Facility: Vogtle 2011--301 Date of Examination: 3/14/11

Developed by: Written - Facility [X] NRC [ ] // Operating - Facility [X] 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}	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)	
{-70}	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	
{-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)	
-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:		Date of Examination:		
Item	Task Description	Initials a	b*	c#
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	N/A	N/A	N/A
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.	↓	↓	↓
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.			
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.			
2. 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.	EMT	GW	AMK
	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.	EMT	GW	AMK
	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.	EMT	GW	AMK
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.	EMT	GW	AMK
	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	EMT	GW	AMK
	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.	EMT	GW	AMK
4. GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.	EMT	GW	AMK
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	EMT	GW	AMK
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	EMT	GW	AMK
	d. Check for duplication and overlap among exam sections.	EMT	GW	AMK
	e. Check the entire exam for balance of coverage.	EMT	GW	AMK
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	EMT	GW	AMK

	Printed Name/Signature	Date
a. Author	Ernest M. Thornton Jr. E. M. Thornton Jr.	12/28/2010
b. Facility Reviewer (*)	GREG WAINWRIGHT Greg Wainwright	12/28/10
c. NRC Chief Examiner (#)	Phillip G. Capehart P.G. Capehart	1/6/10 11
d. NRC Supervisor	MALCOLM T. WIDMANN	01/06/11

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

HL-16 NRC

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

1. Pre-Examination

3/14/11 3/28/4

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 3/21/11 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 3/14/11 – 4/1/11

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

	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	GREG WAINWRIGHT	NUC OPS PLANT INST. - LEAD		10/19/10		4/1/11	
2.	Ernest M. Thornton Jr.	Nuc Ops Plant Inst.		10/20/10		4/1/11	
3.	LEWIS P. VANNIER	NUC OPS PLANT INST.		10/20/10		4/1/11	
4.	CHRISTOPHER DOMBROWSKI	NUC OPS PLANT INST.		11/29/10		4/1/11	
5.	Mark Hayden	NUCLEAR OPS. PLANT INST.		11/29/10		4/1/11	
6.	Thad N. Thompson	GSE - TRAINING INSTRUCTOR		12-1-10		4-4-11	
7.	MICK YOUMANS	SIMULATOR COORDINATOR		12-2-10		4-1-11	
8.	John Randolph	Simulator Engineer		12-3-10		3-31-11	
9.	BILL WHALEY	SIM Coordinator		12-3-10		4-4-11	
10.	SAM RIGGIO	Simulator Engineer		12-13-10		3-31-11	
11.	James C Johnson	SR I&C Tech		12-14-10		3/31/11	
12.	~~[illegible]~~				12/28/2010		
13.	R. D. Bridson	Ing Manager		12/28/10		4-1-11	
14.	Scott M. Landmann	Nuc Ops Plant Instructor		1/4/11		4/1/11	
15.	Timothy L. Harris	OPS INSTRUCTOR		1/7/11		4/1/11	

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HL-16 NRC

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

1. Pre-Examination 3/14/11 3/2/11

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 3/21/11 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 3/14/11 → 4/1/11

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 W. 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.	Steven E Brown	NRC / Exam Validator		1/13/11		4/1/11 NA
2.	Donald L. Gandy	NRC / Exam Validator	DLGandy	1-13-11	DLGandy	4-4-11
3.	Lewis E Wood	NRC / Exam Validator		1-13-11		4-1-11
4.	Daniel M. Monahan	SSS / Exam Validator		1-13-11		4-4-11
5.	Frank R Ehrhardt	USS / Exam Validator		1/13/11		4/1/11
6.	George W Gunn	Ops Training Supervisor		1/14/11		4/1/11
7.	Michael C. Henry	Operations Training Coordinator	MC Henry	3/7/11	MC Henry	4/3/11
8.	Tim Covington	USS / Shift Supervisor		2-15-11		4-1-11
9.	Stephen C. Hagi	SSS / Exam Validator		2-15-11		4-4-11
10.	Sterling L. Whitson	NRC / Exam Validation		2-16-11		4-5-11
11.	[illegible]	NRC / Exam Validation		2/16/11		4/5/11
12.	RF Williams	NRC / Exam Validation		2/16/11		4/4/11
13.	James Reasner	Sim Instructor		2/17/11		4/4/2011
14.	Rick Burkhart	Lead Instr.		3/14/11		3/3/11
15.	Robert Meyer	Instructor		3/15/11		3/16/11 JHM only

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HL-16 NRC

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

1. Pre-Examination

3/14/11 3/28/11

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 3/21/11 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 3/14/11 → 4/1/11

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

	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1.	BARRY EVANS	HL 16 INSTRUCTOR		3/15/11		3/18/11
2.	Perry Tucker	Nuc Ops Plant Inst, Lead		3/15/11		3/18/11
3.	R.A. Crotty R.A.Crotty	SS Ops		3/18/11		3/31/11
4.	JESSE THOMAS	SM		3/18/11		4/5/11
5.	W.R. Dunn	SM		3/18/11		4/4/11
6.	~~CURTIS TALLEY~~	OPS INST		3/25/11	ext 8/31/11	
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14.						
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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 3/14-11 → 3/28/4 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 3/14/11 → 4/1/11

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

	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	CURTIS S. TALLEY	OPS INSTRUCTOR	Curtis S Talley	3/3/4/11	Curtis S Talley	4/1/11	
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ES-301, Rev. 9 **Administrative Topics Outline** **Form ES-301-1**

