Facility: Brunswick 2010-302 Date of Examination: 12/6/2010

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)	
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	
-120	3. Facility contact briefed on security and other requirements (C.2.c)	
-120	4. Corporate notification letter sent (C.2.d)	
[-90]	[5. Reference material due (C.1.e; C.3.c; Attachment 3)]	
{-75} Delivered Sept 16 Sept 22	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) ↳ By the NRC	
{-70} 10/7/10	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	
{-45} 10/19/10	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)	
-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)	

* Target dates are generally based on facility-prepared examinations and are keyed to the examination date identified in the corporate notification letter. They are for planning purposes and may be adjusted on a case-by-case basis in coordination with the facility licensee.
[Applies only] {Does not apply} to examinations prepared by the NRC.

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

Facility: Brunswick Date of Examination: December 2010

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.		N/A	
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.		N/A	
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.		N/A	
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.		N/A	
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	Michael M. Nemec /	10/18/10
b. Facility Reviewer (*)	LEONARD R. BELLER / Leonard R. Beller	10/18/2010
c. NRC Chief Examiner (#)	Phillip G. Capehart / P.G. Capehart	11/26/2010
d. NRC Supervisor	MARGOLIT. WIDMANN / Margo T. Widmann	11/29/10

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 12/06 – 12/20/2010 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 12/06 – 12/20/2010. 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.	MICHAEL M. NEMEC	FACILITY AUTHOR/ EXAM DEVELOPMENT COORDINATOR		5/24/10		12/20/10
2.	Robert Bolin	EXAM WRITER		5/24/10		12/20/10
3.	Chuck VanSlyke	Simulator Support		7/15/10	VIA TELECOM	12/21/10
4.	BRYAN WESTER	REACTOR ENG		8/10/10	VIA Telecom	12/21/10
5.	LEONARD R. BELLER	FACILITY REP / OPS TRN SUPT.		8/23/10		12/20/10
6.	Edward HAWKINS	Simulator Support		8/25/10	VIA Telecom	12/21/10
7.	David Cribb	Reactor Operator		9/8/10		12/21/10
8.	Jason Kerns	Reactor Operator		9/8/10	VIA Telecom	12/21/10
9.	MARK DeWITT	CRS		9/8/10		12/21/10
10.	R.O. Moore	EXAM Reviewer - RNP		10/5/10	VIA Email (attached)	12/21/10
11.	Archie Lucky	Exam Reviewer - HNP		10/5/10	VIA Email (attached)	12/21/10
12.	E. Walker	REACTOR OPERATOR		10/4/10		12/21/10
13.	S. MYERS	SENIOR REACTOR OPERATOR		10/14/10	VIA Telecom	12/21/10
14.	BYRON CROKER	SENIOR REACTOR OPERATOR		11/15/10	VIA Telecom	12/21/10
15.	Jeffrey Dewey	SIMULATOR SUPPORT		12/6/2010	VIA Telecom	12/21/10

NOTES:

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

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I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 12/06 – 12/20/2010 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 12/06 – 12/20/2010. 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.	M.A. Reasoner	Supv. - LOT		12/6/10		12-20-10	
2.	Curtis Dunsmore	Manager, Shift Operations		12/6/10		12-21-10	
3.	STEVE GLASGOW	INSTRUCTOR		12/6/10		12-20-10	
4.	Leann Spencer	SEQUESTER		12-6-10	via Telecom	12/21/10	
5.	Keith Bowden	Instructor		12/6/10		12/20/10	
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							

NOTES:

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

Facility: Brunswick Date of Examination: December 2010

Examination Level: RO ■ *SRO-I* ■ Operating Test Number: FINAL

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	*R, M*	*Battery Ground Calculation*
Conduct of Operations	*R, M*	*Evaluate Overtime Eligibility*
Equipment Control	*R, M*	*Surveillance Acceptance Criteria Review*
Radiation Control	*R, M, P*	*Determine Stay Times in a High Radiation Area*
Emergency Procedures/Plan	***R, N***	***(SRO-I only) Protective Action Recommendations (PAR)***

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

* Type Codes & Criteria:

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

Facility: Brunswick	Date of Examination: Dec 2010
Exam Level: RO ■ SRO-I ■	Operating Test No.: FINAL

Control Room Systems@ (8 for RO); (7 for SRO-I)		
System / JPM Title	Type Code*	Safety Function
a. Vent DW w/stack Rad Mon failure	S, P, A	9
b. SULCV in service after scram	S, P,M, L, A	2
c. Resetting CO-FIC-49	S, N	8
d. SLC Initiation w/RWCU failure	S, A, D, E	1
e. Crosstie 480V E-Busses	S, D, E	6
f. Reopen MSIVs using hard card	S, D	3
g. RCIC start in Pressure Control with isolation failure	S, N, A	4
h. (RO only) Reset Nitrogen Backup System	S, P	5
In-Plant Systems@ (3 for RO/SRO-I)		
i. SBGT Deluge Reset	R, D	8
j. Vent the Scram Air Header	R, A, E, D	1
k. Heater Drain Pump Injection	R, E, D	2

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

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

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

Facility: Brunswick Date of Examination: 12/2010 Operating Test Number: ~~Draft~~ FINAL

