-122 is a manual valve with much finer control than HP-26 and is also one of the success paths in the AP to mitigate this failure therefore is plausible as a choice without a failure of HP-26. Adjusted format as suggested by Chief Examiner.*** ***Accepted by RFA 9/29/10***
6	C	3				X						Y	N	U S	APE025AA1.03 It is clear from the stem that the pump is cavitating. Pump runout is not an issue and nothing in the stem would suggest it might be. Therefore distractors C and D are NP. Suggest either change out C and D or put something in the stem that might suggest runout to qualify C and D. This Q is U because 2 potentially NP distractors. Inadequate distractor analysis and supporting reference material to support the choices. R. Aiello 09/09/10 ***Changed to a 2-part question due to old C/D NP.*** ***Accepted by RFA 9/29/10***
7	C	3										Y	N	S	APE027AK3.04 **See Generic comment above** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.***

Q#/	1. LOK (C/A)	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 since to because. ***Accepted by RFA 9/29/10***
8	C	3	X									Y	N	E S	EPE029EK1.01 See stem comment on Q 76 R. Aiello 09/09/10 ***Made FIRST all caps in stem. Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
9	C	3	X									Y	N	E S	EPE038EA1.32 See stem comment on Q 76 and use the WOOTF statement to be consistent. This is the way this Q should be written: **WOOTF is the (1) MAXIMUM RCS temperature where the EOP would allow isolating the 1A SG and (2) after isolation, when would the EOP require steaming 1A SG?** **Note: The reference states to verify RCS T > 532. Therefore, shouldn't the stem say "MINIMUM" ?** The current way this Q and many others like this are written is difficult to read. R. Aiello 09/09/10 ***Discuss with Chief Examiner. SG is isolated when temperature is 525 – 532. Made part 1 of this question regarding the range of temperatures for isolating the SG.*** ***Accepted by RFA 9/29/10***
10	C	3	X									Y	N	E S	APE040AA2.05 See stem comment on Q 76 R. Aiello 09/09/10 ***Adjusted format based on feedback from Chief Examiner.*** ***Accepted by RFA 9/29/10***
11	C	3	X									Y	N	E S	APE054AA2.06 Use: **WOOTF completes the statement below?** **Tave will <u>initially</u> be controlled by throttling _____ and <u>initially</u> SG level _____ be established.** R. Aiello 09/09/10

Q#/	1. LOK (C/A)	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
															Accepted by RFA 9/29/10 ***Adjusted format based on Chief Examiner feedback.***
12	M	2					X					Y	N	E S	EPE055EK1.01 See stem comment on Q 76 If B was correct, would A also be correct? Facility verify. This Q is an E until verified. R. Aiello 09/09/10 ***Discuss with Chief Examiner. If B were correct it would mean that control power for 4160 V came from the essential inverters (KI, KU, or KX). Since ES Analog and Digitals are powered from the Vital inverters (KVIA,B,C,D), if B were correct A would not be correct. Adjusted format based on Chief Examiners feedback.*** ***NO psychometric issue identified. Question is SAT*** ***Accepted by RFA 9/29/10***
13	M	2	X									Y	N	E S	APE056AA1.25 See stem comment on Q 76 R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
14	C	3										Y	N	S	APE057AA1.05 See Generic comment above R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.***
15	C	3					X					Y	N	E S	APE065AK3.04 These are NOT normal conditions. Therefore, is if the primary IA compressor fails (choice B), is this a potentially correct answer? This Q is an E until verified. Inadequate info in ref material\distractor analysis to determine. R. Aiello 09/09/10 ***Clarified that in B, Primary IA compressor failure is a mechanical failure. This means that its failure would not impact operability of the Backup IA compressors which means they would be available and able to supply the IA system and therefore the AIA system would not be needed. Corrected spelling error (buss). Adjusted format based on Chief Examiner feedback.***

Q#/	1. LOK (C/A)	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
															Accepted by RFA 9/29/10
16	C	3										Y	N	S	APE077AK2.07 **See Generic comment above** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.***
17	C	3	X									Y	N	E S	BWE04EK1.2 See stem comment on Q 76 R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
18	C	3										Y	N	S	BWE10EK2.2 **See Generic comment above** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
19	C	3	X									Y	N	E S	APE005AA1.01 **Which one of the following completes the statement below:** **The CRD system ___ generate a runback fault and the maximum final power level (CTP) directed by AP/1, Unit Runback will be </= to ___** **A. Will / 60%** **B. Will / 45%** **C. Will NOT / 60%** **D. Will NOT / 45%** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback*** ***Accepted by RFA 9/29/10.***
20	C	2										Y	N	S E S	APE032AK1.01 **See Generic comment above** R. Aiello 09/09/10