Facility: Plant Vogtle	Date of Examination: 03/14/2011
Examination Level: RO ☒ SRO ☐	Operating Test Number: 2011-301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R,M	Title: **AFD Monitoring** Description: With data provided, Candidate will perform 14915 Datasheet 6 AFD Monitoring . K/A: G2.1.37 (4.4)
Conduct of Operations	R,D,P	Title: **Critical Safety Function Status Tree Evaluation** Description: Students will be provided a listing of plant parameters. This will require manually evaluating each status tree to determine the challenges to each tree and identify the highest priority challenge. K/A: G2.1.7 (4.4 / 4.7)
Equipment Control	R,M	Title: **Determine mode change requirements** Description: Candidates will be provided a Plant initial condition listing of plant equipment out of service/degraded .Candidate must identify those items that would prevent mode change K/A: G2.2.38 (3.6 / 4.5)
Radiation Control	R,D	Title: **Stay time calculation for emergency exposure to protect valuable equipment** Description: Candidate s will be provided survey data and time estimates. Calculate maximum stay time so as not to exceed the Emergency Exposure Limit K/A: G2.3.7 (3.5 / 3.6)
Emergency Procedures/Plan		Title: N/A Description: K/A:

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: Plant Vogtle Date of Examination: 03-14-2011
Examination Level: ☐ RO ☒ SRO Operating Test Number: 2011-301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R,M	Title: **Evaluate Inoperable AFD Monitor Alarm** Description: With data provided, Candidate select 14915 Datasheet 6 AFD Monitoring and evaluate the data and take appropriate actions. K/A: G2.1.37 (4.7)
Conduct of Operations	R,D,P	Title: **Critical Safety Function Status Tree Evaluation** Description: Candidate will be provided a listing of plant parameters. This will require manually evaluating each status tree to determine the challenges to each tree and identify the highest priority challenge. K/A: G2.1.7 (4.4 / 4.7)
Equipment Control	R,M	Title: **Determine mode change requirements** Description: Candidates will be provided a Plant initial condition listing of plant equipment out of service/degraded .Candidate must identify those items that would prevent mode change and what must be done to allow mode change K/A: G2.2.38 (3.6 / 4.5)
Radiation Control	R,D	Title: **Life Saving in Emergency Conditions** Description: During a radiological emergency, person must be rescued from a very high point source. The candidate must calculate the projected dose to the rescuer, determine who must approve this emergency exposure, and given 91301-C complete data sheet 1 for this exposure K/A Number: G2.3.4 (3.2 / 3.7)
Emergency Procedures/Plan	R,M	Title: **Classify an Emergency Event** Description: Classify an emergency with one unit in mode 5 or 6 and complete NMP-EP-110 Checklist 1.. K/A Number: G2.4.38 (2.4 / 4.4)

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 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: Plant Vogtle	Date of Examination: 03/14/2011
Exam Level (circle one): RO / SRO-I / SRO-U (see each JPM)	Operating Test No.:2011-301

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

System / JPM Title	Type Code*	Safety Function
a. **Emergency Borate due to Rods below insertion limits (RIL)** **Description:** RWST flow path required due to equipment failures. This JPM has been modified to require the student to determine if rods are below RIL by responding to a rod bank lo-lo limit alarm using the Core Operating Limits Report prior starting the emergency boration. (RO / SRO-I) K/A: 004A2.14 (3.8 / 3.9)	D,A,S,P	1
b. **Establish Safety Grade Letdown** **Description:** The plant was manually tripped due to a nonisolable instrument air break. Safety grade letdown is placed in service to control RCS inventory, (RO / SRO-I) K/A: 004A2.11 (3.6 / 4.2)	D,S	2
c. **Depressurize RCS to Reduce Break Flow to Ruptured Steam Generator-Normal Pressurizer Spray Not Available** **Description:** A SGTR has occurred .The candidate task is to "Depressurize the RCS beginning with 19030-C step 34, until one termination criterion is met" . Normal spray controllers will not function. Candidate should use a PORV with complications. (RO / SRO-I /SRO-U) K /A 038EA1.04 (4.3 / 4.1)	M,A,S	3
d. **Isolate a Faulted Steam Generator** **Description:** The candidate is tasked with identify and isolate the faulted SG. When MSLI is performed all SGs are still depressurizing with indicated steam flow. This will require transition to 19121-C,"Uncontrolled Depressurization of all SGs" to perform mitigation. (RO / SRO-I) K/A: WE12EA2.2 (3.4 / 3.9)	D,A,S	4P

e. **Place Containment Hydrogen Monitors in service using 13130-1** **Description:** A LOCA has occurred and the candidate is directed to place the Containment Hydrogen Monitors in service. (RO / SRO-I) K/A: 028A1.01 (3.4 / 3.8)	D,S,	5
f. . **DG Parallel Operation with voltage regulator failure** **Description:** DG KVAR lowers uncontrollably after paralleling during the loading of the DG to full test load. This requires tripping the DG output breaker. (RO / SRO-I / SRO-U) K/A: 062A1.01 (3.4 / 3.8)	M,A,S,P,EN	6
g. **Perform Power Range NI ACOT** **Description:** The candidate will perform an ACOT on one power range NI channel. The High flux trip setpoint will be unsat (>109%). (RO / SRO-I) K/A: 015A3.03 (3.9 / 3.9)	M,S	7
h. **Place CNMT Main Purge In-Service** **Description:** Unit in mode 5. Student required to shutdown mini-purge system and then place main purge system in service with equipment hatch open. Main purge supply fan should not be placed in service. (RO) K/A: 029A2.03 (2.7 / 3.1)	D,S,L,P	8

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

Facility: Vogtle 1 & 2 Date of Examination: 3/14/11 – 3/25/11 Operating Test Number: 2011-301

	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).	EMT	GW	AJC
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	EMT	GW	AJC
c.	The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)	EMT	GW	AJC
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	EMT	GW	AJC
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	EMT	GW	AJC
	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	EMT	GW	AJC
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.	EMT	GW	AJC
	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.		EMT	GW	AJC