	1. General Criteria	Initials a	b*	c#
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	MM	LRB	DJC
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	MM	LRB	DJC
c.	The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)	MM	LRB	DJC
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	MM	LRB	DJC
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	MM	LRB	DJC
	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	MM	LRB	DJC
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.	MM	LRB	DJC
	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.		MM	LRB	DJC

	Printed Name / Signature	Date
a. Author	MICHAEL M. NEMEC / Michael M. Nemec	10/13/10
b. Facility Reviewer(*)	LEONARD R. BELLER / Leonard R. Beller	10/18/2010
c. NRC Chief Examiner (#)	Phillip G. Capehart / PGCapehart	11/26/2010
d. NRC Supervisor	MALCOLM T. WIDDISS / Malcolm T. Widdiss	11/29/10

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

ES-301 **Simulator Scenario Quality Checklist** Form ES-301-4

Facility: Brunswick Date of Exam: December 2010 Scenario Numbers: 1/2/3/5/6 Operating Test No.: FINAL

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

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

Facility: Brunswick		Date of Exam: December 2010				Operating Test No.: FINAL										
APPLICANT	EVENT TYPE	Scenarios												TOTAL	MINIMUM(*)		
		1			2			3			5						
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U
RO 1 ■ SRO-I [ ] SRO-U [ ]	RX					2b								1	1	1	0
	NOR			2						1				2	1	1	1
	I/C			4,7		1,3,6				3,4				7	4	4	2
	MAJ			6		6				6				3	2	2	1
	TS														0	2	2
RO 2 ■ SRO-I [ ] SRO-U [ ]	RX					2b								1	1	1	0
	NOR			2									1	2	1	1	1
	I/C			4,7		1,3,6							3,5,6a	8	4	4	2
	MAJ			6		6							6,7	4	2	2	1
	TS														0	2	2
RO [ ] SRO-I 1 ■ SRO-U [ ]	RX	1							3a					3	1	1	0
	NOR	2					2a							2	1	1	1
	I/C	3,4,5, 6,7					4,5,6		5,7					10	4	4	2
	MAJ	6					6		6					3	2	2	1
	TS	0,3,5												3	0	2	2
RO [ ] SRO-I 3 ■ SRO-U [ ]	RX	1										3a		2	1	1	0
	NOR	2					2a							2	1	1	1
	I/C	3,4,5, 6,7					4,5,6					2,4,7 a		11	4	4	2
	MAJ	6					6					6,7		4	2	2	1
	TS	0,3,5												3	0	2	2
RO [ ] SRO-I 4 ■ SRO-U [ ]	RX		1		2b						3a			3	1	1	0
	NOR				2a						1			2	1	1	1
	I/C		3,5,6		1,3,4,5, 6						2,3,4, 5,6a, 7a			14	4	4	2
	MAJ		6		6						6,7			4	2	2	1
	TS				1,3,4						0,2,4			6	0	2	2
RO [ ] SRO-I 5 ■ SRO-U [ ]	RX	1							3a					2	1	1	0
	NOR	2											1	2	1	1	1
	I/C	3,4,5, 6,7							5,7				3,5, 6a	10	4	4	2
	MAJ	6							6				6,7	4	2	2	1
	TS	0,3,5												3	0	2	2

Facility: Brunswick		Date of Exam: December 2010															
APPLICANT	EVENT TYPE	Scenarios												TOTAL	MINIMUM(*)		
		2			3			5									
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U
RO 3	RX														1	1	0
SRO-I ☐	NOR														1	1	1
SRO-U ☐	I/C														4	4	2
	MAJ														2	2	1
	TS														0	2	2
RO ☐	RX	2b				3a								2	1	1	0
SRO-I 8 ■	NOR	2a								1				2	1	1	1
SRO-U ☐	I/C	1,3,4,5,6				5,7				3,5,6a				10	4	4	2
	MAJ	6				6				6,7				4	2	2	1
	TS	1,3,4												3	0	2	2
RO ☐	RX		2b					3a						2	1	1	0
SRO-I 9 ■	NOR						1	1						2	1	1	1
SRO-U ☐	I/C		1,3,6				3,4	2,3,4,5,6a,7a						11	4	4	2
	MAJ		6				6	6,7						4	2	2	1
	TS							0,2,4						3	0	2	2
RO ☐	RX				3a				3a					2	1	1	0
SRO-I 10 ■	NOR			2a	1									2	1	1	1
SRO-U ☐	I/C			4,5,6	3,4,5,7				2,4,7a					10	4	4	2
	MAJ			6	6				6,7					4	2	2	1
	TS				2,4									2	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: Brunswick		Date of Exam: December 2010			Operating Test No.: FINAL														
APPLICANT	EVENT TYPE	Scenarios												TOTAL	MINIMUM(*)		
		1			3			5			2						
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U
RO ☐ SRO-I 2 ■ SRO-U ☐	RX		1		3a						2b			3	1	1	0
	NOR				1						2a			2	1	1	1
	I/C		3,5,6		3,4,5,7						1,3,4,5,6			12	4	4	2
	MAJ		6		6						6			3	2	2	1
	TS				2,4						1,3,4			5	0	2	2
RO ☐ SRO-I 6 ■ SRO-U ☐	RX		1					3a						2	1	1	0
	NOR						1	1						2	1	1	1
	I/C		3,5,6				3,4	2,3,4,5,6a,7a						11	4	4	2
	MAJ		6				6	6,7						4	2	2	1
	TS							2,4						2	0	2	2
RO ☐ SRO-I 7 ■ SRO-U ☐	RX				3a				3a					2	1	1	0
	NOR			2	1									2	1	1	1
	I/C			4,7	3,4,5,7				2,4,7a					9	4	4	2
	MAJ			6	6				6,7					4	2	2	1
	TS				2,4									2	0	2	2
RO ☐ SRO-I ☐ SRO-U ☐	RX														1	1	0
	NOR														1	1	1
	I/C														4	4	2
	MAJ														2	2	1
	TS														0	2	2

instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must 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: Brunswick Date of Examination: December 2010 Operating Test No.:Final