Q#/	1. LOK (C/A)	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
															Adjusted format based on Chief Examiners feedback Accepted by RFA 9/29/10 .
21	C	3	X									Y	N	E S	APE051AK3.01 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above.** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
22	~~C?~~ C	2	X									Y	N	~~E~~ S	APE061AK1.01 Stem: Given the following graph: WOOTF ..... This is a memory NOT a comprehensive Q. You either know the correct power level or you don't. R. Aiello 09/09/10 ***Changed cognitive level to Memory and adjusted format based on Chief Examiners feedback.*** ***Question determined to be Comprehension.*** ***Accepted by RFA 9/29/10***
23	M	2	X				X					Y	N	E S	APE069K2.2.38 See stem comment on Q 76 More plausible if C and D Temp is changed to 250 since TS states >/= to 250 (Since already in mode 3). The applicant may not be able to make the connection. R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback. Changed C/D to 255 from 195 to enhance plausibility.*** ***Accepted by RFA 9/29/10***
24	M	2	X				X					Y	N	E S	APE076AK2.01 Once you define 1RIA-59, 16, and 40, they don't need to be redefined. It just clutters up the distractors. Suggest either remove the 2nd definition or define in the stem. See Generic comment above R. Aiello 09/09/10 ***Removed second set of noun names of RIA's and adjusted format based on Chief Examiner feedback.***

Q#/	1. LOK (C/A)	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
															Accepted by RFA 9/29/10
25	C	3				X						Y	N	U S	BWA07AA1.2 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above.** Distractors A and B are NP because of the way they are worded. One would NOT say **"CCW pumps are tripped to establish gravity CCW flow through CCW-8"** you would say **"CCW pumps are tripped to establish gravity flow through CCW-8"** This Q is U due to 2 NPDs. R. Aiello 09/09/10 ***Reworded part 1 of A/B and adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
26	M	2										Y	N	S	BWE03EK3.2 **See Generic comment above** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.***
27	M	2					X					Y	N	E S	BWE03EK3.2 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above.** For D to be plausible, something needs to be in the stem for the applicant to consider a LSCM R. Aiello 09/09/10 ***Adjusted format based on Chief Examiner feedback. Discuss with Chief Examiner since the plausibility statement for D incorrectly stated that 240" was level for LOSCM with EFDW. That lead to Chief Examiner questioning plausibility of D since no indication of LOSCM. Corrected the Plausibility statement since 240" is the setpoint for Natural Circulation when on EFDW therefore is plausible as is.*** ***Accepted by RFA 9/29/10***
28	M	2										Y	N	S	SYS003K1.13 **See Generic comment above** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiner feedback.***
29	C	3	X									Y	N		SYS003K4.04 **See Generic comment above. Possibly consider**

Q#/	1. LOK (C/A)	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
														E S	writing like suggestion in Q 19 above R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
30	C	1				X						Y	N	~~U~~ E	SYS004K2.1.32 This Q is a "plug and chug" and is a direct look up on the graph. It has no discriminatory value. This Q is a U because it has no DV. Replace the Q. R. Aiello 09/09/10 ***Discuss with Chief Examiner. This question is not just "plug and chug". Since the information in the blocks containing compensatory actions for being above or below the acceptable region are whited out, the candidate is required to know which side of the graph requires declaring both HPI trains inoperable. Actions for being below the curve have different compensatory actions.*** ***Facility defined required actions more clearly and determined this is more than "plug and chug".*** ***Accepted by RFA 9/29/10***
31	M	2										Y	N	S	SYS005K6.03 See Generic comment above R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.***
32	M	2	X									Y	N	E S	SYS006K3.02 See Generic comment above. Possibly consider writing like suggestion in Q 19 above R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
33	C	3	X									Y	N	E S	SYS007A3.01 See Generic comment above. Possibly consider writing like suggestion in Q 19 above R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.***

Q#/	1. LOK (C/A)	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
															Accepted by RFA 9/29/10
34	C	3	X									Y	N	E S	SYS008A1.02 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
35	C	3	X									Y	N	E S	SYS008A4.07 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/09/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
36	C	3	X									Y	N	E S	SYS010A3.02 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/10/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
37	M	2					X					Y	N	E S	SYS012K5.02 I do not recall a high RCS Temperature trip. Please re-verify. If this trip does not exist then this distractor is NP. This Q is E until verified, R. Aiello 09/10/10 ***Discuss with Chief Examiner. Added both TS and Actual High Temperature trip setpoints to Plausibility statement for D and adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
38	M	1				X						Y	N	U S	SYS013K1.08 This Q has very low DV. ES actuation is a given regardless. The other choices are good distracters by themselves. However, when ES actuation is also a choice, it dwarfs the others. Make this a two part Q as follows: WOOTHF....