	Printed Name / Signature	Date
a. Author	Ernest M. Thornton Jr. Ernest M. Thornton Jr.	01/24/2011
b. Facility Reviewer(*)	BREG WAINWRIGHT / Bwainwright	1/24/11
c. NRC Chief Examiner (#)	Phillip G. Capehart / PGC Capehart	3/15/11
d. NRC Supervisor	MALCOLM T. WIDMANN /	03/15/11

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**

Facilty: Vogtle 1 & 2 Date of Exam: 3/14/11 -3/25/11 Scenario Numbers: 1 / 2 / 3 Operating Test No.: 2011-301

	QUALITATIVE ATTRIBUTES	Initials a	b*	c#
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.	EMT		
2.	The scenarios consist mostly of related events.	EMT		
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)	EMT		
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.	EMT		
5.	The events are valid with regard to physics and thermodynamics.	EMT		
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	EMT		
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.	EMT		
8.	The simulator modeling is not altered.	EMT		
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.	EMT		
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.	EMT		
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	EMT		
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).	EMT		
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	EMT		

	Target Quantitative Attributes (Per Scenario; See Section D.5.d)	Actual Attributes	--	--	--
1.	Total malfunctions (5–8)	6 / 9 / 7	EMT		
2.	Malfunctions after EOP entry (1–2)	2 / 3 / 2	EMT		
3.	Abnormal events (2–4)	3 / 5 / 4	EMT		
4.	Major transients (1–2)	1 / 2 / 1	EMT		
5.	EOPs entered/requiring substantive actions (1–2)	2 / 2 / 2	EMT		
6.	EOP contingencies requiring substantive actions (0–2)	0 / 1 / 0	EMT		
7.	Critical tasks (2–3)	3 / 3 / 3	EMT		

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

Facilty: Vogtle 1 & 2	Date of Exam: 3/14/11 -3/25/11	Scenario Numbers: 4 / 5	Operating Test No.: 2011-301

QUALITATIVE ATTRIBUTES		Initials		
		a	b*	c#
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.	EMT	BW	DJC
2.	The scenarios consist mostly of related events.	EMT	BW	DJC
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)	EMT	BW	DJC
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.	EMT	BW	DJC
5.	The events are valid with regard to physics and thermodynamics.	EMT	BW	DJC
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	EMT	BW	DJC
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.	EMT	BW	DJC
8.	The simulator modeling is not altered.	EMT	BW	DJC
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.	EMT	BW	DJC
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.	EMT	BW	DJC
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	EMT	BW	DJC
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).	EMT	BW	DJC
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	EMT	BW	DJC

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

ES-301-5 Transient and Event Checklist

Facility: Vogtle Nuclear Plant **Date of Exam:** 3-14-2011 **Operating Test No.:** 2011-301

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
SRO-I x SRO-U	RX	1			7			6			2			4	1	1	0
	NOR	4			4			1			1			4	1	1	1
	I/C	2,3,5 7,8			1,2,3 5,6,9 10, 11			2,3,4 5,8,9			3,4,5 7,8			24	4	4	2
	MAJ	6			8			7			6			4	2	2	1
	TS	2,3,5			1,2,5 6			2,4,5			4,5			12	0	2	2
RO x SRO-I x	RX		1			7			6			2		4	1	1	0
	NOR		4			4			0			0		2	1	1	1
	I/C		3,7			3,5,6 9,11			2,4,5 9			3,4,8		14	4	4	2
	MAJ		6			8			7			6		4	2	2	1
	TS		0			0			0			0		0	0	2	2
RO x SRO-I x	RX			0			0			0			0	0	1	1	0
	NOR			1			7			1,6			1,2	6	1	1	1
	I/C			2,5 8			1,2,5 10			3,8			5,7	11	4	4	2
	MAJ			6			8			7			6	4	2	2	1
	TS			0			0			0			0	0	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.

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

Facility: Vogtle Nuclear Plant **Date of Exam:** 3-14-2011 **Operating Test No.:** 2011-301

APPLICANT	EVENT TYPE	Scenarios									TOTAL #5	TOTAL 1 - 5	MINIMUM(*)		
		5													
		CREW POSITION			CREW POSITION			CREW POSITION							
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP			R	I	U
SRO-I x SRO-U	RX	1									1	5	1	1	0
	NOR	0									0	4	1	1	1
	I/C	2,3,4 6,7									5	29	4	4	2
	MAJ	5									1	5	2	2	1
	TS	2,3,4									3	15	0	2	2
RO x SRO-I x	RX		1								1	5	1	1	0
	NOR		0								0	2	1	1	1
	I/C		4,6								2	16	4	4	2
	MAJ		5								1	5	2	2	1
	TS		0								0	0	0	2	2
RO x SRO-I x	RX			0							0	0	1	1	0
	NOR			1							1	7	1	1	1
	I/C			2,3 7							3	14	4	4	2
	MAJ			5							1	5	2	2	1
	TS			0							0	0	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: Vogtle **Date of Examination**: 3-14-2011 **Operating Test No.:** 2011-301

Competencies	APPLICANTS											
	RO X				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	123 456 78	123 456 789 10 11	123 456 789	123 456 789	1234 5678	1234 5678 9 10 11	1234 5678 9	1234 5678 9	1234 5678	1234567 89 10 11	1234 5678 9	1234 5678 9
Comply With and Use Procedures (1)	123 456 78	123 456 789 10 11	123 456 789	123 456 789	1234 5678	1234 5678 9 10 11	1234 5678 9	1234 5678 9	1234 5678	1234567 89 10 11	1234 5678 9	1234 5678 9
Operate Control Boards (2)	123 456 78	123 456 789 10 11	123 456 789	123 456 789	1234 5678	1234 5678 9 10 11	1234 5678 9	1234 5678 9				
Communicate and Interact	123 456 78	123 456 789 10 11	123 456 789	123 456 789	1234 5678	1234 5678 9 10 11	1234 5678 9	1234 5678 9	1234 5678	1234567 89 10 11	1234 5678 9	1234 5678 9
Demonstrate Supervisory Ability (3)					1234 5678	1234 5678 9 10 11	1234 5678 9	1234 5678 9	1234 5678	1234567 89 10 11	1234 5678 9	1234 5678 9
Comply With and Use Tech. Specs. (3)					235	256	245	45	235	256	245	45

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.

