

Facility: Three Mile Island Unit 1 Date of Examination: 4/16-4/19 *Op test*  
 Developed by: Written - Facility ☒ NRC ☐ // Operating - Facility ☒ NRC ☐ *4/26 WRITTEN EXAM*

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

Facility: THREE MILE ISLAND		Date of Examination: 4-16-12		
Item	Task Description	Initials		
		a	b*	c#
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	3/2/11	BW	gn
	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.	3/2/11	BW	gn
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	3/2/11	BW	gn
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	3/2/11	BW	gn
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	3/2/11	BW	gn
	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.	3/2/11	BW	gn
	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.	3/2/11	BW	gn
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.	3/2/11	BW	gn
	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	3/2/11	BW	gn
	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.	3/2/11	BW	gn
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.	3/2/11	BW	gn
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	3/2/11	BW	gn
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	3/2/11	BW	gn
	d. Check for duplication and overlap among exam sections.	3/2/11	BW	gn
	e. Check the entire exam for balance of coverage.	3/2/11	BW	gn
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	3/2/11	BW	gn
a. Author b. Facility Reviewer (*) c. NRC Chief Examiner (#) d. NRC Supervisor		Printed Name/Signature GREGORY A. HOEK / <i>Gregory A. Hoek</i> DEBORAH L. OSHAW / <i>Deborah L. Oshaw</i> JOHN CARLSON / <i>John Carlson</i> DONALD JACKSON / <i>Donald Jackson</i>		Date 1/12/12 1-13-12 2-2-12 2/9/12
Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines				

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 4/16/12 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 4/16/12/4/23/12. From the date that I entered into this security agreement until the completion of examination administration, I did not instruct, evaluate, or provide performance feedback to those applicants who were administered these licensing examinations, except as specifically noted below and authorized by the NRC.

PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1. THOMAS MEEILL	EXAM AUTHR		9/29/11		4/16/12	
2. GREGORY R. MOEK	EXAM AUTHR		10/11/11		4/26/12	
3. JOHN E TESMER	SIMULATOR COORDINATOR		10/26/11		4/27/12	
4. FRED BRUNS	OTPS		10/26/11		4/27/12	①
5. D.L. OSHAN	FACILITY REP		11-11-11		4/26/12	
6. BRAD PARETT	TECHNICAL REVIEWER		12/9/11		4/27/12	
7. Nicholas Foyorito	SRO / Exam Validator		12/16/11		4/27/12	
8. Joseph F. Sebulsky	CRO / Validator		12-15-11		4-26-12	
9. William Craddock	CRO / Validator		12/15/11		4/26/12	
10. Brian Bowers	CRO / Validator		12/29/11		5-2-12	
11. Gerald Scher	SRO / VALIDATOR		1-5-12		4-26-12	
12. JASON HARNER	CRO / Validator		01-05-12		05-01-12	
13. JAL JALANT	SRO / VALIDATOR		1-5-12		5-1-12	
14. DAVID S. ANDERSON	CRO / VALIDATOR		1-5-12		4-26-12	②
15. DAVE WILLIAMS	SRO / VALIDATOR		1-5-12		4-26-12	

NOTES:

