

**2014 LASALLE COUNTY STATION**

**INITIAL LICENSE EXAMINATION**

**OUTLINE SUBMITTAL**

*Forms*

Facility: LaSalle		Date of Examination: 10/20/14		
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.	ENV	G	RW
	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.	ENV	G	RW
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	ENV	G	RW
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	ENV	G	RW
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.	ENV	G	RW
	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 scenarios will not be repeated on subsequent days.	ENV	G	RW
	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.	ENV	G	RW
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	ENV	G	me
	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	ENV	G	RW
	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.	ENV	G	RW
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 section.	ENV	G	RW
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	ENV	G	RW
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	ENV	G	RW
	d. Check for duplication and overlap among exam sections.	ENV	G	RW
	e. Check the entire exam for balance of coverage.	ENV	G	RW
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	ENV	G	RW
a. Author <u>ERIK R VOLLING / Erik R Volle</u> b. Facility Reviewer (*) <u>MARK ZICKEFOOSE / Mark Zickefoose</u> c. NRC Chief Examiner (#) <u>Michael Bielby / Michael E Bielby</u> d. NRC Supervisor <u>BPalayi For HP / Brian Palayi</u>		Date <u>7/12/14</u> <u>7/19/14</u> <u>8/28/14</u> <u>8/29/14</u>		
NOTE: # Independent NRC Reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines.				

\* To be verified when audit administered

Facility: LaSalleDate of Examination: 10/15/15Examination Level: RO ☒ SRO ☐Operating Test Number: 2014301

Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N R	Perform a Manual Heat Balance, LOS-CX-S001, with a Faulted Value (A-RO-41) 2.1.25 IR 3.9; Ability to interpret reference materials, such as graphs, curves, tables, etc.
Conduct of Operations	D R	Evaluate License Maintenance Requirements (A-RO-15) 2.1.4 IR 3.3; Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc.
Equipment Control	N R	Print Reading Exercise (A-RO-42) 2.2.41 IR 3.5; Ability to obtain and interpret station electrical and mechanical drawings.
Radiation Control	P D S	Determine Brief and Protective Clothing Requirements (A-RO-35) 2.3.7; IR 3.5; Ability to comply with radiation work permit requirements during normal or abnormal conditions.
Emergency Procedures/Plan		

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

\* Type Codes &amp; Criteria:

(C)ontrol room, (S)imulator, or Class(R)oom

(D)irect from bank ( $\leq 3$  for ROs;  $\leq 4$  for SROs & RO retakes)(N)ew or (M)odified from bank ( $\geq 1$ )(P)revious 2 exams ( $\leq 1$ ; randomly selected)

Facility: LaSalleDate of Examination: 10/15/14Examination Level: RO ☐ SRO ☒Operating Test Number: 2014301

Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P D R	Handling Personnel Injuries (A-SRO-35) 2.1.08 IR 4.1; Ability to coordinate personnel activities outside the control room.
Conduct of Operations	N R	Determine Reporting Requirements per OP-AA-106-101 (A-SRO-51) 2.1.18 IR 3.8; Ability to make accurate, clear and concise logs, records, status boards and reports.
Equipment Control	N S	Determine PRA / Online Risk (A-SRO-49) 2.2.17 IR 3.8; Knowledge of the process for managing maintenance activities during power operations, such as risk assessments, work prioritization, and coordination with the transmission system operator.
Radiation Control	D S	Determine ODCM Compensatory Measures (A-SRO-50) 2.3.15 IR 3.1; Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.
Emergency Procedures/Plan	D R	Classify an Event / Loss of Annunciators (A-SRO-48) 2.4.41 IR 4.6; Knowledge of the emergency action level thresholds and classifications.
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.		
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank ( $\leq 3$ for ROs; $\leq 4$ for SROs & RO retakes) (N)ew or (M)odified from bank ( $\geq 1$ ) (P)revious 2 exams ( $\leq 1$ ; randomly selected)		



