

2016 Crew A

Facility: Quad Cities			Date of Exam: 4/18/16			Operating Test No.: 14-1											
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 (*)		
		1			2			3			4						
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		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"/>	RX	5										6		2	1	1	0
SRO-I <input type="checkbox"/>	NOR	1								1				2	1	1	1
<input checked="" type="checkbox"/> 1	I/C	2,3,7, 8,9								2,3,6		3,7		10	4	4	2
SRO-U <input type="checkbox"/>	MAJ	6								7		8		3	2	2	1
	TS	4,5												2	0	2	2
RO <input type="checkbox"/>	RX		5					4						2	1	1	0
SRO-I <input type="checkbox"/>	NOR							1					1	2	1	1	1
<input checked="" type="checkbox"/> 2	I/C		3,7					2,3,5, 6,8					2,5	9	4	4	2
SRO-U <input type="checkbox"/>	MAJ		6					7					8	3	2	2	1
	TS							5,6						2	0	2	2
RO <input type="checkbox"/>	RX								4			6		2	1	1	0
SRO-I <input type="checkbox"/>	NOR			1								1		2	1	1	1
<input checked="" type="checkbox"/> 3	I/C			2,8					5,8			2,3,5, 7,9		9	4	4	2
SRO-U <input type="checkbox"/>	MAJ			6					7			8		3	2	2	1
	TS											2,4		2	0	2	2
RO <input type="checkbox"/>	RX														1	1	0
SRO-I <input type="checkbox"/>	NOR														1	1	1
<input type="checkbox"/>	I/C														4	4	2
SRO-U <input type="checkbox"/>	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 (SRO-I) 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 SRO-I *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 one-for-one 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.
- For licensees that use the ATC operator primarily for monitoring plant parameters, the chief examiner may place SRO-I applicants in either the ATC or BOP position to best evaluate the SRO-I in manipulating plant controls.

2016 Crew B

Facility: Quad Cities			Date of Exam: 4/18/16			Operating Test No.: 14-1											
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 (*)		
		1			2			3			4						
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		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"/>	RX	5			2							6		3	1	1	0
SRO-I <input checked="" type="checkbox"/> 4	NOR	1			1									2	1	1	1
SRO-U <input type="checkbox"/>	I/C	2,3,7, 8,9			3,5,6, 7,9							3,7		12	4	4	2
	MAJ	6			8							8		3	2	2	1
	TS	4,5			4,5									4	0	2	2
RO <input type="checkbox"/>	RX		5									6		2	1	1	0
SRO-I <input checked="" type="checkbox"/> 5	NOR					1						1		2	1	1	1
SRO-U <input type="checkbox"/>	I/C		3,7			6,7						2,3,5, 7,9		9	4	4	2
	MAJ		6			8						8		3	2	2	1
	TS											2,4		2	0	2	2
RO <input checked="" type="checkbox"/> 1	RX				2									1	1	1	0
SRO-I <input type="checkbox"/>	NOR			1									1	2	1	1	1
SRO-U <input type="checkbox"/>	I/C			2,8		3,5, 9							2,5	7	4	4	2
	MAJ			6		8							8	3	2	2	1
	TS													0	0	2	2
RO <input type="checkbox"/>	RX														1	1	0
SRO-I <input type="checkbox"/>	NOR														1	1	1
SRO-U <input type="checkbox"/>	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 (SRO-I) 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 SRO-I *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 one-for-one 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.
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2016 Crew C

Facility: Quad Cities			Date of Exam: 4/18/16			Operating Test No.: 14-1												
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(*)			
		1			2			3			4							
		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"/>	RX	5			2				4						3	1	1	0
SRO-I <input type="checkbox"/>	NOR	1			1										2	1	1	1
<input checked="" type="checkbox"/> 6	I/C	2,3,7, 8,9			3,5,6, 7,9				5,8						12	4	4	2
SRO-U <input type="checkbox"/>	MAJ	6			8				7						3	2	2	1
	TS	4,5			4,5										4	0	2	2
RO <input type="checkbox"/>	RX		5					4							2	1	1	0
SRO-I <input type="checkbox"/>	NOR					1		1							2	1	1	1
<input checked="" type="checkbox"/> 7	I/C		3,7			6,7		2,3,5, 6,8							9	4	4	2
SRO-U <input type="checkbox"/>	MAJ		6			8		7							3	2	2	1
	TS							5,6							2	0	2	2
RO <input checked="" type="checkbox"/> 2	RX				2										1	1	1	0
SRO-I <input type="checkbox"/>	NOR			1						1					2	1	1	1
SRO-U <input type="checkbox"/>	I/C			2,8		3,5, 9			2,3,6						8	4	4	2
	MAJ			6		8			7						3	2	2	1
	TS														0	0	2	2
RO <input type="checkbox"/>	RX															1	1	0
SRO-I <input type="checkbox"/>	NOR															1	1	1
SRO-U <input type="checkbox"/>	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 (SRO-I) 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 SRO-I *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
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2016 Crew D