① PER E-MAIL 4/27/2012 JRM

② PER PHONE VOICE MESSAGE 5/1/12 JRM

TMI 2011-2

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 4/22/12 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 4/22/12. 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. JOSEPH ARSENAULT	Developer/Reviewer	<i>[Signature]</i>	9/27/11	<i>[Signature]</i>	4/30/12	
2. DAVID LAZAROFF	Developer/Reviewer	<i>[Signature]</i>	9/27/11	<i>[Signature]</i>	5/3/12	
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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 4/16/12 4/23/12. 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.	HUGH BLUNT	CRO	<i>[Signature]</i>	1-6-12	<i>[Signature]</i>	5-2-12
2.	J. Edwards	ITC Tech	<i>[Signature]</i>	1-12-12	<i>[Signature]</i>	4-27-12
3.	Luke Hodur	CRO	<i>[Signature]</i>	1/17/12	<i>[Signature]</i>	5-1-12
4.	Tara Snyder	CRO	<i>[Signature]</i>	2/8/12	<i>[Signature]</i>	4/27/12
5.	J.M. HOKE	CRO	<i>[Signature]</i>	2/8/12	<i>[Signature]</i>	4/27/12
6.	Joe Shofner	CRO	<i>[Signature]</i>	2-8-12	<i>[Signature]</i>	4-26-12
7.	Joseph Kulasinsky	SM	<i>[Signature]</i>	2/10/12	<i>[Signature]</i>	4/26/12
8.	Adam Williams	CRO	<i>[Signature]</i>	2/10/12	<i>[Signature]</i>	4/26/12
9.	Tim Alvey	SAO	<i>[Signature]</i>	2/12/12	<i>[Signature]</i>	5/1/12
10.	Ed Garra	SM	<i>[Signature]</i>	2/13/12	<i>[Signature]</i>	4/27/12
11.	DAVE LEWIS	SEO	<i>[Signature]</i>	2/23/12	<i>[Signature]</i>	4/26/12
12.	PAUL ALAMIN	CRO	<i>[Signature]</i>	3/20/12	<i>[Signature]</i>	4/27/12
13.	Maria Melian	SRE	<i>[Signature]</i>	3/29/12	<i>[Signature]</i>	4/27/12
14.	Tom Kiscaden	ITC Tech	<i>[Signature]</i>	3/29/12	<i>[Signature]</i>	4/27/12
15.	ROBERT R. BEADY, JR.	SM	<i>[Signature]</i>	4/2/12	<i>[Signature]</i>	4/26/12

NOTES:

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2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 4/16/12 4/23/12. From the date that I entered into this security agreement until the completion of examination administration, I did not instruct, evaluate, or provide performance feedback to those applicants who were administered these licensing examinations, except as specifically noted below and authorized by the NRC.

PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1. <u>CRISTO L. S. M.</u>	<u>6201 CRS</u>	<u>[Signature]</u>	<u>4/13/12</u>	<u>[Signature]</u>	<u>4/11/12</u>	
2. <u>Brandon L. Buckley</u>	<u>Instructor</u>	<u>[Signature]</u>	<u>4/9/12</u>	<u>[Signature]</u>	<u>4/27/12</u>	
3. <u>CLINT R. SIX</u>	<u>SOS</u>	<u>[Signature]</u>	<u>4/11/12</u>	<u>[Signature]</u>	<u>4/24/12</u>	<u>4/24/12</u>
4. <u>GIL CROPPER</u>	<u>SR OPS INSTRUCTOR (CMTA)</u>	<u>[Signature]</u>	<u>4/16/12</u>	<u>[Signature]</u>	<u>4-27-12</u>	
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NOTES:

Facility: <u>Three Mile Island</u>		Date of Examination: <u>April 2012</u>		Operating Test Number: <u>289-2012-301</u>	
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).	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	
c.	The operating test shall not duplicate items from the applicants' audit test(s) (see Section D.1.a).	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	
2. WALK-THROUGH CRITERIA			--	--	--
a.	Each JPM includes the following, as applicable: <ul style="list-style-type: none"> <li>• initial conditions</li> <li>• initiating cues</li> <li>• references and tools, including associated procedures</li> <li>• reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee</li> <li>• operationally important specific performance criteria that include: <ul style="list-style-type: none"> <li>- detailed expected actions with exact criteria and nomenclature</li> <li>- system response and other examiner cues</li> <li>- statements describing important observations to be made by the applicant</li> <li>- criteria for successful completion of the task</li> <li>- identification of critical steps and their associated performance standards</li> <li>- restrictions on the sequence of steps, if applicable</li> </ul> </li> </ul>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	
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.	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	
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.		<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	
		Printed Name / Signature		Date	
a. Author	<u>Greg Hoek</u>	<i>[Signature]</i>		<u>4/3/12</u>	
b. Facility Reviewer (*)	<u>Deb Oshall</u>	<i>[Signature]</i>		<u>4-3-12</u>	
c. NRC Chief Examiner (#)	<u>John Caruso</u>	<i>[Signature]</i>		<u>4-4-12</u>	
d. NRC Supervisor	<u>DONALD E. JACKSON</u>	<i>[Signature]</i>		<u>4-4-12</u>	
NOTE: * The facility signature is not applicable for NRC-developed tests # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence is required.					