Facility: LaSalleDate of Examination: 10/15/14Exam Level: RO ☒ SRO-I ☐ SRO-U ☐Operating Test Number: 2014301Control Room Systems<sup>®</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
a. Reactor Feedwater System 259001 A4.02 RO 3.9; Startup of the Second TDRFP (S-FW-17)	M A S	2
b. Main Turbine Trip 295005 AA1.04 RO 2.7; Load the Main Generator / Respond to a Generator Lockout (S-TG-02)	N A L S	3
c. RCIC 217000 A2.01 RO 3.8; RCIC Inadvertent Initiation (S-RI-12)	P D A S	4
d. Primary Containment System and Auxiliaries 223001 A4.10 RO 3.2 Secure the Drywell Inerting Lineup (S-VQ-13)	N L S	5
e. Partial or Complete Loss of Power 295003 AA1.01 RO 3.7; Perform Loss of Bus 141Y Hard Card (S-AP-05)	P D A E N S	6
f. APRM/LPRM 212000 A 4.14 RO 3.8; Bypass INOP OPRM (S-NR-10)	D S	7
g. Fire Protection System 286000 A2.08 RO 3.2; Starting Service Water Pumps to Maintain Fire Header Pressure (S-FP-01)	D L S	8
h. Offgas System 271000 A2.03 RO 3.5; Startup of the Mechanical Vacuum Pump (S-OG-02)	D L S	9

In-Plant Systems<sup>®</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. RCMS 201002 2.1.30 RO 4.4; Loss of RCMS and Controller Interface Power (2H13-P659 Electronics) (P-RM-04)	D E	1
j. Reactor Low Water Level 295031 EA1.08 RO 3.8; Lineup a Fire Hose to 2A TDRFP for Injection into the RPV (P-FP-04)	P D E R	2
k. High Drywell Temperature 295012 AA1.02 RO 3.8; Defeat Isolations per LGA-VP-01 (P-VP-01)	D E R	5

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

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

Facility: LaSalleDate of Examination: 10/15/14Exam Level: RO ☐ SRO-I ☒ SRO-U ☐Operating Test Number: 2014301Control Room Systems<sup>®</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
a. Reactor Feedwater System 259001 A4.02 RO 3.9/SRO 3.7 Startup of the Second TDRFP (S-FW-17)	M A S	2
b. Main Turbine Trip 295005 AA1.04 RO 2.7/SRO 2.8 Load the Main Generator / Respond to a Generator Lockout (S-TG-02)	N A L S	3
c. RCIC 217000 A2.01 RO 3.8/SRO 3.7 RCIC Inadvertent Initiation (S-RI-12)	P D A S	4
d.		
e. Partial or Complete Loss of Power 295003 AA1.01 RO 3.7/SRO 3.8, Perform Loss of Bus 141Y Hard Card (S-AP-05)	P D A E N S	6
f. APRM/LPRM 212000 A 4.14 RO 3.8/SRO 3.8 Bypass INOP OPRM (S-NR-10)	D S	7
g. Fire Protection System 286000 A2.08 RO 3.2/SRO 3.3 Starting Service Water Pumps to Maintain Fire Header Pressure (S-FP-01)	D L S	8
h. Offgas System 271000 A2.03 RO 3.5/SRO 3.8 Startup of the Mechanical Vacuum Pump (S-OG-02)	D L S	9

In-Plant Systems<sup>®</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. RCMS 201002 2.1.30 RO 4.4/SRO 4.0 Loss of RCMS and Controller Interface Power (2H13-P659 Electronics) (P-RM-04)	D E	1
j. Reactor Low Water Level 295031 EA1.08 RO 3.8/SRO 3.9 Lineup a Fire Hose to 2A TDRFP for Injection into the RPV (P-FP-04)	P D E R	2
k. High Drywell Temperature 295012 AA1.02 RO 3.8/SRO 3.8 Defeat Isolations per LGA-VP-01 (P-VP-01)	D E R	5

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

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

Facility: LaSalleDate of Examination: 10/15/14Exam Level: RO ☐ SRO-I ☐ SRO-U ☒Operating Test Number: 2014301

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. Reactor Feedwater System 259001 A4.02 RO 3.9/SRO 3.7 Startup of the Second TDRFP (S-FW-17)	M A S	2
b. Main Turbine Trip 295005 AA1.04 RO 2.7/SRO 2.8 Load the Main Generator / Respond to a Generator Lockout (S-TG-02)	N A L S	3
c.		
d.		
e. Partial or Complete Loss of Power 295003 AA1.01 RO 3.7/SRO 3.8, Perform Loss of Bus 141Y Hard Card (S-AP-05)	P D A E N S	6
f.		
g.		
h.		