ES-301-6 **Competencies Checklist**

Facility: Vogtle **Date of Examination**: 3-14-2011 **Operating Test No.:** 2011-301

Competencies	APPLICANTS											
	RO X				SRO-I X				SRO-U X			
	SCENARIO				SCENARIO				SCENARIO			
	5				5				5			
Interpret/Diagnose Events and Conditions	1234567				1234567				1234567			
Comply With and Use Procedures (1)	1234567				1234567				1234567			
Operate Control Boards (2)	1234567				1234567							
Communicate and Interact	1234567				1234567				1234567			
Demonstrate Supervisory Ability (3)					1234567				1234567			
Comply With and Use Tech. Specs. (3)					234				234			

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.

ES-401, Rev. 9 **PWR Examination Outline** **Form ES-401-2**

Facility: VOGTLE Date of Exam: 2011

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	1				2	1			2	9	2	2	4
	Tier Totals	5	4	4				5	4			5	27	5	5	10
2. Plant Systems	1	3	2	3	3	2	3	2	3	2	3	2	28	3	2	5
	2	1	1	1	1	1	1	0	1	1	1	1	10	2	1	3
	Tier Totals	4	3	4	4	3	4	2	4	3	4	3	38		3	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 ATier 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 ⋈ 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 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 KAs.
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:
008AK1.01	Pressurizer Vapor Space Accident / 3	3.2	3.7	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Thermodynamics and flow characteristics of open or leak- ing valves
009EG2.4.8	Small Break LOCA / 3	3.8	4.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of how abnormal operating procedures are used in conjunction with EOPs.
011EA1.03	Large Break LOCA / 3	4	4	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Securing of RCPs
022AA2.03	Loss of Rx Coolant Makeup / 2	3.1	3.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Failures of flow control valve or controller
025AK1.01	Loss of RHR System / 4	3.9	4.3	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Loss of RHRS during all modes of operation
027AK2.03	Pressurizer Pressure Control System Malfunction / 3	2.6	2.8	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Controllers and positioners
029EK3.02	ATWS / 1	3.1	3.1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Starting a specific charging pump
038EK3.01	Steam Gen. Tube Rupture / 3	4.1	4.3	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Equalizing pressure on primary and secondary sides of ruptured S/G
054AG2.4.49	Loss of Main Feedwater / 4	4.6	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.
055EA1.01	Station Blackout / 6	3.7	3.9	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	In-core thermocouple temperatures
056AK3.01	Loss of Off-site Power / 6	3.5	3.9	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Order and time to initiation of power for the load sequencer

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
057AA2.02	Loss of Vital AC Inst. Bus / 6	3.7	3.8	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Core flood tank pressure and level indicators
058AG2.4.49	Loss of DC Power / 6	4.6	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.
077AA2.07	Generator Voltage and Electric Grid Disturbances / 6	3.6	4.0	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Operational status of engineered safety features
WE04EK1.1	LOCA Outside Containment / 3	3.5	3.9	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Components, capacity, and function of emergency systems.
WE05EA1.1	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	4.1	4.0	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.
WE11EK2.2	Loss of Emergency Coolant Recirc. / 4	3.9	4.3	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	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.
WE12EK2.1	Steam Line Rupture - Excessive Heat Transfer / 4	3.4	3.7	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
001AG2.4.9	Continuous Rod Withdrawal / 1	3.8	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.
028AK1.01	Pressurizer Level Malfunction / 2	2.8	3.1	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	PZR reference leak abnormalities
033AK3.01	Loss of Intermediate Range NI / 7	3.2	3.6	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Termination of startup following loss of intermediate-range instrumentation
060AK2.01	Accidental Gaseous Radwaste Rel. / 9	2.6	2.9	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	ARM system, including the normal radiation-level indications and the operability status
067AA1.07	Plant Fire On-site / 8	2.9	3	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Fire alarm reset panel
068AK3.08	Control Room Evac. / 8	3.4	3.9	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Trip of the MFW and necessary Condensate pumps
076AA2.03	High Reactor Coolant Activity / 9	2.5	3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	RCS radioactivity level meter
WE08EA1.1	RCS Overcooling - PTS / 4	3.8	3.8	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.
we09EG2.4.9	Natural Circ. / 4	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:
003K5.03	Reactor Coolant Pump	3.1	3.5	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Effects of RCP shutdown on T-ave., including the reason for the unreliability of T-ave. in the shutdown loop
003K6.02	Reactor Coolant Pump	2.7	3.1	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	RCP seals and seal water supply
004A3.06	Chemical and Volume Control	3.9	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T-ave. and T-ref
005A1.07	Residual Heat Removal	2.5	3.1	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Determination of test acceptability by comparison of recorded valve response times with Tech-Spec requirements
005A4.03	Residual Heat Removal	2.8	2.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	RHR temperature, PZR heaters and flow and nitrogen
006A1.07	Emergency Core Cooling	3.3	3.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Pressure, high and low
006G2.1.30	Emergency Core Cooling	4.4	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to locate and operate components, including local controls.
007A1.03	Pressurizer Relief/Quench Tank	2.6	2.7	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Monitoring quench tank temperature
010K6.04	Pressurizer Pressure Control	2.9	3.2	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	PRT
012A4.07	Reactor Protection	3.9	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	M/G set breakers
013K5.01	Engineered Safety Features Actuation	2.8	3.2	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Definitions of safety train and ESF channel