Facility: <u>Three Mile Island</u> Date of Examination: <u>April 2012</u> Scenario Numbers: <u>4/1/2/5</u> Operating Test Number: <u>289-2012-301</u>				
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.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
2.	The scenarios consist mostly of related events.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
3.	Each event description consists of <ul style="list-style-type: none"> <li>the point in the scenario when it is to be initiated</li> <li>the malfunction(s) that are entered to initiate the event</li> <li>the symptoms/cues that will be visible to the crew</li> <li>the expected operator actions (by shift position)</li> <li>the event termination point (if applicable)</li> </ul>	<i>[Signature]</i>	DLO	<i>[Signature]</i>
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.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
5.	The events are valid with regard to physics and thermodynamics.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
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.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
8.	The simulator modeling is not altered.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
9.	The scenarios have been validated. Pursuant to 10CFR55.46(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.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
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.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	<i>[Signature]</i>	DLO	<i>[Signature]</i>
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).	<i>[Signature]</i>	DLO	<i>[Signature]</i>
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	<i>[Signature]</i>	DLO	<i>[Signature]</i>
Target Quantitative Attributes (Per Scenario; See Section D.5.d)		Actual Attributes	--	--
		4 / 1 / 2 / 5		
1.	Total malfunctions (5-8)	7 / 7 / 7 / 7	<i>[Signature]</i>	DLO <i>[Signature]</i>
2.	Malfunctions after EOP entry (1-2)	1 / 1 / 1 / 1	<i>[Signature]</i>	DLO <i>[Signature]</i>
3.	Abnormal events (2-4)	2 / 2 / 2 / 3	<i>[Signature]</i>	DLO <i>[Signature]</i>
4.	Major transients (1-2)	1 / 1 / 1 / 1	<i>[Signature]</i>	DLO <i>[Signature]</i>
5.	EOPs entered/requiring substantive actions (1-2)	2 / 1 / 1 / 1	<i>[Signature]</i>	DLO <i>[Signature]</i>
6.	EOP contingencies requiring substantive actions (0-2)	3 / 3 / 2 / 3	<i>[Signature]</i>	DLO <i>[Signature]</i>
7.	Critical tasks (2-3)	3 / 3 / 3 / 2	<i>[Signature]</i>	DLO <i>[Signature]</i>



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

Facility: Three Mile Island				Date of Exam: April 2012				Operating Test Number: 289-2012-301										
A P P L I C A N T	E V E N T  T Y P E	Scenarios												T O T A L	M I N I M U M (*)			
		4			1			2			5							
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N							
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P					
															R	I	U	
RO <input type="checkbox"/> SRO-I-1 <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX				3										1	1	1	0
	NOR														0	1	1	1
	I/C	1,2,3,4,5,7			4,5,7					2,3,4,5,6,8					15	4	4	2
	MAJ	6			6					7					3	2	2	1
	TS	1,3								1,5					4	0	2	2
RO <input type="checkbox"/> SRO-I-2 <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX		1												1	1	1	0
	NOR														0	1	1	1
	I/C		2,4,5		1,2,3,4,5,7			1,2,4,5,6,8							15	4	4	2
	MAJ		6		6			7							3	2	2	1
	TS				1,3			2,3							4	0	2	2
RO <input type="checkbox"/> SRO-I-3 <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX							5							1	1	1	0
	NOR														0	1	1	1
	I/C	1,2,3,4,5,7						1,4,6		2,3,4,5,6,8					15	4	4	2
	MAJ	6						7		7					3	2	2	1
	TS	1,3								1,5					4	0	2	2
RO <input type="checkbox"/> SRO-I-4 <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX		1												1	1	1	0
	NOR														0	1	1	1
	I/C		2,4,5					1,2,4,5,6,8				3,4,5,6			13	4	4	2
	MAJ		6					7				7			3	2	2	1
	TS							2,3							2	0	2	2