Q#/	1. LOK (C/A)	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
															A. CC Surge tank level = 10" and decreasing OR ES 1-6 actuation B. Primary IA compressor trips OR closure of CC-7 and CC-8 C. 1XN de-energized ONLY **D. ES 1-6 actuation ONLY** This Q is U because of three NP distracters as written. R. Aiello 09/10/10 ***Made this a 2-part choice for each answer based on Chief Examiner feedback*** ***Accepted by RFA 9/29/10***
39	C	3										Y	N	S	SYS002A4.05 **See Generic comment above** R. Aiello 09/10/10 ***Adjusted format based on Chief Examiner feedack.***
40	M	2				X						Y	N	U E	SYS026A2.04 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** The procedure states on Page 9 of 33 RNO ti initiate action to place in ES position if desired. With a LBLOCA, this will be immediately desired. I believe A is a potentially correct answer. Please reevaluate. This Q is U until this issues is resolved. R. Aiello 09/10/10 ***For second part of question, reworded stem to more specifically ask what Encl. 5.1 directs the RO to do. The procedure directs the RO to notify the SRO to evaluate starting the RBS pump therefore if the RO chose to "immediately start" the pump rather than notify the SRO to evaluate, he would not be performing the actions directed by Encl. 5.1. Adjusted format based on Chief Examiners feedback.*** ***RFA agrees with facility analysis.*** ***Accepted by RFA 9/29/10***
41	C	1 2				X						Y	N	U S	SS026G2.4.46 With RB Pressure 16.4 psig and increasing, regardless of what A, C, and D say, manually actuating ES channels 7 & 8 will be required. Distractors A, C, and D are dwarfed. Creating a two part for this Q will increase the DV. This Q is U because the DV is too low.

Q#/	1. LOK (C/A)	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
															Also see Generic comment above R. Aiello 09/10/10 ***Made C & D 2-part question (using guidelines Chief Examiner provided in Q38 comments), removed the blue setpoint labels from picture since they are no longer on the alarm panels in the control room, and adjusted format based on feedback from Chief Examiner.*** ***Accepted by RFA 9/29/10***
42	C? M	3										Y	N	E S	Sys039K5.05 **This is a memory level question. There is nothing to calculate, evaluate or analyze. The applicant will either know it or he won't.** Change to memory R. Aiello 09/10/10 ***Changed cognitive level based on Chief Examiner feedback.*** ***Accepted by RFA 9/29/10***
43	C	3	X									Y	N	E S	SYS059K4.19 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/10/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
44	M	2	X									Y	N	E S	SYS061K2.02 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/10/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
45	C	3	X									Y	N	E S	SYS061K5.02 A stem qualifier MUST be added to bullet proof the correct answer especially since all choices impact the heat required to be removed. **Also see Generic comment above** R. Aiello 09/10/10

Q#/	1. LOK (C/A)	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
															Clarified stem is asking about flow indicated by Encl. 5.13 and adjusted format based on Chief Examiners feedback. ***Accepted by RFA 9/29/10***
46	M	2										Y	N	S	SYS062K2.01 **See Generic comment above** R. Aiello 09/10/10 ***Adjusted format based on Chief Examiners feedback.***
47	C	1				X						Y	N	U S	SYS063K2.01 This Q has low DV. Increase as follows: A. Mulsifyer systems and TDEFDWP B. PCB-9 Control Power and CCW-8 C. Main FWPT Auxiliary Oil Pump and PCB Control Power **D. TDEFDWP and CCW-8** This Q is U because the DV is too low. R. Aiello 09/10/10 ***Made this a 2-part question based on CE feedback.*** ***Accepted by RFA 9/29/10***
48	C	3	X									Y	N	E S	SYS064A1.03 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/10/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
49	M	2										Y	N	S	SYS064K6.08 **See Generic comment above** R. Aiello 09/10/10 ***Adjusted stem to clearly identify that all of the Forebay level instruments for KHU-2 are not operable (since there are actually 2) by stating that ALL Forebay levels for KHU 2 not operable. . Adjusted format based on Chief Examiners feedback.***
50	C	3	X									Y	N	E S	SYS073A2.02 In A: change "if" to "as long as" or in B change "as long as" to "if"

Q#/	1. LOK (C/A)	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
															See Generic comment above. Possibly consider writing like suggestion in Q 19 above R. Aiello 09/10/10 ***Changed "A" by changing "it" to "as long as" and adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
51	C	3	X			X						Y	N	U E S	SYS076A2.01 If 25 psig was correct, 18 would be too since no qualifier was stated in the stem. Therefore Ca and D are NP. Put qualifier in the stem (i.e. minimum, maximum, etc) This Q is U until the stem is corrected. **Also, see Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/11/10 ***Discussed with Chief Examiner by phone who agreed OK as is since question is asking for the setpoint. Underlined "setpoint" for emphasis. Adjusted the format based on Chief Examiner feedback*** ***Accepted by RFA 9/29/10***
52	C	3	X			X						Y	N	U S	SYS078K3.02 **See Generic comment above** Suggest putting "2FDW-35 and 44 (Startup FDW Control Valves)" in the stem. Without knowing the original position of the valves, since D is the correct answer, B or C could be correct also (e.g. failed as is could be failed open or failed closed). This Q is U since potentially 2 correct answers. A fix for this would be to put a fractional position in the stem for the valves. R. Aiello 09/11/10 ***Put valve names and initial positions in stem and adjusted format as suggested by Chief Examiner.*** ***Accepted by RFA 9/29/10***
53	C? M	2										Y	N	E S	SYS078K4.02 **See Generic comment above** **This is a memory level question. There is nothing to calculate, evaluate or analyze. The applicant will either know it or he won't. He will take the applicable pressure and directly pick off the point on the graph.** R. Aiello 09/11/10