In-Plant Systems® (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. RCMS 201002 2.1.30 RO 4.4/SRO 4.0 Loss of RCMS and Controller Interface Power (2H13-P659 Electronics) (P-RM-04)	D E	1
j.		
k. High Drywell Temperature 295012 AA1.02 RO 3.8/SRO 3.8 Defeat Isolations per LGA-VP-01 (P-VP-01)	D E R	5

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

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

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

**NRC CREW A**

Facility: LaSalle		Date of Exam: 10/20/14						Operating Test Number: 2014301												
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 checked="" type="checkbox"/> 1 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX					2										1	1	1	0	
	NOR			1												1	1	1	1	
	I/C			5 8		4 6										4	4	4	2	
	MAJ			9		7										2	2	2	1	
	TS															0	0	2	2	
RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 5 SRO-U <input type="checkbox"/>	RX		2		2											2	1	1	0	
	NOR				1											1	1	1	1	
	I/C		3 6		3 4 5 6											6	4	4	2	
	MAJ		9		7											2	2	2	1	
	TS				3 4											2	0	2	2	
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/> 9	RX	2														1	1	1	0	
	NOR	1					1									2	1	1	1	
	I/C	3 5 6 8					3 5									6	4	4	2	
	MAJ	9					7									2	2	2	1	
	TS	4 7														2	0	2	2	
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	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.

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

**NRC CREW B**

Facility: LaSalle			Date of Exam: 10/20/14			Operating Test Number: 2014301												
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 checked="" type="checkbox"/> 2 SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX				2										1	1	1	0
	NOR			1											1	1	1	1
	I/C			5 8		4 6									4	4	4	2
	MAJ			9		7									2	2	2	1
	TS														0	0	2	2
RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> 6 SRO-U <input type="checkbox"/>	RX		2		2										2	1	1	0
	NOR				1										1	1	1	1
	I/C		3 6		3 4 5 6										6	4	4	2
	MAJ		9		7										2	2	2	1
	TS				3 4										2	0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/> 10	RX	2													1	1	1	0
	NOR	1					1								2	1	1	1
	I/C	3 5 6 8					3 5								6	4	4	2
	MAJ	9					7								2	2	2	1
	TS	4 7													2	0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	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.



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

**NRC CREW C**

Facility: LaSalle

Date of Exam: 10/20/14

Operating Test Number: 2014301

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				
RO ☑ 3 SRO-I ☐ SRO-U ☐	RX		2											1	1	1	0
	NOR									3				1	1	1	1
	I/C		3 6							4 6				4	4	4	2
	MAJ		9							8				2	2	2	1
	TS													0	0	2	2
RO ☑ 4 SRO-I ☐ SRO-U ☐	RX							1						1	1	1	0
	NOR			1										1	1	1	1
	I/C			5 8					2 7					4	4	4	2
	MAJ			9					8					2	2	2	1
	TS													0	0	2	2
RO ☐ SRO-I ☐ SRO-U ☑ 11	RX	2						1						2	1	1	0
	NOR	1						3						2	1	1	1
	I/C	3 5 6 8						3 4 6 7						8	4	4	2
	MAJ	9						8						2	2	2	1
	TS	4 7						5 7						4	0	2	2
RO ☐ SRO-I ☐ SRO-U ☐	RX														1	1	0
	NOR														1	1	1
	I/C														4	4	2
	MAJ														2	2	1
	TS														0	2	2