Competencies	APPLICANTS															
	RO1 ■ SRO-I □ SRO-U □				RO2 ■ SRO-I □ SRO-U □				RO3 □ SRO-I □ SRO-U □				RO □ SRO-I □ SRO-U □			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	2	3		1	2	5		1	2	3	4	1	2	3	4
Interpret/Diagnose Events and Conditions	2,4,6, 7,8	1,2b,3 ,6	1,3,4, 6,8,9		2,4,6, 7,8	1,2b,3 ,6	1,3,5, 6,6a,7 ,8									
Comply With and Use Procedures (1)	All	All	All		All	All	All									
Operate Control Boards (2)	2,4,6, 7,8	1,2b,3 ,6	1,3,4, 6,8,9		2,4,6, 7,8	1,2b,3 ,6	1,3,5, 6,6a,7 ,8									
Communicate and Interact	All	All	All		All	All	All									
Demonstrate Supervisory Ability (3)																
Comply With and Use Tech. Specs. (3)																

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

Instructions:

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

Facility: Brunswick Date of Examination: December 2010 Operating Test No.: Final

Competencies	APPLICANTS															
	RO ☐ SRO-I1 ■ SRO-U ☐				RO ☐ SRO-I2 ■ SRO-U ☐				RO ☐ SRO-I3 ■ SRO-U ☐				RO ☐ SRO-I4 ■ SRO-U ☐			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	2	3		1	2	3		1	2	5		1	2	5	
Interpret/Diagnose Events and Conditions	All	2a,4,5,6	3a,5,6,7,8,9		1,3,5,6,8	All	All		All	2a,4,5,6	2,3a,4,6,7,7a,8		1,3,5,6,8	All	All	
Comply With and Use Procedures (1)	All	All	All		All	All	All		All	All	All		All	All	All	
Operate Control Boards (2)		2a,4,5,6	3a,5,6,7,8,9		1,3,5,6,8					2a,4,5,6	2,3a,4,6,7,7a,8		1,3,5,6,8			
Communicate and Interact	All	All	All		All	All	All		All	All	All		All	All	All	
Demonstrate Supervisory Ability (3)	All	All				All	All		All					All	All	
Comply With and Use Tech. Specs. (3)	0,1,5	1,4				1,3,4	2,4		0,1,5					1,3,4	2,4	

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: Brunswick Date of Examination: December 2010 Operating Test No.: Final

Competencies	APPLICANTS															
	RO ☐ SRO-I5 ■ SRO-U ☐				RO ☐ SRO-I6 ■ SRO-U ☐				RO ☐ SRO-I7 ■ SRO-U ☐				RO ☐ SRO-I8 ■ SRO-U ☐			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	3	5		1	3	5		1	3	5		2	3	5	
Interpret/Diagnose Events and Conditions	All	3a,5,6 7,8,9	1,3,5, 6,6a,7 ,8		1,3, 5,6, 8	1,3,4, 6,8,9	All		2,4, 6,7, 8	All	2,3a,4 ,6,7,7 a,8		All	3a,5,6 7,8,9	1,3,5, 6,6a,7 ,8	
Comply With and Use Procedures (1)	All	All	All		All	All	All		All	All	All		All	All	All	
Operate Control Boards (2)		3a,5,6 7,8,9	1,3,5, 6,6a,7 ,8		1,3, 5,6, 8	1,3,4, 6,8,9			2,4, 6,7, 8		2,3a,4 ,6,7,7 a,8			1a,5,6 ,7,8,9	1,3,5, 6,6a,7 ,8	
Communicate and Interact	All	All	All		All	All	All		All	All	All		All	All	All	
Demonstrate Supervisory Ability (3)	All						All			All			All			
Comply With and Use Tech. Specs. (3)	1,3,5						2,4			2,4			1,3, 5			

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

Instructions:

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

Facility: Brunswick	Date of Examination: December 2010	Operating Test No.: Final

Competencies	APPLICANTS															
	RO ☐ SRO-I9 ■ SRO-U ☐				RO ☐ SRO-I10 ■ SRO-U ☐				RO ☐ SRO-I ☐ SRO-U ☐				RO ☐ SRO-I ☐ SRO-U ☐			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	2	3	5		2	3	5		1	2	3	4	1	2	3	4
Interpret/Diagnose Events and Conditions	1,2b,3,6	1,3,4,6,8,9	All		2a,4,5,6	All	2,3a,4,6,7,7a,8									
Comply With and Use Procedures (1)	All	All	All		All	All	All									
Operate Control Boards (2)	1,2b,3,6	1,3,4,6,8,9			2a,4,5,6		2,3a,4,6,7,7a,8									
Communicate and Interact	All	All	All		All	All	All									
Demonstrate Supervisory Ability (3)			All			All										
Comply With and Use Tech. Specs. (3)			2,4			2,4										