Q#/	1. LOK (C/A)	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 cognitive level to Memory and adjusted format based on chief examiner feedback. ***Accepted by RFA 9/29/10***
54	M	2										Y	N	S	SYS103A3.01 No comment R. Aiello 09/11/10 ***Re-ordered answers so that D is now correct to reduce number of A correct answers.***
55	M	2										Y	N	S	SYS103K1.05 **See Generic comment above** R. Aiello 09/11/10 ***Adjusted format based on Chief Examiner feedback.***
56	M	2					X					Y	N	E S	SYS001K4.23 I think if B was correct that A would be also. Therefore B will be eliminated. Replace distractor B. R. Aiello 09/11/10 ***Changed B distracter based on Chief Examiner feedback.*** ***Re-ordered answers so that D is now correct to reduce number of A correct answers.*** ***Accepted by RFA 9/29/10***
57	M	2	X									Y	N	E S	SYS014A2.06 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/11/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/29/10***
58	M	2	X									Y	N	E S	SYS015K2.01 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/11/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/29/10***
															SYS017K4.01

Q#/	1. LOK (C/A)	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
59	M	2										Y	N	S	See Generic comment above R. Aiello 09/11/10 ***Adjusted format based on Chief Examiner feedback.***
60	M	2										Y	N	S	SYS029A3.01 No comment R. Aiello 09/11/10
61	C	3	X			X						Y	N	U S	SYS033K1.02 See Generic comment above. Possibly consider writing like suggestion in Q 19 above Can you ever align the Spent Fuel Cooling Pumps to the core flood nozzles? It was not clear from the reference. If so, then distractors B and D are OK. If not then B and D are NP and will have to be replaced. This Q is U until resolved. R. Aiello 09/11/10 ***Could not come up with PD's for B & D therefore changed question.*** ***Accepted by RFA 9/29/10***
62	C	3	X									Y	N	E S	SYS034A1.02 See Generic comment above The WOOTF statement suggestion: WOOTF predicts the response of actual Fuel Transfer Canal Level when RB Purge trips? That way the whole stem is cleaned up and simplified. R. Aiello 09/11/10 ***Adjusted format based on Chief Examiner feedback. Reworded stem accordingly.*** ***Re-ordered answers so that D is now correct to reduce number of A correct answers.*** ***Accepted by RFA 9/29/10***
63	C	3	X									Y	N	E S	SYS041K6.03' See Generic comment above. Possibly consider writing like suggestion in Q 19 above R. Aiello 09/11/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
64															SYS036G2.1.30 See Generic comment above. Possibly consider

Q#/	1. LOK (C/A)	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
	M	2	X									Y	N	E S	writing like suggestion in Q 19 above R. Aiello 09/11/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/29/10***
65	C? M	2										Y	N	E S	SYS075A4.01 See Generic comment above This is a memory level question. There is nothing to calculate, evaluate or analyze. The applicant will either know it or he won't. He will take the applicable pressure and directly pick off the point on the graph. R. Aiello 09/11/10 ***Changed cog level to memory and adjusted format based on Chief Examiner feedback*** ***Accepted by RFA 9/29/10***
66	M	2					X					Y	N	E S	G2.1.14 Distractor D: Write as follows: Starting or Securing 1B1 RCP. Half is true and half is false. R. Aiello 09/11/10 ***Made answers 2-part to ensure only one correct answer.*** ***Accepted by RFA 9/30/10***
67	M	2										Y	N	S	G2.1.26 No Comment R. Aiello 09/11/10
68	C	2										Y	N	S	G2.1.8 See Generic comment above R. Aiello 09/11/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/30/10***
69	~~M2~~ C	2	X									Y	N	E S	G2.2.2 See Generic comment above. Possibly consider writing like suggestion in Q 19 above This is a comprehensive level Q. It is similar to 68 above. R. Aiello 09/11/10

Q#/	1. LOK (C/A)	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 cog level to Comprehension and adjusted format based on Chief Examiner feedback. ***Accepted by RFA 9/30/10***
70	M	2					X					Y	N	E S	G2.2.39 If D was correct C would be also. A qualifier needs to be in the stem. Without it, D is NP. **Also see Generic comment above** R. Aiello 09/11/10 ***Added qualifier and adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
71	M	2										Y	N	S	G2.2.42 **See Generic comment above** R. Aiello 09/11/10 ***Adjusted format based on Chief Examiner feedback.***
72	C	2										Y	N	S	G2.3.11 No comments R. Aiello 09/11/10 ***Capitalized ONE in stem for consistency. Reworded stem to simplify.*** ***Re-ordered answers so that D is now correct to reduce number of A correct answers.***
73	M	2	X									Y	N	E S	G2.3.4 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/11/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/30/10***
74	C	3	X									Y	N	E S	G2.4.23 **See Generic comment above. Possibly consider writing like suggestion in Q 19 above** R. Aiello 09/11/10 ***Adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/30/10***