**Instructions:**

- 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**

**NRC CREW D**

Facility: LaSalle			Date of Exam: 10/20/14			Operating Test Number: 2014301											
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				
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> <input checked="" type="checkbox"/> 7 SRO-U <input type="checkbox"/>	RX				2				1					2	1	1	0
	NOR				1									1	1	1	1
	I/C				3 4 5 6				2 7					6	4	4	2
	MAJ				7				8					2	2	2	1
	TS				3 4									2	0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> <input checked="" type="checkbox"/> 8 SRO-U <input type="checkbox"/>	RX					2		1						2	1	1	0
	NOR							3						1	1	1	1
	I/C					4 6		3 4 6 7						6	4	4	2
	MAJ					7		8						2	2	2	1
	TS							5 7						2	0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX						1								1	1	0
	NOR								3						1	1	1
	I/C						3 5		4 6						4	4	2
	MAJ						7		8						2	2	1
	TS														0	2	2
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	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 Name: LaSalle				Date of Exam: 10/20/2014															
Tier	Group	RO K/A Category Points											SRO-Only Points						
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2		G*	Total		
1. Emergency & Abnormal Plant Evolutions	1	3	4	4	N/A			3	3	N/A			3	20	4		3	7	
	2	1	1	2				1	1				1	7	1	2	3		
	Tier Totals	4	5	6				4	4				4	27	5	5	10		
2. Plant Systems	1	2	2	2	2	2	3	3	3	2	2	3	26	2		3	5		
	2	1	1	1	1	2	1	1	1	1	1	1	12	0	1	2	3		
	Tier Totals	3	3	3	3	4	4	4	4	4	3	3	4	38	3		5	8	
3. Generic Knowledge and Abilities Categories					1		2		3		4		10		1	2	3	4	7
					3		3		2		2				2	2	1	2	

- Note: 1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by  $\pm 1$  from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to Section D.1.b of ES-401 for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- 7.\* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. Refer to Section D.1.b of ES-401 for the applicable K/As.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G\* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.



	BWR Examination Outline										Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO)												
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#		
1	295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4			0 4				Knowledge of the reasons for the following responses as they apply to Partial or Complete Loss of Forced Core Flow Circulation: Reactor SCRAM	3.4	1		
2	295003 Partial or Complete Loss of AC / 6		0 6					Knowledge of the interrelations between Partial or Complete Loss of AC and the following: D.C. electrical loads	3.4	1		
3	295004 Partial or Total Loss of DC Pwr / 6						04. 01	Knowledge of EOP entry conditions and immediate action steps.	4.6	1		
4	295005 Main Turbine Generator Trip / 3				0 1			Ability to operate and/or monitor the following as they apply to Main Turbine Generator Trip: Recirculation system: Plant-Specific	3.1	1		
5	295006 SCRAM / 1			0 4				Knowledge of the reasons for the following responses as they apply to SCRAM: Reactor water level setpoint setdown: Plant-Specific	3.1	1		
6	295016 Control Room Abandonment / 7						04. 34	Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.	4.2	1		
7	295018 Partial or Total Loss of CCW / 8				0 3			Ability to operate and/or monitor the following as they apply to Partial or Total Loss of CCW: Affected systems so as to isolate damaged portions	3.3	1		
8	295019 Partial or Total Loss of Inst. Air / 8		0 9					Knowledge of the interrelations between Partial or Total Loss of Inst. Air and the following: Containment	3.3	1		
9	295021 Loss of Shutdown Cooling / 4	0 4						Knowledge of the operational implications of the following concepts as they apply to Loss of Shutdown Cooling: Natural circulation	3.6	1		
10	295023 Refueling Acc / 8					0 1		Ability to determine and/or interpret the following as they apply to Refueling Accidents: Area radiation levels	3.6	1		
11	295024 High Drywell Pressure / 5					0 3		Ability to determine and/or interpret the following as they apply to High Drywell Pressure: Suppression pool level	3.8	1		
12	295025 High Reactor Pressure / 3			0 6				Knowledge of the reasons for the following responses as they apply to High Reactor Pressure: Alternate rod insertion: Plant-Specific	4.2	1		
13	295026 Suppression Pool High Water Temp. / 5	0 1						Knowledge of the operational implications of the following concepts as they apply to Suppression Pool High Water Temp.: Pump NPSH	3.0	1		
N/A	295027 High Containment Temperature / 5									0		
14	295028 High Drywell Temperature / 5						04. 20	Knowledge of the operational implications of EOP warnings, cautions, and notes.	3.8	1		
15	295030 Low Suppression Pool Wtr Lvl / 5	0 3						Knowledge of the operational implications of the following concepts as they apply to Low Suppression Pool Wtr Lvl: Heat capacity	3.8	1		
16	295031 Reactor Low Water Level / 2					0 3		Ability to determine and/or interpret the following as they apply to Reactor Low Water Level: Reactor pressure	4.2	1		
17	295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1		0 1					Knowledge of the interrelations between SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown and the following: RPS	4.2	1		
18	295038 High Off-site Release Rate / 9				0 1			Ability to operate and/or monitor the following as they apply to High Off-site Release Rate: Stack-gas monitoring system: Plant-Specific	3.9	1		
19	600000 Plant Fire On Site / 8		0 1					Knowledge of the interrelations between Plant Fire On Site and the following: Sensors, detectors and valves	2.6	1		
20	700000 Generator Voltage and Electric Grid Disturbances / 6			0 2				Knowledge of the reasons for the following responses as they apply to Generator Voltage and Electric Grid Disturbances: Actions contained in abnormal operating procedure for voltage and grid disturbances	3.6	1		
	K/A Category Totals:	3	4	4	3	3	3	Group Point Total:			20	