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
022K3.02	Containment Cooling	3.0	3.3	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Containment instrumentation readings
026K3.02	Containment Spray	4.2	4.3	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Recirculation spray system
039G2.2.39	Main and Reheat Steam	3.9	4.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of less than one hour technical specification action statements for systems.
059K4.18	Main Feedwater	2.8	3.0	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Automatic feedwater reduction on plant trip
059K4.19	Main Feedwater	3.2	3.4	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Automatic feedwater isolation of MFW
061K2.01	Auxiliary/Emergency Feedwater	4.0	3.8	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	AFW System MOV's
061K6.02	Auxiliary/Emergency Feedwater	2.6	2.7	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Pumps
062K4.02	AC Electrical Distribution	2.5	2.7	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Circuit breaker automatic trips
063A2.01	DC Electrical Distribution	2.5	3.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Grounds
064G2.2.12	Emergency Diesel Generator	3.7	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of surveillance procedures.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
064K3.03	Emergency Diesel Generator	3.6	3.9	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	ED/G (manual loads)
073K1.01	Process Radiation Monitoring	3.6	3.9	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Those systems served by PRMs
073K5.02	Process Radiation Monitoring	2.5	3.1	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Radiation intensity changes with source distance
076A3.02	Service Water	3.7	3.7	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Emergency heat loads
076K1.05	Service Water	3.8	4.0	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	D/G
103K1.08	Containment	3.1	3.5	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	SIS, including action of SI reset

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
001K2.05	Control Rod Drive	3.1	3.5	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	M/G sets
002K5.11	Reactor Coolant	4.0	4.2	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Relationship between effects of the primary coolant system and the secondary coolant system
011K4.03	Pressurizer Level Control	2.6	2.9	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Density compensation of PZR level
014A1.02	Rod Position Indication	3.2	3.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Control rod position indication on control room panels
017K6.01	In-core Temperature Monitor	2.7	3.0	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Sensors and detectors
029K1.02	Containment Purge	3.3	3.6	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Containment radiation monitor
033G2.4.49	Spent Fuel Pool Cooling	4.6	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.
035A4.06	Steam Generator	4.5	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	S/G isolation on steam leak or tube rupture/leak
055K3.01	Condenser Air Removal	2.5	2.7	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Main condenser
068A3.02	Liquid Radwaste	3.6	3.6	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Automatic isolation

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.1	Conduct of operations	3.8	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of conduct of operations requirements.
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.
G2.2.13	Equipment Control	4.1	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of tagging and clearance procedures.
G2.2.14	Equipment Control	3.9	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of process for controlling equipment configuration or status.
G2.3.15	Radiation Control	2.9	3.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiation monitoring systems
G2.3.5	Radiation Control	2.9	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to use radiation monitoring systems
G2.3.7	Radiation Control	3.5	3.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to comply with radiation work permit requirements during normal or abnormal conditions
G2.4.14	Emergency Procedures/Plans	3.8	4.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of general guidelines for EOP usage.
G2.4.34	Emergency Procedures/Plans	4.2	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects
G2.4.2	Emergency Procedures/Plans	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:
007EA2.02	Reactor Trip - Stabilization - Recovery / 1	4.3	4.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Proper actions to be taken if the automatic safety functions have not taken place
011EA2.08	Large Break LOCA / 3	3.4	3.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Conditions necessary for recovery when accident reaches stable phase
025AA2.05	Loss of RHR System / 4	3.1	3.5	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Limitations on LPI flow and temperature rates of change
026AG2.2.44	Loss of Component Cooling Water / 8	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
056AG2.2.42	Loss of Off-site Power / 6	3.9	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
062AG2.1.20	Loss of Nuclear Svc Water / 4	4.6	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to execute procedure steps.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
003AG2.2.22	Dropped Control Rod / 1	4.0	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of limiting conditions for operations and safety limits.
036AA2.02	Fuel Handling Accident / 8	3.4	4.1	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Occurrence of a fuel handling incident
037AG2.4.4	Steam Generator Tube Leak / 3	4.5	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.
068AA2.04	Control Room Evac. / 8	3.7	4	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	S/G pressure

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
003G2.2.25	Reactor Coolant Pump	3.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.
007A2.02	Pressurizer Relief/Quench Tank	2.6	3.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Abnormal pressure in the PRT
022G2.2.42	Containment Cooling	3.9	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
064A2.14	Emergency Diesel Generator	2.7	2.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Effects (verification) of stopping ED/G under load on isolated bus
073A2.02	Process Radiation Monitoring	2.7	3.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Detector failure

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
034K1.04	Fuel Handling Equipment	2.6	3.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	NIS
072G2.4.46	Area Radiation Monitoring	4.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to verify that the alarms are consistent with the plant conditions.
086A2.02	Fire Protection	3.0	3.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Low FPS header pressure

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.
G2.1.44	Conduct of operations	3.9	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of RO duties in the control room during fuel handling.
G2.2.12	Equipment Control	3.7	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of surveillance procedures.
G2.2.44	Equipment Control	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
G2.3.6	Radiation Control	2.0	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to aprove release permits
G2.4.18	Emergency Procedures/Plans	3.3	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the specific bases for EOPs.
G2.4.31	Emergency Procedures/Plans	4.2	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of annunciators alarms, indications or response procedures