Q#/	1. LOK (C/A)	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
75	C	3	X			X						Y	N	U S	G2.4.29 Since there is no qualifier in the stem, if D was correct C,B, A would be also. This Q is U until resolved. R. Aiello 09/11/10 ***Added qualifier to stem so that question asks for the Maximum number of minutes. Reworded stem based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
	SRO ONLY														
76	C	3	X			X						Y	Y	U E S	APE008G2.4.41 STEM: Delete "Based on the above conditions." It is implied since they ARE stated in the stem. Suggest writing the stem similar to Q 79 or delete the "and". .At the top of the stem state "Given the following" for this Q and all related Qs. Since this Q is open ref, Why are C and D plausible? The Alert category (Encl 4.1) is the only one that discusses high radiation. Justify why C and d plausible. This Q is U until justification is made. Since the bullets are numbered, suggest deleting "and". It just clutters up the stem. R. Aiello 09/07/10 ***Discuss with Chief Examiner.*** ***C/D are plausible as follows:*** ***1. A common mistake is to add together points in a secion of Encl. 4.1. If the points for LOSCM and RIA readings (under RCS Barriers) are added, classification as SAE is the result.*** ***2. Encl. 4.3 uses RIA 57/58 readings to directly classify an event (by way of Encl. 4.8) and the lowest classification based on the RIA readings is a SAE.*** ***3. Since this event also has a LOSCM, if you incorrectly applied the RIA readings to the Fuel Clad Barriers in Encl. 4.1 and got 5 points from that you would then have to add the 5 points from RCS barriers due to LOSCM which would result in 10 points and a SAE.***

Q#/	1. LOK (C/A)	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
															Accepted by RFA 9/30/10 ***Revised format based on Chief Examiner feedback.***
77	C	3	X									Y	Y	E S	000015G2.2.44 **See stem comment on Q 76.** R. Aiello 09/07/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
78	C	3	X									Y	Y	E S	APE025AA2.04 **See stem comment on Q 76.** I think this Q and the two preceding ones should be written as follows: Suggest writing this and similar Qs as follows: WOOTF actions would be performed first, in accordance with AP/26, Loss of Decay heat removal, and state the reasons for the action? R. Aiello 09/07/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
79	C	3	X				X					Y	Y	E S	EPE038EA2.16 **See stem comment on Q 76.** The stem makes no sense! Per the reference, the Q should be written as follows: WOOTF describes the actions required if the 1B SG level reaches the main steam line in accordance with **(what procedure)?** Distractor A is NOT plausible. There are no cases where a ruptured SG would be unisolated in any circumstance. How did this get by validation? R. Aiello 09/07/10 ***Adjusted format based on Chief Examiner feedback. The forced cooldown tab of the EOP does provide guidance to unsolate a SG that has been isolated due to a MSLB to "trickle feed" it. This occurs if both SG's have been isolated and at least one can be fed without harming plant equipment or personnel. Guidance begins at step 18 of FCD tab.*** ***Accepted by RFA 9/30/10***

Q#/	1. LOK (C/A)	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	C	3	X									Y	Y	E S	APE058AA2.02 **See stem comment on Q 76.** Make Fill in the Blank (FIB) with: "Restore DC input voltage ____. A. ONLY ... B. AND... C. ONLY ... D. AND ... R. Aiello 09/07/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
81	C	3	X									Y	Y	E S	BWE04G2.4.8 **See stem comment on Q 76.** R. Aiello 09/07/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
82	C	3	X									Y	Y	E S	APE032AA2.07 See stem comment on Q 76 R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
83	C	3	X			X						Y	Y	U E S	APE033G2.2.25 **See stem comment on Q 76.** Exceeding DNBR safety limits is not plausible because the reference does NOT address it anywhere. This Q is U until facility demonstrates the plausibility of distractors C and D. R. Aiello 09/08/10. ***Discuss with Chief Examiner. C/D are plausible because NI's are credited with preventing DNBR from being exceeded. The bases of TS 2.1.1 (Reactor Core Safety Limits) credits the flux based RPS trip setpoints for maintaining an acceptable DNBR. The answer is incorrect because the NI's credited are Power Range NI's (vs Wide Range). One of the four validators chose this answer.***