ES-401 BWR Examination Outline Form ES-401-1										
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
	295002 Loss of Main Condenser Vac / 3									0
	295007 High Reactor Pressure / 3									0
	295008 High Reactor Water Level / 2									0
22	295009 Low Reactor Water Level / 2	0 2						Knowledge of the operational implications of the following concepts as they apply to Low Reactor Water Level: Recirculation pump net positive suction head: Plant-Specific	3.0	1
	295010 High Drywell Pressure / 5									0
N/A	295011 High Containment Temp / 5									0
	295012 High Drywell Temperature / 5									0
	295013 High Suppression Pool Temp. / 5									0
23	295014 Inadvertent Reactivity Addition / 1			0 1				Knowledge of the reasons for the following responses as they apply to Inadvertent Reactivity Addition: Reactor SCRAM	4.1	1
	295015 Incomplete SCRAM / 1									0
24	295017 High Off-site Release Rate / 9						04. 09	Knowledge of low power/shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies.	3.8	1
	295020 Inadvertent Cont. Isolation / 5 & 7									0
25	295022 Loss of CRD Pumps / 1				0 1			Ability to operate and/or monitor the following as they apply to Loss of CRD Pumps: CRD hydraulic system	3.1	1
26	295029 High Suppression Pool Wtr Lvl / 5					0 1		Ability to determine and/or interpret the following as they apply to High Suppression Pool Wtr Lvl: Suppression pool water level	3.5	1
27	295032 High Secondary Containment Area Temperature / 5		0 6					Knowledge of the interrelations between High Secondary Containment Area Temperature and the following: Area temperature monitoring system	3.3	1
	295033 High Secondary Containment Area Radiation Levels / 9									0
	295034 Secondary Containment Ventilation High Radiation / 9									0
21	295035 Secondary Containment High Differential Pressure / 5			0 2				Knowledge of the reasons for the following responses as they apply to Secondary Containment High Differential Pressure: Secondary containment ventilation response	3.3	1
	295036 Secondary Containment High Sump/Area Water Level / 5									0
	500000 High CTMT Hydrogen Conc. / 5									0
K/A Category Totals:		1	1	2	1	1	1	Group Point Total:		7