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: BRUNSWICK Date of Exam: December 2010

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	4	4	N/A			3	3	N/A		3	20	3	4	7
	2	1	1	2				1	1			1	7	1	2	3
	Tier Totals	4	5	6				4	4			4	27	4	6	10
2. Plant Systems	1	2	3	3	2	3	1	2	2	3	3	2	26	2	3	5
	2	1	1	2	1	1	1	1	1	1	1	1	12	0 | 1	2	3
	Tier Totals	3	4	5	3	4	2	3	3	4	4	3	38	3	5	8
3. Generic Knowledge and Abilities Categories		1			2			3			4		10	1	2	3	4	7
		2			2			3			3			2	2	2	1	

1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
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.
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.

ES-401, REV 9	T1G1 BWR EXAMINATION OUTLINE														FORM ES-401-1
KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
295001AK3.01	Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	3.4	3.6	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Reactor water level response.....
295003AK3.06	Partial or Complete Loss of AC / 6	3.7	3.7	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Containment isolation.....
295004AA1.03	Partial or Total Loss of DC Pwr / 6	3.4	3.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	A.C. electrical distribution.....
295005AA2.06	Main Turbine Generator Trip / 3	2.6	2.7	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Feedwater temperature.....
295006AK1.02	SCRAM / 1	3.4	3.7	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Shutdown margin.....
295016AK3.01	Control Room Abandonment / 7	4.1	4.2	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Reactor SCRAM.....
295018G2.1.32	Partial or Total Loss of CCW / 8	3.8	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to explain and apply all system limits and precautions.
295019AK2.11	Partial or Total Loss of Inst. Air / 8	2.5	2.6	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Radwaste.....
295021AK1.02	Loss of Shutdown Cooling / 4	3.3	3.4	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Thermal stratification.....
295023AK2.03	Refueling Acc Cooling Mode / 8	3.4	3.6	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Radiation monitoring equipment.....
295024EK3.01	High Drywell Pressure / 5	3.6	4.0	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Drywell spray operation: Mark-I&II.....

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
295025EK1.04	High Reactor Pressure / 3	3.6	3.9	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Decay heat generation.....
295026EK2.02	Suppression Pool High Water Temp. / 5	3.6	3.8	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Suppression pool spray: Plant-Specific.....
295028EK2.01	High Drywell Temperature / 5	3.7	4.1	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Drywell spray: Mark-I&II.....
295030G2.4.30	Low Suppression Pool Wtr Lvl / 5	2.7	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of events related to system operations/status that must be reported to internal orginizations or outside agencies.
295031EA1.01	Reactor Low Water Level / 2	4.4	4.4	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Low pressure coolant injection (RHR): Plant-Specific.
295037EA2.01	SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1	4.2	4.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Reactor power.....
295038EA1.07	High Off-site Release Rate / 9	3.6	3.8	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Control room ventilation: Plant-Specific.....
600000G2.4.6	Plant Fire On Site / 8	3.7	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge symptom based EOP mitigation strategies.
700000AA2.07	Generator Voltage and Electric Grid Distrurbancecs	3.6	4.0	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Operational status of engineered safety features

ES-401, REV 9		T1G2 BWR EXAMINATION OUTLINE														FORM ES-401-1
KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G		TOPIC:
		RO	SRO													
295008G2.1.25	High Reactor Water Level / 2	3.9	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑		Ability to interpret reference materials such as graphs, monographs and tables which contain performance data.
295014AA1.06	Inadvertent Reactivity Addition / 1	3.3	3.4	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐		Reactor/turbine pressure regulating system.....
295015AK1.02	Incomplete SCRAM / 1	3.9	4.1	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Cooldown effects on reactor power.....
295020AA2.03	Inadvertent Cont. Isolation / 5 & 7	3.7	3.7	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐		Reactor power.....
295033EK3.02	High Secondary Containment Area Radiation Levels / 9	3.5	3.6	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		Reactor SCRAM.....
295034EK3.05	Secondary Containment Ventilation High Radiation / 9	3.6	3.9	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		Manual SCRAM and depressurization: Plant-Specific....
295036EK2.01	Secondary Containment High Sump/Area Water Level / 5	3.1	3.2	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		Secondary containment equipment and floor drain system