VOGTLE 2011

ES-401 **Record of Rejected K/As** **Form ES-401-4**

Tier / Group	Randomly Selected K/A	Reason for Rejection
T2G1	~~061K2.03~~ Replacement KA 061K2.01	Vogtle does not have a Diesel Driven AFW Pump
T3	~~G2.2.19~~ G2.2.14	RO IR 2.3 (< 2.5)
T3	~~G2.4.38~~ G2.4.2	RO IR 2.4 (< 2.5)
T2G1	~~103K1.03~~ 103K1.08	Containment System-Do not have a "Shield Building Vent System"
T2G1	~~005A1.07~~ 005A1.02	Could not write a discriminating question for this KA

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

Facility: Vogtle 1 & 2 Date of Exam: 4/1/2011 Exam Level: RO ☒ SRO ☒

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

	Bank	Modified	New
	41/11	10/3	24/11

	Memory	C/A
	37/6	38/19

	Printed Name / Signature	Date
a. Author	Thad N. Thompson / Thad N. Thompson	1-24-11
b. Facility Reviewer (*)	GREG WAINWRIGHT / Greg Wainwright	1/24/11
c. NRC Chief Examiner (#)	Phillip G. Capehart / Phillip G. Capehart	3/21/11
d. NRC Regional Supervisor	MALCOLM T. WIDMANN / Malcolm T. Widmann	03/21/11

Note: * The facility reviewer's initials/signature are not applicable for NRC-developed examinations.
Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.

VOGTLE 2011 RO

Instructions

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

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

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
1N														~~U~~ E	New. Not knowing if the SRM trip is active or not, the IRM trip would always be correct. What situation could make the IRMs correct and the SRMs incorrect for a power increase trip? Not plausible to choose A or C. The question should ask which one comes in first? 2/23/11 (Editorial) Upon review with the license this question only needed an editorial correction.
2B														S	(2010 exam) Looks OK

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
3B														~~U~~ E S	I could not figure out what this question is asking? Appears to be multiple correct answers. C is the correct answer for a primary leak and B is the correct answer for a steam leak. 2/23/11 (Editorial) Upon review with the license this question only needed an editorial correction.
4B														E S	Change 175 deg F to 185 deg F to make RCP 3 more plausible.2/23/22 Also agreed to change the Loop 3 stator and motor brg temp. (SAT)
5B														E S	Looks OK. 2/23/11 Made editorial changes.
6N														E S	New. Does one Tcold failure high cause a 10% change in power level signal to Level program circuit for PZR lvl control? 2/23/11 One distractor was not plausible, changed the distractor to say "no change" vs "go down".
7B						X								U S	Why is C plausible? Looks like there are multiple correct answers. 2/23/11 Agreed to tabletop this and possibly resample another KA. KA resampled, new question written for 005A1.02. SAT
8B														E S	Looks OK. 2/23/11 Made editorial changes.
9N														S	New. You require the RO to know this information from memory? 2/23/11 Ops confirmed this is yes.
10M														U S	Mod. The question should ask "Where are the pumps stopped, IAW the procedure? " C & D not plausible. ~~Reword to say "Train B only running~~". 2/23/11 Many minor editorial changes.
11N														S	New. Looks OK 2/23/11 SAT
12B														S	This does not correspond to the classic TMI mistake. Steam table reference sheet not included. 2/23/11. After review, question is OK as written.
13N														E S	New. Looks OK 2/23/11 Made editorial change to say "would not be performed concurrently".
14B														E S	Change distractor C & D to say "ONLY .... Opens" 2/23/11 Added "nor PZR PORV opens to C distractor. Removed "to isolate" to prevent possible overlap w/ SRO question. Reworded to ask "what is **available**".
15M														S	This is overlap from scenarios. Need to replace KA if necessary. 2/23/11 Tabletop to verify if this question is different from the scenario. 2/24/11 The combination of CCP's and SI pumps is