ES-401		BWR Examination Outline													Form ES-401-1	
Plant Systems - Tier 2/Group 1 (RO)																
Q#	System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#	
28	203000 RHR/LPCI: Injection Mode						1 0						Knowledge of the effect that a loss or malfunction of the following will have on the RHR/LPCI: Injection Mode: Component cooling water systems	3.0	1	
29	205000 Shutdown Cooling								0 6				Ability to (a) predict the impacts of the following on the shutdown cooling; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: SDC/RHR pumps trip	3.4	1	
N/A	206000 HPCI														0	
N/A	207000 Isolation (Emergency) Condenser														0	
30 31	209001 LPCS				0 9							01. 28	Knowledge of LPCS design feature(s) and/or interlocks which provide for the following: Load sequencing; Knowledge of the purpose and function of major system components and controls.	3.3; 4.1	2	
32	209002 HPCS										1 4		Ability to manually operate and/or monitor in the control room: Test return valve: BWR-5, 6	3.0	1	
33	211000 SLC					0 4							Knowledge of the operational implications of the following concepts as they apply to: SLC: Explosive valve operation	3.1	1	
34	212000 RPS						0 8						Ability to predict and/or monitor changes in parameters associated with operating the RPS controls including: Valve position	3.4	1	
35	215003 IRM						0 6						Ability to predict and/or monitor changes in parameters associated with operating the IRM controls including: Lights and alarms	3.3	1	
36	215004 Source Range Monitor					0 2							Knowledge of the effect that a loss or malfunction of the following will have on the Source Range Monitor: 24/48 volt D.C. power	3.1	1	
38	215005 APRM / LPRM				0 5								Knowledge of the operational implications of the following concepts as they apply to: APRM / LPRM: Core flow effects on APRM trip setpoints	3.6	1	
40	217000 RCIC											01. 07	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	1	
41	218000 ADS								0 7				Ability to monitor automatic operations of the ADS including: Lights and alarms	3.7	1	
42	223002 PCIS/Nuclear Steam Supply Shutoff	0 2											Knowledge of the physical connections and/or cause-effect relationships between PCIS/Nuclear Steam Supply Shutoff and the following: Reactor water cleanup	3.3	1	
43 44	239002 SRVs						0 1				0 4		Ability to predict and/or monitor changes in parameters associated with operating the SRVs controls including: Tail pipe temperature; Ability to manually operate and/or monitor in the control room: Suppression pool temperature	3.3; 4.3	2	
45	259002 Reactor Water Level Control									0 3			Ability to monitor automatic operations of the Reactor Water Level Control including: Changes in main steam flow	3.2	1	
46 47	261000 SGTS	0 2			0 5								Knowledge of the physical connections and/or cause-effect relationships between SGTS and the following: Drywell; Knowledge of SGTS design feature(s) and/or interlocks which provide for the following: Fission product gas removal	3.2; 2.6	2	
48	262001 AC Electrical Distribution		0 1										Knowledge of electrical power supplies to the following: Off-site sources of power	3.3	1	
49	262002 UPS (AC/DC)			0 8									Knowledge of the effect that a loss or malfunction of the UPS (AC/DC) will have on following: Computer operation: Plant-Specific	2.7	1	
39 50	263000 DC Electrical Distribution		0 1					0 2					Knowledge of electrical power supplies to the following: Major D.C. loads; Ability to (a) predict the impacts of the following on the DC Electrical Distribution; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of ventilation during charging	3.1; 2.6	2	
37 51	264000 EDGs							0 5				01. 32	Ability to (a) predict the impacts of the following on the EDGs; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Synchronization of the emergency generator with other electrical supplies; Ability to explain and	3.6; 3.8	2	
52	300000 Instrument Air			0 2									Knowledge of the effect that a loss or malfunction of the Instrument Air will have on following: Systems having pneumatic valves and controls	3.3	1	
53	400000 Component Cooling Water					0 5							Knowledge of the effect that a loss or malfunction of the following will have on the Component Cooling Water: Motors	2.8	1	
K/A Category Totals:		2	2	2	2	2	3	3	3	2	2	3	Group Point Total:		26	