ES-401, REV 9		T2G1 BWR EXAMINATION OUTLINE														FORM ES-401-1
KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G		TOPIC:
		RO	SRO													
203000K2.01	RHR/LPCI: Injection Mode	3.5	3.5	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		Pumps
203000K2.03	RHR/LPCI: Injection Mode	2.7	2.9	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		Initiation logic
205000G2.2.44	Shutdown Cooling	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
206000A3.01	HPCI	3.6	3.5	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐		Turbine speed: BWR-2,3,4
206000A3.05	HPCI	4.3	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐		Reactor water level: BWR-2,3,4
209001K3.03	LPCS	2.9	3.0	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		Emergency generators
211000K5.01	SLC	2.7	2.9	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐		Effects of the moderator temperature coefficient of reactivity on the boron
211000K5.06	SLC	3.0	3.2	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐		Tank level measurement
212000A4.07	RPS	4.0	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐		System status lights and alarms
215003A2.02	IRM	3.5	3.7	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐		IRM inop condition
215004G2.4.2	Source Range Monitor	4.5	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑		Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
215005K4.08	APRM / LPRM	2.7	3.1	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Sampling of overall core power in each APRM (accomplished through LPRM assignments and symmetrical rod patterns)
217000K6.04	RCIC	3.5	3.5	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Condensate storage and transfer system
218000K4.04	ADS	3.5	3.6	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Insures adequate air supply to ADS valves: Plant-Specific
223002K1.08	PCIS/Nuclear Steam Supply Shutoff	3.4	3.5	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Shutdown cooling system/RHR
239002K3.01	SRVs	3.9	4.0	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Reactor pressure control
239002K3.03	SRVs	4.3	4.4	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Ability to rapidly depressurize the reactor
259002A4.01	Reactor Water Level Control	3.8	3.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	All individual component controllers in the manual mode
259002A4.11	Reactor Water Level Control	3.5	3.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	High level lockout reset controls: Plant-Specific
261000A1.07	SGTS	2.8	2.9	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	SBGTS train temperature
262001K2.01	AC Electrical Distribution	3.3	3.6	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Off-site sources of power
262002A3.01	UPS (AC/DC)	2.8	3.1	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Transfer from preferred to alternate source

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
263000K5.01	DC Electrical Distribution	2.6	2.9	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Hydrogen generation during battery charging. . . . .
264000A1.09	EDGs	3.0	3.1	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Maintaining minimum load on emergency generator (to prevent reverse power)
300000K1.02	Instrument Air	2.7	2.8	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Service air
400000A2.01	Component Cooling Water	3.3	3.4	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Loss of CCW pump

ES-401, REV 9	T2G2 BWR EXAMINATION OUTLINE														FORM ES-401-1
KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
202002A4.01	Recirculation Flow Control	3.3	3.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	MG sets
204000K4.02	RWCU	2.7	2.9	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Piping over-pressurization protection: Plant-Specific
214000K3.03	RPIS	3.1	3.2	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	RMCS: Plant-Specific
215002A2.04	RBM	2.7	2.8	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Power supply losses: BWR-3,4,5
223001G2.2.4	Primary CTMT and Aux.	3.6	3.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility.
226001A1.04	RHR/LPCI: CTMT Spray Mode	3.3	3.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Suppression pool temperature: Mark-I-II
230000K2.02	RHR/LPCI: Torus/Pool Spray Mode	2.8	2.9	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Pumps
234000K6.01	Fuel Handling Equipment	2.7	3.2	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Electrical power
259001K3.04	Reactor Feedwater	2.5	2.5	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	RWCU
271000K5.06	Offgas	2.7	2.7	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Catalytic recombination
272000K1.08	Radiation Monitoring	3.6	3.9	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Reactor protection system

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
288000A3.01	Plant Ventilation	3.8	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Isolation/initiation signals

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.43	Conduct of operations	4.1	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to use procedures to determine the effects on reactivity of plant changes
G2.1.7	Conduct of operations	4.4	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.
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.
G2.2.3	Equipment Control	3.8	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	(multi-unit license) Knowledge of the design, procedural and operational differences between units.
G2.3.11	Radiation Control	3.8	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to control radiation releases.
G2.3.12	Radiation Control	3.2	3.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiological safety principles pertaining to licensed operator duties
G2.3.13	Radiation Control	3.4	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiological safety procedures pertaining to licensed operator duties
G2.4.16	Emergency Procedures/Plans	3.5	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of EOP implementation hierarchy and coordination with other support procedures or guidelines.
G2.4.39	Emergency Procedures/Plans	3.9	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the RO's responsibilities in emergency plan implementation.
G2.4.6	Emergency Procedures/Plans	3.7	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge symptom based EOP mitigation strategies.

ES-401, REV 9 **SRO T1G1 BWR EXAMINATION OUTLINE** **FORM ES-401-1**

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
295004AA2.04	Partial or Total Loss of DC Pwr / 6	3.2	3.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	System lineups.....
295006G2.1.27	SCRAM / 1	3.9	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of system purpose and or function.
295016G2.4.31	Control Room Abandonment / 7	4.2	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of annunciators alarms, indications or response procedures
295019G2.4.18	Partial or Total Loss of Inst. Air / 8	3.3	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the specific bases for EOPs.
295023G2.1.20	Refueling Acc Cooling Mode / 8	4.6	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to execute procedure steps.
295028EA2.01	High Drywell Temperature / 5	4.0	4.1	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Drywell temperature.....
295037EA2.05	SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1	4.2	4.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Control rod position.....

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
295008G2.2.38	High Reactor Water Level / 2	3.6	4.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of conditions and limitations in the facility license.
295020G2.2.40	Inadvertent Cont. Isolation / 5 & 7	3.4	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to apply technical specifications for a system.
295034EA2.02	Secondary Containment Ventilation High Radiation / 9	3.7	4.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Cause of high radiation levels.....