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
															different in the scenario. (i.e. There are CCPs running in the scenario)
16B														E S	Looks OK. 2/23/11 Licensee agreed to change 459 to 460.
17B														S	Looks OK
18B														E S	Does this require a 3 part question? 2/23/11 Made editorial change RPS vs AMSAC. Revisit this question to see if it can be turned into a 2 part question. 2/24/11 Question is OK as is.
19B														S	Looks OK. 2/23/11 LOD upon review with the licensee for the 2nd part of the question was considered to high. Evaluated the inclusion of the actual lo lo limit value as part of the stem. The applicant still needs to address which RPI is providing the input. (DRPI or step counter).
20B														S	Looks OK 2/23/11
21B												X		U S	Does not match the KA.. 2/23/11 Licensee agreed and is looking to rewrite this question. 2/24/11 Wrote new question given DW Temp and Press readings, is anything above its TS limit (SAT)
22B														E S	The question asked is a two part question but the answers are only for the 1st part. Otherwise it looks OK. 2/23/11 Change distractor D to Letdown Control Valve PCV to make D more plausible.
23B		1												U S	Is this a fundamental question? 2/23/11 Tabletop this until tomorrow. 2/24/11 New question presented requiring the interpretation of adverse numbers.
24B														E S	Why not include the B9 action of 18019 as part of the answer. 2/23/11 Removed the word "promptly" and added distractors that state "FIRST" do this THEN do this i.e. mitigation strategy.
25N														E S	New. Looks OK 2/23/11 Take out "Large Break" LOCA. Don't give the size. Otherwise the conditions don't match up. There would be a sump level increase for a large break LOCA. Also give them a drywell pressure condition to make "leave the pump running" plausible.
26B														E S	Verify not used on scenario. 2/23/11 Removed the trip statement on distractors C&D.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
27B														E S	Low level of difficulty. Other than knowing the correct LT, this is a GFES question. 2/23/11 Remove the CRD info in question stem (not relevant) and change LT to 459 to prevent answering previous question.
28B						X								U E S	C&D do not appear plausible. The question states that SI has not occurred. Why not give a value somewhat above the SI setpoint to make running a CCP for level control plausible. 2/23/11 Licensee agreed to comment and added a low PZR level condition to the question stem to increase plausibility. Also fixed procedure typo "211"(SAT)
29N						X								U E S	New. C&D do not appear plausible. Why would anyone think that a CIA or CVI would occur due to one instrument failure and not at the HIGH level? Are there any intermediate CIA or CVIs? Also verify this is not a JPM. 2/23/11 Table this item until tomorrow. 2/24/11 Reworded question to look at a HIGH RAD condition on one of the vent rad monitors which causes a CVI.
30B						X								U E S	2/23/11 A&B not currently plausible. UNSAT Control rods are already in Manual. Remove this part, include info to make addressing the Steam Generator Level plausible.
31N														E	New. 2/23/11 Change distractor C to remove "from the CR".
32B														U S	2/23/11 Question as presented is in a scenario. UNSAT Table until tomorrow. 2/24/11 New question written to ask actions with SG level in affected SG <10% NR therefore you don't isolate flow until level is recovered for heat sink.
33B														S	2/24/11 Question reviewed in office (SAT).
34N														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
35N														S	2/24/11 Question reviewed in office (SAT).
36B														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
37N														E S	2/24/11 Question reviewed in office. (Editorial) Choice D is not plausible. Reworded distractors to make D more plausible.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
38M														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
39N														S	2/24/11 Question reviewed in office (SAT).
40N							X							U S	2/24/11 Question reviewed in office (UNSAT). Original question was unsat due to a subset issue.
41M														S	2/24/11 Question reviewed in office (SAT).
42N														E S	2/24/11 Question reviewed in office (SAT). Editorial change required to the 2nd question asked to ensure.
43N						X								U S	2/24/11 C & D distractors not plausible. (UNSAT). Could be checked there or in the MCR. Question distractors modified to correct plausibility.
44B														S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
45N														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
46M						X								U S	2/24/11 Two non-plausible distractors presented on original question. Licensee had a prepared alternative that was (SAT).
47B														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
48B														~~U~~ E S	2/24/11 Not sure that this question meets the KA. (UNSAT?) Table until tomorrow. Modified question to match Surveillance information given in the procedure for when the EDG is considered inoperable.
49N														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
50N														E S	2/24/11 Table until tomorrow. LOD is too high. New 2nd part of question to be written. 2nd part of question reworded to simplify on lowered the LOD.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
51B			X											U S	2/24/11 Question plausibility states that power is not restored. The question stem implies that power has been restored. No detector reset criteria is addressed. The question does not make sense as is? (UNSAT) Question rewritten (SAT)
52N														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
53B														E S	2/24/11 This question overlaps with another RO question that was changed earlier Table till tomorrow. New question written to ensure there is no overlap.
54M														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
55M														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
56B														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
57N														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
58M														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
59B		X												U S	2/24/11 Question reviewed in office (UNSAT). 'A' is a subset of all other choices therefore the question answers itself as a minimum. Reworded to ask, "What are the minimum action(s)? (SAT)
60B						X								U S	2/24/11 Original question was rejected (UNSAT). New question provided from LOIT Bank. This is a repeat question from the last exam. (SAT)
61B														~~U~~ S	2/24/11 Original question A is a subset of C, B is a subset of D (Editorial). Could be counted as UNSAT but since it was corrected on the spot.
62B														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
63B														S	2/24/11 Question reviewed in office (SAT).

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
64B														~~U~~ S	2/24/11 D is a subset of a B. D (Editorial). Could be counted as UNSAT but since it was corrected on the spot. (Editorial) Changed the question to ask criteria to terminate SI flow (74 deg subcooling).
65M														E S	2/24/11 Question reviewed in office (SAT). Minor editorial improvements.
66N														S	2/24/11/Verified that this is an appropriate RO level question
67B														S	OK
68B														S	OK
69N														S	New. OK
70N														S	New. OK
71N														S	New. OK
72B														S	OK
73B														S	OK
74B														S	OK
75M														S	OK

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

VOGTLE 2011 SRO

Instructions

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

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

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

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
76						X							X	U S	The answer states: power distribution may be challenged. More than one correct answer. A dropped rod is also a misaligned rod. Subset issue. Also the RO is required to know the definition of SDM. Not SRO Only. 2/22/11 In Office – licensee provided a replacement question to ask if the rod is operable or not and whether the power dist. limits are affected.
77														U S	The TS LCO Section states: all RCS loops are required to be OPERABLE and in operation in these MODES to prevent DNB and core damage. The answer gives DNBR. Can eliminate choices A & B. They are functions, not basis statements. (NOT Plausible) (UNSAT) 2/22/11 New question written
78														E S	02 (Prelim submittal): This question does not appear to match the KA. The question is written from the viewpoint of the PORV not the PRT. (Editorial) 2/22/11 Reworded question (SAT).
79														U S	Doesn't meet the KA. Should be an "auto" failure. (UNSAT) 2nd part of B & D not plausible. No data given in the question to even support considering voids in the core. Also, NC w/voids can not be entered w/o passing thru NC C/D procedure i.e. can no go directly to NC w/voids from the Rx Trip Procedure. 2/22/11 Reworded question to simplify (SAT)
80														U S	The 2nd part of C & D do not appear plausible. You would have to assume that the Rx vessel has been completely emptied to consider choice C or D. (UNSAT) 2/2/11 Reworded question and simplified (SAT)
81														U S	Distractor B states "non-DBA" events, should it not state "DBA" events? This is not an entry level TS condition. Does not meet the KA. (UNSAT) 2/22/11 Reworded question (SAT)
82														E S	Modified. Asks for "indicated" flow. Per the procedure 3200 gpm indicated required to ensure actual flow is >3000 gpm. Based on this, the incorrect answer is selected. Not sure if this question is meeting the KA. (Editorial) The flow limit is irrespective of the Loss of RHR Procedure.