Q#/	1. LOK (C/A)	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
															Adjusted format based on Chief Examiner feedback. Re-ordered answers so that D is now correct to reduce number of A correct answers. ***Accepted by RFA 9/30/10***
84	C	3	X									Y	Y	E S	APE076AA2.02 **See stem comment on Q 76.** R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
85	C	3	X									Y	Y	E S	BWE10EA2.1 Change 1RIA-60 from 15 to 20 gpm stable to get it closer to the limit. **See stem comment on Q 76.** R. Aiello 09/08/10 ***Changed RIA-60 reading to 20 gpm and adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/30/10***
86	C	3	X			X						Y	Y	U S	SYS003A2.02 **See stem comment on Q 76.** If the applicant knows the motor stator temperature and not the upper guide bearing temperature (or vice versa), C and D distractors will be eliminated. Add both temps for both 1A2 and 1B2. This Q is U because of potentially 2 NPDs. R. Aiello 09/08/10 ***Added both temperatures to both RCP's and adjusted format based on feedback from Chief Examiner.*** ***Accepted by RFA 9/30/10***
87	C	3					X					Y	Y	E S	SYS006G2.4.30 Is B potentially a correct answer since the unit is shutdown to mode 3? This Q is E until facility verifies. R. Aiello 09/08/10 ***Discuss with Chief Examiner. Condition E of TS 3.7.5 (EFW System) applies when in MODE 1, 2, or 3. This means that even in MODE 3, TS does not require***

Q#/	1. LOK (C/A)	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
															initiating a shutdown when both trains of EFDW are inoperable therefore B is not a correct answer. ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
88	C	3	X									Y	Y	E S	SYS007A2.06 **See stem comment on Q 76.** R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
89	C	3	X									Y	Y	E S	SYS064G2.2.12 **See stem comment on Q 76.** R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
90	M	2					X					Y	Y	E S	The Q is not balanced. If the answer is not known, distractor D will NOT be chosen. Create 2 "can NOT continue" choices and a reason for each in order to psychometrically balance this Q. As it stands, D is NP. R. Aiello 09/08/10 ***Revised C/D and adjusted format based on Chief Examiners feedback.*** ***Accepted by RFA 9/30/10***
91	M	2				X						~~N~~ Y	Y	~~U~~ E S	SYS034A2.03 If A was correct, C would be correct also. The 2nd part (b) of the KA is NOT met.. This Q is U because the KA is NOT met and there are psychometrically flaws in two of the distractors (A and C). R. Aiello 09/08/10 ***Discuss with Chief Examiner.*** ***Do not agree with psychometric flaw issue raised by Chief Examiner for A/C since stem states MINIMUM level of approval.*** ***KA match was agreed on prior to submittal as CE agreed we could ask question on procedural steps***

Q#/	1. LOK (C/A)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only		
															take to prevent mispositioned Fuel Element rather than asking about "correct, control, or mitigate" after a mispositioned Fuel Element. ***Added procedure reference to the stem.*** ***Accepted by RFA 9/30/10***
92	M	2	X									Y	Y	**E** **S**	SYS068G2.2.44 **See stem comment on Q 76.** R. Aiello 09/07/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
93	M	2	X									Y	Y	**E** **S**	SYS035G2.4.6 **See stem comment on Q 76.** R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
94	C	3	X									Y	Y	**E** **S**	G2.1.34 **See stem comment on Q 76.** R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner feedback and added "initial" to ensure only one correct answer.*** ***Accepted by RFA 9/30/10***
95	C	3	X									Y	Y	**E**	G2.1.5 **See stem comment on Q 76.** R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***
96	M	2										Y	Y	**S**	G2.2.40 No Comments R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner generic feedback.***
97	M	1										Y	Y	**U**	G2.3.12 This Q has no discriminatory value. The 52 year old male

Q#/	1. LOK (C/A)	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
		2												S	has nothing to lose. Replace the question. This Q is U because the Q has no discriminatory value R. Aiello 09/08/10 ***Changed question based on CE feedback*** ***Accepted by RFA 9/30/10***
98	C	3	X			X						Y	Y	E S	G2.3.6 **See stem comment on Q 76.** This Q would have more DV if the Unit 2 RB purge were not in progress and the answer was ANY SRO. The Q will still meet the KA. Since this Q is borderline 2 distractors NP, it is an E. R. Aiello 09/08/10 ***Revised question based on Chief Examiners feedback.*** ***Accepted by RFA 9/30/10***
99	C	2										Y	Y	S	G2.4.12 No Comments R. Aiello 09/08/10
100	M	2	X									Y	Y	E S	G2.4.44 **See stem comment on Q 76.** R. Aiello 09/08/10 ***Adjusted format based on Chief Examiner feedback.*** ***Accepted by RFA 9/30/10***

__ 14 - U's 12 RO/2 SRO
__ 62 - E's
__ 24 - S's

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

Facility: Oconee	Date of Exam: November 3/4, 2010	Exam Level: **RO/SRO**

Item Description	Initials a	b	c
1. Clean answer sheets copied before grading			
2. Answer key changes and question deletions justified and documented	NA	NA	NA
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	NA	NA	NA
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	Ronald F. Aiello /	11/9/10
b. NRC Reviewer(*)	Edwin Lea, Jr. / Edwin Lea, Jr.	11/9/2010
c. NRC Chief Examiner (*)	Ronald F. Aiello /	11/9/10
d. NRC Supervisor (*)	Malcolm T. Widmann /	11/10/10