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
203000G2.4.21	RHR/LPCI: Injection Mode	4.0	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the parameters and logic used to assess the status of safety functions
215005G2.1.20	APRM / LPRM	4.6	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to execute procedure steps.
261000A2.05	SGTS	3.0	3.1	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Fan trips
263000A2.02	DC Electrical Distribution	2.6	2.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Loss of ventilation during charging
400000G2.1.25	Component Cooling Water	3.9	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to interpret reference materials such as graphs, monographs and tables which contain performance data.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
233000G2.2.37	Fuel Pool Cooling/Cleanup	3.6	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to determine operability and/or availability of safety related equipment
239001G2.2.3	Main and Reheat Steam	3.8	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	(multi-unit license) Knowledge of the design, procedural and operational differences between units.
288000A2.01	Plant Ventilation	3.3	3.4	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	High drywell pressure: Plant-Specific

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.23	Conduct of operations	4.3	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform specific system and integrated plant procedures during all modes of plant operation.
G2.1.3	Conduct of operations	3.7	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of shift or short term relief turnover practices.
G2.2.23	Equipment Control	3.1	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to track Technical Specification limiting conditions for operations.
G2.2.43	Equipment Control	3.0	3.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the process used to track inoperable alarms
G2.3.14	Radiation Control	3.4	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities
G2.3.5	Radiation Control	2.9	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to use radiation monitoring systems
G2.4.28	Emergency Procedures/Plans	3.2	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of procedures relating to emergency response to sabotage.

Brunswick 2010-302

Tier / Group	Randomly Selected K/A	Reason for Rejection
		There were no rejected KAs for this exam

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

Facility: Brunswick [redacted] Date of Exam: 12/20/2010 Exam Level: RO [redacted] SRO

Item Description					Initial a	Initial b*	Initial c#
1.	Questions and answers are technically accurate and applicable to the facility.				m	[redacted]	[redacted]
2.	a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.				m	[redacted]	[redacted]
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401				m	[redacted]	[redacted]
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).				m	[redacted]	[redacted]
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)				m	[redacted]	[redacted]
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: 32/8	Modified: 2/0	New: 41/17	m	[redacted]	[redacted]
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: 34/6	C/A: 41/19		m	[redacted]	[redacted]
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.				m	[redacted]	[redacted]
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.				m	[redacted]	[redacted]
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.				m	[redacted]	[redacted]
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.				m	[redacted]	[redacted]

	Printed Name / Signature	Date
a. Author	MICHAEL M. NEMEC / [redacted]	10/18/10
b. Facility Reviewer (*)	LEONARD R. BELLER / [redacted]	10/18/2010
c. NRC Chief Examiner (#)	Phillip G. Capehart / [redacted]	11/25/2010
d. NRC Regional Supervisor	[redacted]	11/29/10

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.

If more than 20 percent of the submitted test items (with the operating test and RO/SRO written exams assessed separately) required replacement or significant modification, the report shall include a factual description of the test item changes (observations), including the number and types of test items replaced and/or significantly modified as a result of the joint NRC and facility licensee examination review process. The report shall also note that the overall submittal was outside the acceptable quality range expected by the NRC and that future examination submittals should incorporate any lessons learned from this effort.
To be considered a significantly modified question, at least one pertinent condition in the stem and at least one distractor must be changed from the original bank question. Changing the conditions in the stem such that one of the three distractors in the original question becomes the correct answer would also be considered a significant modification

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only			
1 (16)	F	2													S	215005 K4.08 (RO) Appears to meet the KA.
2 (18)	F	2				X									~~E~~ S	218000 K4.04 (RO) Appears to meet the KA. C is not plausible. If ONLY the ADS SRVs have backup N2 then how could ALL SRVs be equipped w/ accumulators on a loss of N2 backup? Are all 11 SRVs also ADS valves? 9/13/10, Reviewed w/licensee and accepted reasoning for C being plausible.
3 (19)	F	2													~~E~~ S	223001 G2.2.4 (RO) Appears to meet the KA. Poor sentence structure. Rewrite to say "and auto starts **its/their** associated cooler fan**(s)**". 9/13/10, Reviewed w/licensee. Sentence structure is OK as is.
4 (12)	F	2				X									~~E~~ S	214000 K3.03 (RO) Appears to meet the KA. C is not plausible. Inserting a scram is always going to work if the other work. C does not contain this item, therefore it's not plausible. Full core display is lost, is there any other method to determine rod position? 9/13/10, Reviewed w/licensee. Licensee agreed to change distractor C to include insert a scram and ....
5 (28)	F	3													~~E~~ S	259002 A4.11 (RO) Appears to meet the KA. Question is confusing as written. Do the operators read LI in the CR (shouldn't this be LI C32-R606)? The stem states LT level. Also change the question stem to state: "Which one.....logic and the status of the "RFP A & B High Level" status lights? Make sure the title is exactly as on the board. "RFP A & B High Level" or "RRP A & B High Level Trip/Reset". 9/13/10, Reviewed w/licensee. Licensee agreed to reword question to match exact MCR labeling. Also to rephrase question such that no one could make assumption that level was initially high on 'A' LT and therefore that distractor B could also be a correct answer.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
SRO 1 (85)	H	3				X									E S	S295008 G2.2.38 (SRO) Appears to meet the KA. The question is teaching in the stem. Remove the 2nd paragraph from the stem and change the 3rd paragraph to say WOOF is the reason a Reactor scram initiated from a main turbine trip is required...? 9/13/10, Reviewed w/licensee. Licensee agreed to remove 2nd sentence from the stem of the question and to look at replacing distractor A with something that is relevant to a Rx scram condition. 11/17/10 – Upon further review, agreed with the licensee to leave the question as is.
SRO 2 (90)															S	S295028 A2.01 (SRO) Appears to meet the KA.
SRO 3 (91)															E S	S295034 A2.02 Appears to meet the KA. Verify that the APP contains same direction for new & irradiated fuel. 9/13/10, Reviewed with licensee, APP contains same guidance for new/irradiated fuel bundle damage. 11/17/10 – C(1) & C(2) answer given away by Q#88 handout. Question changed for a "new fuel bundle". This changed the answer to "A". RX BLDG ROOM VENT RAD HIGH removed from the stem of the question.
SRO 4 (77)															E S	S215005 G2.1.20 Appears to meet the KA. Change the word "supplemental" actions to "supplementary" actions to match the section of the procedure. 9/13/10, Reviewed w/licensee. Licensee agreed to the change noted.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
SRO 5 (81)	H					X									~~U~~ E S	S263000 A2.02 Appears to meet the KA. Distractors B(2) and C(2) are not plausible. Suggested the licensee rewrite the 2nd question to ask "Which one of the following procedures contains the steps for mitigating the event?" Also asked the licensee to consider adding more information to the stem to make the 2nd distractor more plausible. 9/13/10, Reviewed w/licensee. Licensee agreed to the change noted. 11/12/10, The question should be broken into two questions. Is currently a run on sentence? 11/17/10 – Changed the stem to 2 sentences as noted, added the outside air temperature of 60 degrees F to add plausibility to "room temperature" choices.
																The questions from here up were submitted for early review and will not count as UNSATs unless they are left uncorrected on the final submittal.
1	H														S	11/17/10 - Appears to meet the KA. Originally evaluated as a GFES exam question. Upon review with the licensee the question is acceptable as is because the normal correlation for pump laws does not apply because there is a constant 70 volts per HZ relationship.
2	F														S	Appears to meet the KA.
3	F														S	Appears to meet the KA.
4	F														S	Appears to meet the KA.
5	H														S	Appears to meet the KA.