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

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only		
															The word "Emergency" in the choice "Alert Emergency" does not appear in the EAL designation. Emergency should be removed. Reworded the question to state that venting has not occurred. (SAT)
83														U S	(Prelim submittal) This question as written allows for multiple answers. (UNSAT) Question reworded (SAT)
84														E S	New(Prelim submittal) Distractor B(2) should be rewritten to eliminate the reason. 2/22/11 Corrected as requested.
85														E S	New. Reference information for EAL not submitted. Change distracters A&B to say no event classification required at this time. A&B "non-event" is not plausible as written. Changes made and also added "ED judgement can not be used". (SAT)
86														E S	86Mod. 037G2.4.4 Appears to meet the KA. 2/22/11 Editorial changes made. New question written to meet the KA. (SAT)
87														U U S	Do you expect the applicants to know the titles of the procedure numbers from memory? Does not meet the KA. (UNSAT) This is an INFO only, not an entry level condition. 2/22/11 New question written but Distractors C & D are not plausible for the rewritten question. (UNSAT) 2/23/11 Rewrote question . Added another RWST Variable in the stem (Boron concentration) to ensure the 2nd part of distractor D is plausible. New distractors written for C&D. (SAT)
88														E S	New. Appears to meet KA. Editorial 2/22/11 Corrections made.(SAT)
89														U S	New. No mention of TS reference for this? Does not meet the KA. C & D overlapped with a scenario (UNSAT) 2/22/11 Reworded question to remove overlap from the scenario (SAT)
90														E S	New. Appears to meet the KA? (SAT)

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	U/E/S	Explanation
91														E S	Mod. B.2) is not plausible. Why would you start an additional unit to make the offsite dose less? This is not a modified question. Is knowing a step in the AOP to stop one of the filtration units an SRO level question? 2/22/11 Changes made to B.2 to ensure plausibility (SAT).
92														E S	New. Is the SRO expected to know these TS from memory? No T.S. references provided as part of the question. Only one distractor (the correct one) used the terminology given in the stem of the question "Containment Atmosphere." Also Tech Spec. 3.4.15 C.2.2 is not presented as a correct answer also. 2/22/11 Added another detector "Plant Vent Noble Gas Activity Monitor" to the failure list given and asked if they can continue with the release or not (SAT)
93														U S	New. B is a subset of D therefore, there are two correct answers. 2/22/11 Table topped this (example was given on Friday at the plant site for this one). 2/23/11 Question reworded to ask for starting press of 2nd pump and changed the backup from B.5.B to the Cat 1 Standpipe.
94														E S	New. Bad sentence structure in 5th bullet "has." 2/22/11 Question looks SAT as is.
95														U S	Add IAW Tech Specs to the question and change should to "can". No plausibility for why you can't stop an RHR pump for this condition given in the plausibility statements. Also the basis statement only applies for stopping the RHR pump, not allowing the pump to stay running, therefore; B & C are not plausible. (UNSAT) 2/22/11 Question reworded to ask for how long you can stop the RHR pump (1hr in an 8 hr period) (SAT).
96														U S	(Prelim submittal) B & C are not plausible. Conduct of Operations and common sense would not allow this kind of plant operation. (UNSAT) Change B to "started w/i the next hr and completed within the following 4 hrs." 2/22/11 Made recommended changes (SAT).
97														U S	Typo in question. Bullet #2 "oncomimg" vs "oncoming". Why is this bullet needed in the stem? 24hrs vs 2 hrs? Doesn't sound very plausible for not having any power indication at a low power condition. 2/22/11 Tabletop this till tomorrow. 2/23/11 New question written for Unit differences associated with CST level and TS minimum level.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only		
98														E S	In distractor A, remove "under any conditions" to make more plausible. Two tanks cannot be administratively released at the same time. (SAT)
99														E S	New (Prelim submittal) Licensee did not provide plausibility for going to the optimal recovery procedure or provide procedure reference for this transition choice. If SG WR Lvl is > 10%, how do you get to a optimal recovery procedure to make choices B & D plausible for the 2nd choice. 2/22/11 Made the suggested changes (SAT)
100														U S	This does not appear to be SRO Only. RO is responsible for knowing when a tripped condition exists. (UNSAT) 2/22/11 Wrote a new question for this KA (SAT)

ES-403, Rev. 9 | **Written Examination Grading Quality Checklist** | Form ES-403-1

Facility: Vogtle	Date of Exam: 4/1/2011	Exam Level: RO/SRO

Item Description	Initials a	b	c
1. Clean answer sheets copied before grading	PJC	NA	PJC
2. Answer key changes and question deletions justified and documented	PJC		PJC
3. Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	PJC		PJC
4. Grading for all borderline cases (80 ±2% overall and 70 or 80, as applicable, ±4% on the SRO-only) reviewed in detail	PJC		PJC
5. All other failing examinations checked to ensure that grades are justified	PJC		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	PJC	↓	PJC

	Printed Name/Signature	Date
a. Grader	Phillip G. Capehart / PJC Capehart	4/20/11
b. Facility Reviewer(*)	NA	NA
c. NRC Chief Examiner (*)	Phillip G. Capehart / PJC Capehart	4/20/11
d. NRC Supervisor (*)	MARCELLT. WIDMANN /	05/02/11

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

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	Printed Name/Signature	Date
a. Grader	Phillip G. Capehart / PJCapehart	4/20/11
b. Facility Reviewer(*)	NA	NA
c. NRC Chief Examiner (*)	Phillip G. Capehart / PJCapehart	4/20/11
d. NRC Supervisor (*)	MICHAEL T. WIDMANN / [signature]	05/02/11

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