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2	A B	C D E
3	A B	C D E
4	A B	C D E
5	A	B C D E
6	A B	C D E
7	A B C	D E
8	A B C	D E
9	B	A C D E
10	A	B C D E
11	A B	C D E
12	B	A C D E
13	A	B C D E
14	B	A C D E
15	A	B C D E
16	A B	C D E
17	A B	C D E
18	A B C	D E
19	A B C	D E
20	A B C	D E
21	A B	C D E
22	B	A C D E
23	B	A C D E
24	A	B C D E
25	A B	C D E
26	A	B C D E
27	A	B C D E
28	A B	C D E
29	A	B C D E
30	A B C	D E
31	A	B C D E
32	B	A C D E
33	A	B C D E
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35	A B C	D E
36	A	B C D E
37	A	B C D E
38	A B C	D E
39	A B	C D E
40	A	B C D E
41	A	B C D E
42	A	B C D E
43	A	B C D E
44	A B	C D E
45	B	A C D E
46	B	A C D E
47	A B C	D E
48	B	A C D E
49	B	A C D E
50	A B C	D E
51	A	B C D E
52	A B	C D E
53	B	A C D E
54	A C	B D E
55	A C	B D E
56	A B	C D E
57	B C	A D E
58	B	A C D E
59	A B C	D E
60	A B	C D E
61	A B	C D E
62	A B C	D E
63	A	B C D E
64	B	A C D E
65	A	B C D E
66	A C	B D E
67	A	B C D E
68	A	B C D E
69	B	A C D E
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71	A	B C D E
72	A B	C D E
73	B	A C D E
74	A B	C D E
75	B	A C D E
76	B	A C D E
77	A	B C D E
78	B	A C D E
79	B	A C D E
80	A	B C D E
81	A	B C D E
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84	B	A C D E
85	A	B C D E
86	A	B C D E
87	A B	C D E
88	A	B C D E
89	A	B C D E
90	B	A C D E
91	A	B C D E
92	B	A C D E
93	A	B C D E
94	A	B C D E
95	B	A C D E
96	A B C	D E
97	A B	C D E
98	B	A C D E
99	A B	C D E
100	A B C	D E