If more than 20 percent of the submitted test items (with the operating test and RO/SRO written exams assessed separately) required replacement or significant modification, the report shall include a factual description of the test item changes (observations), including the number and types of test items replaced and/or significantly modified as a result of the joint NRC and facility licensee examination review process. The report shall also note that the overall submittal was outside the acceptable quality range expected by the NRC and that future examination submittals should incorporate any lessons learned from this effort.
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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only			
6	H														E	Appears to meet the KA. B & C does not match the physics for this.
7	H														E S	Appears to meet the KA. The 1st answer can be deduced from the 2nd question. 11/17/10 – Changed the question so that no operator action is required for HPCI to auto inject (i.e. the answer is the same but for a different reason).
8	H														E S	Appears to meet the KA. Distractor D is not plausible. 11/22/10 – Changed distractor D from "DG1 Output breaker has no control power" to "alternate control power must be manually transferred".
9	H														E S	Appears to meet the KA. 11/18/10 – Reworded the answer choice to make symmetrical with other choices. Instead of saying "Allowing a low pressure ECCS injection following an ADS actuation". The new choice states, "ADS actuation with low pressure ECCS injection".
10	H														S	Appears to meet the KA.
11	H														S	Appears to meet the KA.
12	See above														S	
13	H														E S	Appears to meet the KA. A(2) & C(2) not plausible. 11/22/10 - Changed the 2nd part of the question to ask if the ARP procedure is used to resolve the issue.
14	H														S	Appears to meet the KA.
15	H														E S	Appears to meet the KA. C & D should not be "and", should be "OR". 11/17/10 - Changed as noted above.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only			
16	See above														S	
17	H														E S	Appears to meet the KA. Requested licensee to change pressure from 176# to 170# to increase the plausibility of the distracters. 11/23/10 Licensee agreed to the change noted.
18	See above															
19	See above															
20	H														S	Appears to meet the KA.
21	H														S	Appears to meet the KA.
22	F														S	Appears to meet the KA.
23	F														S	Appears to meet the KA.
24	H														S	Appears to meet the KA.
25	H														S	Appears to meet the KA.
26	F														S	Appears to meet the KA.
27	H														S	Appears to meet the KA.
28	See above														S	Appears to meet the KA.
29	H														S	Appears to meet the KA.
30	F														S	Appears to meet the KA.
31	H														S	Appears to meet the KA.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only			
32	F														E S	Appears to meet the KA. There is no mention of a LOCA in the question to match the distracters. 11/26/10 – The distractor explanation removed the LOCA criteria that did not apply to the conditions given.
33	H														S	Appears to meet the KA.
34	F														S	Appears to meet the KA.
35	H														S	Appears to meet the KA.
36	H														S	Appears to meet the KA.
37	F														E S	Appears to meet the KA. A(2) does not appear plausible. 11/17/10 - Reworded distractors to ask what happens to water level in the shroud vs the downcomer region.
38	H														S	Appears to meet the KA.
39	F														S	Appears to meet the KA.
40	H														S	Appears to meet the KA.
41	F														S	Appears to meet the KA.
42	H														S	Appears to meet the KA.
43	H														~~U~~ S	Appears to meet the KA. Distractors B & C do not appear plausible. 11/17/10 – Reworded question to ask for control valve status and thereby eliminating concern over plausibility.
44	F														E S	Appears to meet the KA. Choice B & C plausibility distractors backwards.
45	H														E S	Appears to meet the KA. B(2) is not plausible. 11/23/10 – Licensee reworded B(2) to make acceptable.
46	F														S	Appears to meet the KA.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
47	F														E S	Appears to meet the KA. Requested A & B be changed from "open" to "closed". 11/17/10 – Changed distractors as noted.
48	H														S	Appears to meet the KA.
49	F														U	Appears to meet the KA. A(2) & C(2) are not correct, therefore there is no correct answer.
50	F														S	Appears to meet the KA.
51	F														S	Appears to meet the KA.
52	F														E S	Appears to meet the KA. Request the licensee change the times for B & D to increase plausibility. 11/17/10 – Changes noted made by licensee.
53	F														E S	Appears to meet the KA. Requested licensee change D to "white". 11/17/10 – Changes noted made by licensee.
54	H														E S	Appears to meet the KA. Requested licensee change stem from -21" to +20". 11/17/10 – Changes noted made by licensee.
55	F														S	Appears to meet the KA.
56	F														S	Appears to meet the KA.
57	F														S	Appears to meet the KA.
58	F														S	Appears to meet the KA.
59	F														S	Appears to meet the KA.
60	H														S	Appears to meet the KA.
61	F														S	Appears to meet the KA.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
62	H														E	Appears to meet the KA. Distractor C is not plausible. It is not an auto isolation valve. Changed distractor C to the "I.A. hdr crosstie valve. It is an auto isolation valve.
63	H														S	Appears to meet the KA.
64	H														S	Appears to meet the KA.
65	H														S	Appears to meet the KA.
66	H														S	Appears to meet the KA.
67	F														S	Appears to meet the KA.
68	H														S	Appears to meet the KA.
69	F														S	Appears to meet the KA.
70	H														S	Appears to meet the KA.
71	H														S	Appears to meet the KA.
72	F														S	Appears to meet the KA.
73	F														S	Appears to meet the KA.
74	~~F~~														E S	Appears to meet the KA. Requested A(2) & B(2) be changed from EAL to ENF to make them more plausible.
75															~~U~~ S	Appears to meet the KA. This question is at the SRO level not at the RO level. 11/17/10 – The licensee wrote a new question that meet the KA criteria and is at the RO level.