**Instructions:**

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

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

Facility: Three Mile Island				Date of Exam: April 2012				Operating Test Number: 289-2012-301									
A P P L I C A N T	E V E N T  T Y P E	Scenarios												T O T A L	M I N I M U M (*)		
		4			1			2			5						
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N						
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P				
RO-1 <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U	RX							5						1	1	1	0
	NOR													0	1	1	1
	I/C			1,2,3,7					1,4,6				3,4,5,6	11	4	4	2
	MAJ			6					7				7	3	2	2	1
	TS													0	0	2	2
RO-2 <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U	RX											5		1	1	1	0
	NOR													0	1	1	1
	I/C						1,2,4,5			2,4,5,8		2,4,6,8		12	4	4	2
	MAJ						6			7		7		3	2	2	1
	TS													0	0	2	2
RO-3 <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U	RX											5		1	1	1	0
	NOR													0	1	1	1
	I/C			1,2,3,7						2,4,5,8		2,4,6,8		12	4	4	2
	MAJ			6						7		7		3	2	2	1
	TS													0	0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U	RX														1	1	0
	NOR														1	1	1
	I/C														4	4	2
	MAJ														2	2	1
	TS														0	2	2

**Instructions:**

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

Facility: Three Mile Island		Date of Examination: April 2012		Operating Test No.: 289-2012-301												
Competencies	APPLICANTS															
	RO <input type="checkbox"/>				RO <input type="checkbox"/>				RO <input type="checkbox"/>				RO <input type="checkbox"/>			
	SRO-I-1 <input checked="" type="checkbox"/>				SRO-I-2 <input checked="" type="checkbox"/>				SRO-I-3 <input checked="" type="checkbox"/>				SRO-I-4 <input checked="" type="checkbox"/>			
	SRO-U <input type="checkbox"/>				SRO-U <input type="checkbox"/>				SRO-U <input type="checkbox"/>				SRO-U <input type="checkbox"/>			
SCENARIO				SCENARIO				SCENARIO				SCENARIO				
	4 CRS	1 ATC	2	5 CRS	4 ATC	1 CRS	2 CRS	5	4 CRS	1	2 ATC	5 CRS	4 ATC	1	2 CRS	5 BOP
Interpret/ Diagnose Events and Conditions	1,2,3,4,5,6,7	1,2,3,4,5,6,7		1,2,3,4,5,6,7,8	1,2,3,4,5,6,7	1,2,3,4,5,6,7	1,2,3,4,5,6,7,8		1,2,3,4,5,6,7		1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7		1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8
Comply With and Use Procedures (1)	1,2,3,4,5,6,7	3,4,5,6,7		1,2,3,4,5,6,7,8	1,2,4,5,6	1,2,3,4,5,6,7	1,2,3,4,5,6,7,8		1,2,3,4,5,6,7		1,4,5,6,7	1,2,3,4,5,6,7,8	1,2,4,5,6		1,2,3,4,5,6,7,8	3,4,5,6,7
Operate Control Boards (2)		3,4,5,6,7			1,2,4,5,6						1,4,5,6,7		1,2,4,5,6			3,4,5,6,7
Communicate and Interact	1,2,3,4,5,6,7	1,2,3,4,5,6,7		1,2,3,4,5,6,7,8	1,2,3,4,5,6,7	1,2,3,4,5,6,7	1,2,3,4,5,6,7,8		1,2,3,4,5,6,7		1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7		1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8
Demonstrate Supervisory Ability (3)	1,2,3,4,5,6,7			1,2,3,4,5,6,7,8		1,2,3,4,5,6,7	1,2,3,4,5,6,7,8		1,2,3,4,5,6,7			1,2,3,4,5,6,7,8			1,2,3,4,5,6,7,8	
Comply With and Use Tech Specs. (3)	1,3			1,5		1,3	2,3		1,3			1,5			2,3	

Notes:

(1) Includes Technical Specification compliance for an RO.

(2) Optional for an SRO-U.

(3) Only applicable to SROs.