Facility: Quad Cities				Date of Exam: 4/18/16				Operating Test No.: 14-1										
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(*)			
		1			2			3			4							
		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"/>	RX				2							6			2	1	1	0
SRO-I <input checked="" type="checkbox"/> 8	NOR				1					1					2	1	1	1
SRO-U <input type="checkbox"/>	I/C				3,5,6, 7,9					2,3,6		3,7			10	4	4	2
	MAJ				8					7		8			3	2	2	1
	TS				4,5										2	0	2	2
RO <input type="checkbox"/>	RX				2			4				6			3	1	1	0
SRO-I <input checked="" type="checkbox"/> 9	NOR							1				1			2	1	1	1
SRO-U <input type="checkbox"/>	I/C				3,5, 9			2,3,5, 6,8				2,3,5, 7,9			13	4	4	2
	MAJ				8			7				8			3	2	2	1
	TS							5,6				2,4			4	0	2	2
RO <input checked="" type="checkbox"/> 3	RX							4							1	1	1	0
SRO-I <input type="checkbox"/>	NOR					1							1		2	1	1	1
SRO-U <input type="checkbox"/>	I/C					6,7		5,8					2,5		6	4	4	2
	MAJ					8		7					8		3	2	2	1
	TS														0	0	2	2
RO <input type="checkbox"/>	RX															1	1	0
SRO-I <input type="checkbox"/>	NOR															1	1	1
SRO-U <input type="checkbox"/>	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 (SRO-I) 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 SRO-I *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
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Crew A

Facility: Quad Cities		Date of Examination: 4/18/16		Operating Test No.:14-1												
Competencies	APPLICANTS															
	RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 1 SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 2 SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 3 SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1 S R O	2	3 B O P	4 A T C	1 A T C	2	3 S R O	4 B O P	1 B O P	2	3 A T C	4 S R O	1	2	3	4
Interpret/Diagnose Events and Conditions	2-9		2,6,7	3,6,7	3,5,6,7		2,3,5,6,7	2,5,6,8,9	2,4,6,8,9		5,7,8	2-9				
Comply With and Use Procedures (1)	2-6		1,2,3,6,7	3,6,7,8	3,5,6		5,6,7	1,2,5,6,8,9	1,2,4,5,6,8		4,5,7,8	2,4,7,8,9				
Operate Control Boards (2)	N/A		1,2,3,6,7	3,6,7,8	3,5,6		N/A	1,2,5,8,9	1,2,5,6,8		4,5,7,8	N/A				
Communicate and Interact	1-9		1-4,6-8	3,6-9	3,5,6,7,8		1-8	1-9	1-9		1-8	1-9				
Demonstrate Supervisory Ability (3)	2-6		N/A	N/A	N/A		2-7	N/A	N/A		N/A	2,3,5-9				
Comply With and Use Tech. Specs. (3)	4,5		N/A	N/A	N/A		5,6	N/A	N/A		N/A	2,4				

Notes:

(1) Includes Technical Specification compliance for an RO.

(2) Optional for an SRO-U.

(3) Only applicable to SROs.

Instructions:

Check the applicants' license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant. (This includes all rating factors for each competency.) (Competency Rating factors as described on forms ES-303-1 and ES-303-3.)

Crew B

Facility: Quad Cities		Date of Examination: 4/18/16				Operating Test No.: 14-1										
Competencies	APPLICANTS															
	RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1 S R O	2 S R O	3	4 A T C	1 A T C	2 B O P	3	4 S R O	1 B O P	2 A T C	3	4 B O P	1	2	3	4
Interpret/Diagnose Events and Conditions	2-9	3-9		3,6,7	3,5,6,7	4,6,7,8,9		2-9	2,4,6,8,9	3,5,8,9		2,5,6,8,9				
Comply With and Use Procedures (1)	2-6	2,3,4,5,7,8		3,6,7,8	3,5,6	1,6-9		2,4,7,8,9	1,2,4,5,6,8	2,3,5,8,9		1,2,5,6,8,9				
Operate Control Boards (2)	N/A	N/A		3,6,7,8	3,5,6	1,6,7,8		N/A	1,2,5,6,8	2,3,5,8,9		1,2,5,8,9				
Communicate and Interact	1-9	1-9		3,6-9	3,5,6,7,8	1,6-9		1-9	1-9	1-9		1-9				
Demonstrate Supervisory Ability (3)	2-6	1-9		N/A	N/A	N/A		2,3,5-9	N/A	N/A		N/A				
Comply With and Use Tech. Specs. (3)	4,5	4,5		N/A	N/A	N/A		2,4	N/A	N/A		N/A				
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. (This includes all rating factors for each competency.) (Competency Rating factors as described on forms ES-303-1 and ES-303-3.)