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only			
76	H					X									~~E~~ S	Appears to meet the KA. A1 & B1 do not appear plausible. 11/17/10 - Changed stem to 2A RHR & 2A CS pump, loop B demin is not available. Only FP Cooling is available and it goes to A loop only. Reworded the question to ask whether or not you need to stop the pump or not. The pump can be stopped because it is not needed for "adequate core cooling".
77	See above														S	
78	H														S	Appears to meet the KA.
79	F														~~E~~ S	Appears to meet the KA 11/17/10 - Revised the stem to simplify the question. It now asks, is U-1 / U-2 MT Bypass System "Operable" or "Inoperable".
80	H														~~E~~ S	Appears to meet the KA 11/17/10 – Added "minimum" to the first half of the question to prevent the incorrect answer from being a subset of the correct choice and therefore the applicant could deduce that the higher temperature is always the correct answer.
81	See above															
82	H														S	Appears to meet the KA
83	H														S	Appears to meet the KA
84	F														~~E~~ S	Appears to meet the KA. A is not plausible. It is not a BOP system 11/17/10 – Changed distractor A to "Intake Structure".
85	See above															
86	H														S	Appears to meet the KA

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only			
87	H														~~E~~ S	Appears to meet the KA 11/17/10 – Changed stem wording to say "IAW"
88	H														S	Appears to meet the KA
89	L														S	Appears to meet the KA
90	See above															
91	See above															
92	H														E	Appears to meet the KA. RPS Lights removed from the stem. This will enhance the plausibility of A distractor.
93	H														E S	Appears to meet the KA. Rewrote question to shorten distractor length.
94	H														~~U~~ S	Appears to meet the KA. C & D are not plausible, a surveillance procedure does not contain guidance on plant operations. 11/17/10 – Changed C & D to GP-12, Power procedure.
95	H														E S	Two part question not needed. The 1st part of each distractor is the same. Removed the 1st part of each distractor. 11/17/10 – Changes made as noted.
96	H														S	
97	L														S	

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
98	H														E S	The 1st part is based on a procedure caution. This is RO knowledge. The 2nd part of each distractor requires SRO knowledge. 11/17/10 – The stem has been changed to give the RPV press (105#) to require interpretation of plant Mode. This changed the answer to correlate to Mode 4.
99	L														E S	11/17/10 – Requested stem changed from "Barrier(s) that has (have) been lost" to "Loss or Potential Loss" Changes made as noted.
100	L														S	

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

Facility: Brunswick Date of Exam: 12/20/2010 Exam Level: RO ■ SRO ■

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

	Printed Name/Signature	Date
a. Grader	MICHAEL M. NENEC / MMN	MM
b. Facility Reviewer(*)	N/A	
c. NRC Chief Examiner (*)	Phillip G Capehart / PJC	01/20/2011
d. NRC Supervisor (*)	MALCOLM T. WIDMANN / MTW	01/21/11

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