ES-401		BWR Examination Outline												Form ES-401-1	
		Plant Systems - Tier 2/Group 2 (RO)													
Q#	System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
	201001 CRD Hydraulic														0
	201002 RMCS														0
	201003 Control Rod and Drive Mechanism														0
N/A	201004 RSCS														0
N/A	201005 RCIS														0
54	201006 RWM			0 1									Knowledge of the effect that a loss or malfunction of the RWM will have on following: Reactor manual control system: P-Spec(Not-BWR6)	3.2	1
	202001 Recirculation														0
55	202002 Recirculation Flow Control											04. 47	Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	4.2	1
56	204000 RWCU							0 6					Ability to predict and/or monitor changes in parameters associated with operating the RWCU controls including: System temperature	2.8	1
	214000 RPIS														0
	215001 Traversing In-core Probe														0
	215002 RBM														0
	216000 Nuclear Boiler Inst.														0
	219000 RHR/LPCI: Torus/Pool Cooling Mode														0
	223001 Primary CTMT and Aux.														0
	226001 RHR/LPCI: CTMT Spray Mode														0
	230000 RHR/LPCI: Torus/Pool Spray Mode														0
57	233000 Fuel Pool Cooling/Cleanup								1 1				Ability to (a) predict the impacts of the following on the Fuel Pool Cooling/Cleanup; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Fuel pool gate seal high flow	2.9	1
58	234000 Fuel Handling Equipment								0 2				Ability to monitor automatic operations of the Fuel Handling Equipment including: Interlock operation	3.1	1
	239001 Main and Reheat Steam														0
	239003 MSIV Leakage Control														0
	241000 Reactor/Turbine Pressure Regulator														0
	245000 Main Turbine Gen. / Aux.														0
59	256000 Reactor Condensate									0 5			Ability to manually operate and/or monitor in the control room: System flow	3.1	1
60	259001 Reactor Feedwater				0 2								Knowledge of the operational implications of the following concepts as they apply to Reactor Feedwater: Water hammer	2.5	1
	268000 Radwaste														0
	271000 Offgas														0
61	272000 Radiation Monitoring		0 1										Knowledge of electrical power supplies to the following: Main steamline radiation monitors	2.5	1
	286000 Fire Protection														0
62	288000 Plant Ventilation				0 3								Knowledge of the operational implications of the following concepts as they apply to Plant Ventilation : Temperature control	2.5	1
63	290001 Secondary CTMT			0 1									Knowledge of Secondary CTMT design feature(s) and/or interlocks which provide for the following: Personnel access without breaching secondary containment: Plant-System	3.5	1
64	290003 Control Room HVAC	0 1											Knowledge of the physical connections and/or cause-effect relationships between Control Room HVAC and the following: Radiation monitors	3.4	1
65	290002 Reactor Vessel Internals					2 0							Knowledge of the effect that a loss or malfunction of the following will have on the Reactor Vessel Internals: Main steam system	2.9	1
K/A Category Totals:		1	1	1	1	2	1	1	1	1	1	1	Group Point Total:		12



ES-401		BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (SRO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
76	295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4						04. 08	Knowledge of how abnormal operating procedures are used in conjunction with EOPs.	4.5	1
	295003 Partial or Complete Loss of AC / 6									0
	295004 Partial or Total Loss of DC Pwr / 6									0
77	295005 Main Turbine Generator Trip / 3						04. 50	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	4.0	1
	295006 SCRAM / 1									0
	295016 Control Room Abandonment / 7									0
78	295018 Partial or Total Loss of CCW / 8					0 1		Ability to determine and/or interpret the following as they apply to Partial or Total Loss of CCW: Component temperatures	3.4	1
79	295019 Partial or Total Loss of Inst. Air / 8					0 2		Ability to determine and/or interpret the following as they apply to Partial or Total Loss of Inst. Air: Status of safety-related instrument air system loads (see AK2.1-AK2.19)	3.7	1
	295021 Loss of Shutdown Cooling / 4									0
	295023 Refueling Acc / 8									0
	295024 High Drywell Pressure / 5									0
80	295025 High Reactor Pressure / 3						04. 11	Knowledge of abnormal condition procedures.	4.2	1
	295026 Suppression Pool High Water Temp. / 5									0
N/A	295027 High Containment Temperature / 5									0
	295028 High Drywell Temperature / 5									0
	295030 Low Suppression Pool Wtr Lvl / 5									0
	295031 Reactor Low Water Level / 2									0
81	295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1					0 6		Ability to determine and/or interpret the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown: Reactor pressure	4.1	1
82	295038 High Off-site Release Rate / 9					0 4		Ability to determine and/or interpret the following as they apply to High Off-site Release Rate: Source of off-site release	4.5	1
	600000 Plant Fire On Site / 8									0
	700000 Generator Voltage and Electric Grid Disturbances / 6									0
K/A Category Totals:		0	0	0	0	4	3	Group Point Total:		7