Crew C

Facility: Quad Cities		Date of Examination: 4/18/16				Operating Test No.: 14-1										
Competencies	APPLICANTS															
	RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 6 SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 7 SRO-U <input type="checkbox"/>				RO <input checked="" type="checkbox"/> 2 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1 S R O	2 S R O	3 A T C	4	1 A T C	2 B O P	3 S R O	4	1 B O P	2 A T C	3 B O P	4	1	2	3	4
Interpret/Diagnose Events and Conditions	2-9	3-9	5,7,8		3,5,6,7	4,6,7,8,9	2,3,5,6,7		2,4,6,8,9	3,5,8,9	2,6,7					
Comply With and Use Procedures (1)	2-6	2,3,4,5,7,8	4,5,7,8		3,5,6	1,6-9	5,6,7		1,2,4,5,6,8	2,3,5,8,9	1,2,3,6,7					
Operate Control Boards (2)	N/A	N/A	4,5,7,8		3,5,6	1,6,7,8	N/A		1,2,5,6,8	2,3,5,8,9	1,2,3,6,7					
Communicate and Interact	1-9	1-9	1-8		3,5,6,7,8	1,6-9	1-8		1-9	1-9	1-4,6-8					
Demonstrate Supervisory Ability (3)	2-6	1-9	N/A		N/A	N/A	2-7		N/A	N/A	N/A					
Comply With and Use Tech. Specs. (3)	4,5	4,5	N/A		N/A	N/A	5,6		N/A	N/A	N/A					
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. (This includes all rating factors for each competency.) (Competency Rating factors as described on forms ES-303-1 and ES-303-3.)

Crew D

Facility: Quad Cities		Date of Examination: 4/18/16		Operating Test No.:14-1												
Competencies	APPLICANTS															
	RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 8 SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 9 SRO-U <input type="checkbox"/>				RO <input checked="" type="checkbox"/> 3 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Interpret/Diagnose Events and Conditions		3-9	2,6,7	3,6,7		3,5,8,9	2,3,5,6,7	2-9		4,6,7,8,9	5,7,8	2,5,6,8,9				
Comply With and Use Procedures (1)		2,3,4,5,7,8	1,2,3,6,7	3,6,7,8		2,3,5,8,9	5,6,7	2,4,7,8,9		1,6-9	4,5,7,8	1,2,5,6,8,9				
Operate Control Boards (2)		N/A	1,2,3,6,7	3,6,7,8		2,3,5,8,9	N/A	N/A		1,6,7,8	4,5,7,8	1,2,5,8,9				
Communicate and Interact		1-9	1-4,6-8	3,6-9		1-9	1-8	1-9		1,6-9	1-8	1-9				
Demonstrate Supervisory Ability (3)		1-9	N/A	N/A		N/A	2-7	2,3,5-9		N/A	N/A	N/A				
Comply With and Use Tech. Specs. (3)		4,5	N/A	N/A		N/A	5,6	2,4		N/A	N/A	N/A				
Notes: (1) Includes Technical Specification compliance for an RO. (2) Optional for an SRO-U. (3) Only applicable to SROs.																

Instructions:

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Facility: <u>Quad Cities Nuclear</u>		Date of Exam: <u>4/18/16</u>		Exam Level: RO <input checked="" type="checkbox"/> SRO <input checked="" type="checkbox"/>		
Station Item Description				Initial		
				a	b*	c*#
1.	Questions and answers are technically accurate and applicable to the facility.			<u>RM</u>	<u>AS</u>	<u>BP</u>
2.	a. NRC K/As are referenced for all questions.			<u>RM</u>	<u>AS</u>	<u>BP</u>
	b. Facility learning objectives are referenced as available.			<u>RM</u>	<u>AS</u>	<u>BP</u>
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401			<u>RM</u>	<u>AS</u>	<u>BP</u>
4.	The sampling process was random and systematic (If more than 4 RO or 2 SRO questions were repeated from the last two NRC licensing exams, consult the NRP/NRO OL program office).			<u>RM</u>	<u>AS</u>	<u>BP</u>
5.	Question duplication from the licensee 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 <input checked="" type="checkbox"/> the audit exam was completed before the license exam was started; or ___ the examinations were developed independently; or ___ the licensee certifies that there is no duplication; or ___ other (explain)			<u>RM</u>	<u>AS</u>	<u>BP</u>
6.	Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right	Bank	Modified	New		
		<u>3018</u>	<u>112</u>	<u>44115</u>	<u>RM</u>	<u>AS</u>
7.	Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory	C/A			
		<u>3515</u>	<u>40120</u>		<u>RM</u>	<u>AS</u>
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.			<u>RM</u>	<u>AS</u>	<u>BP</u>
9.	Question content conforms to specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.			<u>RM</u>	<u>AS</u>	<u>BP</u>
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.			<u>RM</u>	<u>AS</u>	<u>BP</u>
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.			<u>RM</u>	<u>AS</u>	<u>BP</u>
Printed Name / Signature				Date		
a.	Author	<u>Raymond J. Venci / Raymond J. Venci</u>			<u>4/5/16</u>	
b.	Facility Reviewer (*)	<u>JASON SWAIN / [Signature]</u>			<u>2/5/16</u>	
c.	NRC Chief Examiner (#)	<u>BRUCE PALAGI / Bruce Palagi</u>			<u>4/12/16</u>	
d.	NRC Regional Supervisor ^{RSD}	<u>Robert J. Orlowski / [Signature]</u>			<u>4/12/2016</u>	
Note: * The facility reviewer's initials or signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initials items in Column "c"; chief examiner concurrence required.						