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PERCENT CORRECT
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1	Ⓐ	● Ⓒ Ⓓ Ⓔ
2	Ⓐ Ⓑ	● Ⓓ Ⓔ
3	Ⓐ Ⓑ	● Ⓓ Ⓔ
4	Ⓐ Ⓑ	● Ⓓ Ⓔ
5	Ⓐ	● Ⓒ Ⓓ Ⓔ
6	Ⓐ Ⓑ	● Ⓓ Ⓔ
7	Ⓐ Ⓑ Ⓒ	● Ⓔ
8	Ⓐ Ⓑ Ⓒ	● Ⓔ
9	●	Ⓑ Ⓒ Ⓓ Ⓔ
10	Ⓐ	● Ⓒ Ⓓ Ⓔ
11	Ⓐ	Ⓑ ● Ⓓ Ⓔ
12	●	Ⓑ Ⓒ Ⓓ Ⓔ
13	Ⓐ	● Ⓒ Ⓓ Ⓔ
14	●	Ⓑ Ⓒ Ⓓ Ⓔ
15	Ⓐ	● Ⓒ Ⓓ Ⓔ
16	Ⓐ Ⓑ	● Ⓓ Ⓔ
17	Ⓐ Ⓑ	● Ⓓ Ⓔ
18	Ⓐ Ⓑ Ⓒ	● Ⓔ
19	Ⓐ Ⓑ Ⓒ	● Ⓔ
20	Ⓐ Ⓑ Ⓒ	● Ⓔ
21	Ⓐ Ⓑ	● Ⓓ Ⓔ
22	●	Ⓑ Ⓒ Ⓓ Ⓔ
23	●	Ⓑ Ⓒ Ⓓ Ⓔ
24	Ⓐ	● Ⓒ Ⓓ Ⓔ
25	Ⓐ Ⓑ	● Ⓓ Ⓔ
26	Ⓐ Ⓑ	● Ⓓ Ⓔ
27	Ⓐ	● Ⓒ Ⓓ Ⓔ
28	Ⓐ Ⓑ	● Ⓓ Ⓔ
29	Ⓐ	● Ⓒ Ⓓ Ⓔ
30	Ⓐ Ⓑ Ⓒ	● Ⓔ
31	Ⓐ Ⓑ	● Ⓓ Ⓔ
32	●	Ⓑ Ⓒ Ⓓ Ⓔ
33	Ⓐ	● Ⓒ Ⓓ Ⓔ
34	●	Ⓑ Ⓒ Ⓓ Ⓔ
35	Ⓐ Ⓑ Ⓒ	● Ⓔ
36	Ⓐ	● Ⓒ Ⓓ Ⓔ
37	Ⓐ Ⓑ	● Ⓓ Ⓔ
38	Ⓐ Ⓑ Ⓒ	● Ⓔ
39	Ⓐ Ⓑ	● Ⓓ Ⓔ
40	Ⓐ	● Ⓒ Ⓓ Ⓔ
41	Ⓐ	● Ⓒ Ⓓ Ⓔ
42	Ⓐ	● Ⓒ Ⓓ Ⓔ
43	Ⓐ	● Ⓒ Ⓓ Ⓔ
44	Ⓐ Ⓑ	● Ⓓ Ⓔ
45	●	Ⓑ Ⓒ Ⓓ Ⓔ
46	●	Ⓑ Ⓒ Ⓓ Ⓔ
47	Ⓐ Ⓑ Ⓒ	● Ⓔ
48	●	Ⓑ Ⓒ Ⓓ Ⓔ
49	●	Ⓑ Ⓒ Ⓓ Ⓔ
50	Ⓐ Ⓑ Ⓒ	● Ⓔ
51	Ⓐ	● Ⓒ Ⓓ Ⓔ
52	Ⓐ Ⓑ Ⓒ	● Ⓔ
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56	Ⓐ Ⓑ Ⓒ	● Ⓔ
57	●	Ⓑ Ⓒ Ⓓ Ⓔ
58	●	Ⓑ Ⓒ Ⓓ Ⓔ
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61	Ⓐ Ⓑ	● Ⓓ Ⓔ
62	Ⓐ Ⓑ Ⓒ	● Ⓔ
63	Ⓐ Ⓑ	● Ⓓ Ⓔ
64	●	Ⓑ Ⓒ Ⓓ Ⓔ
65	Ⓐ	● Ⓒ Ⓓ Ⓔ
66	Ⓐ Ⓑ	● Ⓓ Ⓔ
67	Ⓐ	● Ⓒ Ⓓ Ⓔ
68	Ⓐ	● Ⓒ Ⓓ Ⓔ
69	●	Ⓑ Ⓒ Ⓓ Ⓔ
70	Ⓐ Ⓑ	● Ⓓ Ⓔ
71	Ⓐ	● Ⓒ Ⓓ Ⓔ
72	Ⓐ Ⓑ Ⓒ	● Ⓔ
73	●	Ⓑ Ⓒ Ⓓ Ⓔ
74	Ⓐ Ⓑ Ⓒ	● Ⓔ
75	●	Ⓑ Ⓒ Ⓓ Ⓔ
76	●	Ⓑ Ⓒ Ⓓ Ⓔ
77	Ⓐ Ⓑ	● Ⓓ Ⓔ
78	●	Ⓑ Ⓒ Ⓓ Ⓔ
79	●	Ⓑ Ⓒ Ⓓ Ⓔ
80	Ⓐ Ⓑ	● Ⓓ Ⓔ
81	Ⓐ Ⓑ	● Ⓓ Ⓔ
82	Ⓐ	● Ⓒ Ⓓ Ⓔ
83	Ⓐ Ⓑ	● Ⓓ Ⓔ
84	●	Ⓑ Ⓒ Ⓓ Ⓔ
85	Ⓐ Ⓑ Ⓒ	● Ⓔ
86	Ⓐ	● Ⓒ Ⓓ Ⓔ
87	Ⓐ Ⓑ Ⓒ	● Ⓔ
88	Ⓐ	● Ⓒ Ⓓ Ⓔ
89	Ⓐ	● Ⓒ Ⓓ Ⓔ
90	●	Ⓑ Ⓒ Ⓓ Ⓔ
91	Ⓐ	Ⓑ ● Ⓓ Ⓔ
92	●	Ⓑ Ⓒ Ⓓ Ⓔ
93	Ⓐ	● Ⓒ Ⓓ Ⓔ
94	Ⓐ Ⓑ	● Ⓓ Ⓔ
95	●	Ⓑ Ⓒ Ⓓ Ⓔ
96	Ⓐ Ⓑ Ⓒ	● Ⓔ
97	Ⓐ Ⓑ	● Ⓓ Ⓔ
98	●	Ⓑ Ⓒ Ⓓ Ⓔ
99	Ⓐ Ⓑ Ⓒ	● Ⓔ
100	Ⓐ Ⓑ Ⓒ	● Ⓔ

FEED IN THIS DIRECTION

NUMBER CORRECT
PERCENT CORRECT
ROSTER NUMBER
SCORE
RESCORE

SCANTRON

COMBINED POINTS EARNED
COMBINED PERCENT CORRECT
LETTER GRADE
SCORE
RESCORE

100 ITEM

ANSWER KEY INFO.
OF KEYS
ITEM COUNT

PERFORMANCE ASSESSMENT
% OF TOTAL SCORE (00 = 100%)
POINTS EARNED
EQUAL PT VALUE

MARK ONE

NAME KEY (5R0)
SUBJECT
PERIOD DATE

MARKING INSTRUCTIONS
Use a No. 2 Pencil
Ⓐ ● Ⓒ Ⓓ Ⓔ
Fill oval completely
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
Erase cleanly

STUDENT ID NUMBER