**Instructions:**

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

Facility: Three Mile Island		Date of Examination: April 2012				Operating Test No.: 289-2012-301										
Competencies	APPLICANTS															
	RO-1 <input checked="" type="checkbox"/>				RO-2 <input checked="" type="checkbox"/>				RO-3 <input checked="" type="checkbox"/>				RO-4 <input type="checkbox"/>			
	SRO-I <input type="checkbox"/>				SRO-I <input type="checkbox"/>				SRO-I <input type="checkbox"/>				SRO-I <input type="checkbox"/>			
	SRO-U <input type="checkbox"/>				SRO-U <input type="checkbox"/>				SRO-U <input type="checkbox"/>				SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	4 BOP	1	2 ATC	5 BOP	4 BOP	1 BOP	2 BOP	5 ATC	4 BOP	1	2 BOP	5 ATC				
Interpret/ Diagnose Events and Conditions	1,2,3, 4,5,6, 7		1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7,8		1,2,3, 4,5,6, 7	1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7		1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7,8				
Comply With and Use Procedures (1)	1,2,3, 6,7		1,4,5, 6,7	3,4,5, 6,7		1,2,4, 5,6	2,4,5, 7,8	2,4,5, 6,7,8	1,2,3, 6,7		2,4,5, 7,8	2,4,5, 6,7,8				
Operate Control Boards (2)	1,2,3, 6,7		1,4,5, 6,7	3,4,5, 6,7		1,2,4, 5,6	2,4,5, 7,8	2,4,5, 6,7,8	1,2,3, 6,7		2,4,5, 7,8	2,4,5, 6,7,8				
Communicate and Interact	1,2,3, 4,5,6, 7		1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7,8		1,2,3, 4,5,6, 7	1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7		1,2,3, 4,5,6, 7,8	1,2,3, 4,5,6, 7,8				
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 applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Facility: Three Mile Island		Date of Exam: 4/24/12		Exam Level: RO <input checked="" type="checkbox"/> SRO <input checked="" type="checkbox"/>						
Item Description	Initial									
	a	b*	c*							
1. Questions and answers are technically accurate and applicable to the facility.	grr	bw	J							
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	grr	bw	J							
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401	grr	bw	J							
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 exam, consult the NRC OL program office).			J							
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 <input checked="" type="checkbox"/> the licensee certifies that there is no duplication; or ___ other (explain)	grr	bw	J							
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.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Bank</th> <th>Modified</th> <th>New</th> </tr> <tr> <td>28/9</td> <td>4/3</td> <td>43/13</td> </tr> </table>	Bank	Modified	New	28/9	4/3	43/13	grr	bw	J
Bank	Modified	New								
28/9	4/3	43/13								
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 KAs support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Memory</th> <th>C/A</th> </tr> <tr> <td>35 / 6</td> <td>40 / 19</td> </tr> </table>	Memory	C/A	35 / 6	40 / 19	grr	bw	J		
Memory	C/A									
35 / 6	40 / 19									
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	grr	bw	J							
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	grr	bw	J							
10. Question psychometric quality and format meet the guidelines in ES Appendix B.	grr	bw	J							
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with value on cover sheet	grr	bw	J							
Printed Name / Signature		Date								
a. Author	Gregory R. Hoek / <i>Gregory R. Hoek</i>	4/18/12								
b. Facility Reviewer (*)	Deborah Oshall / <i>Deborah Oshall</i>	4/18/12								
c. NRC Chief Examiner (#)	John Caruso / <i>John Caruso</i>	4/18/12								
d. NRC Regional Supervisor	David Jackson / <i>David Jackson</i>	4/23/12								
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.										

Facility: <u>THREE MILE ISLAND</u> Date of Exam: <u>4/26/12</u> Exam Level: ROX SROX			
Item Description	Initials		
	a	b	c
1. Clean answer sheets copied before grading	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
2. Answer key changes and question deletions justified and documented	N/A	N/A	N/A
3. Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
4. Grading for all borderline cases (80 $\pm$ 2% overall and 70 or 80, as applicable, $\pm$ 4% on the SRO-only) reviewed in detail	N/A	N/A	N/A
5. All other failing examinations checked to ensure that grades are justified	N/A	N/A	N/A
6. Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
Printed Name/Signature		Date	
a. Grader	<u>GREGORY R. HOEK / <i>[Signature]</i></u>	<u>5/2/12</u>	
b. Facility Reviewer(*)	<u>Joseph Kulasmisky / <i>[Signature]</i></u>	<u>5/2/12</u>	
c. NRC Chief Examiner (*)	<u>JOHN CARUSO / <i>[Signature]</i></u>	<u>5/4/12</u>	
d. NRC Supervisor (*)	<u>Donald E. Jackson / <i>[Signature]</i></u>	<u>5/7/12</u>	
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.			