ES-401		BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (SRO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
	295002 Loss of Main Condenser Vac / 3									0
	295007 High Reactor Pressure / 3									0
	295008 High Reactor Water Level / 2									0
	295009 Low Reactor Water Level / 2									0
83	295010 High Drywell Pressure / 5						04. 46	Ability to verify that the alarms are consistent with the plant conditions.	4.2	1
N/A	295011 High Containment Temp / 5									0
84	295012 High Drywell Temperature / 5					0 1		Ability to determine and/or interpret the following as they apply to High Drywell Temperature: Drywell temperature	3.9	1
	295013 High Suppression Pool Temp. / 5									0
	295014 Inadvertent Reactivity Addition / 1									0
	295015 Incomplete SCRAM / 1									0
	295017 High Off-site Release Rate / 9									0
	295020 Inadvertent Cont. Isolation / 5 & 7									0
	295022 Loss of CRD Pumps / 1									0
	295029 High Suppression Pool Wtr Lvl / 5									0
	295032 High Secondary Containment Area Temperature / 5									0
	295033 High Secondary Containment Area Radiation Levels / 9									0
	295034 Secondary Containment Ventilation High Radiation / 9									0
	295035 Secondary Containment High Differential Pressure / 5									0
85	295036 Secondary Containment High Sump/Area Water Level / 5						04. 30	Knowledge of events related to system operation/status that must be reported to internal organizations or external agencies, such as the State, the NRC, or the transmission system operator.	4.1	1
	500000 High CTMT Hydrogen Conc. / 5									0
K/A Category Totals:		0	0	0	0	1	2	Group Point Total:		3



ES-401		BWR Examination Outline												Form ES-401-1	
Plant Systems - Tier 2/Group 1 (SRO)															
Q#	System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
86	203000 RHR/LPCI: Injection											01. 32	Ability to explain and apply system limits and precautions.	4.0	1
88	205000 Shutdown Cooling Mode											02. 25	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.	4.2	1
N/A	206000 HPCI														0
N/A	207000 Isolation (Emergency) Condenser														0
87	209001 LPCS								0 5				Ability to (a) predict the impacts of the following on the LPCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Core spray line break	3.6	1
	209002 HPCS														0
	211000 SLC														0
	212000 RPS														0
	215003 IRM														0
	215004 Source Range Monitor														0
	215005 APRM / LPRM														0
89	217000 RCIC								1 0				Ability to (a) predict the impacts of the following on the RCIC; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Turbine control system failures	3.1	1
90	218000 ADS											02. 37	Ability to determine operability and/or availability of safety related equipment.	4.6	1
	223002 PCIS/Nuclear Steam Supply Shutoff														0
	239002 SRVs														0
	259002 Reactor Water Level Control														0
	261000 SGTS														0
	262001 AC Electrical Distribution														0
	262002 UPS (AC/DC)														0
	263000 DC Electrical Distribution														0
	264000 EDGs														0
	300000 Instrument Air														0
	400000 Component Cooling Water														0
K/A Category Totals:		0	0	0	0	0	0	0	2	0	0	3	Group Point Total:		5



ES-401		BWR Examination Outline												Form ES-401-1	
		Plant Systems - Tier 2/Group 2 (SRO)													
Q#	System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
	201001 CRD Hydraulic														0
	201002 RMCS														0
	201003 Control Rod and Drive Mechanism														0
	201004 RSCS														0
	201005 RCIS														0
	201006 RWM														0
	202001 Recirculation														0
	202002 Recirculation Flow Control														0
	204000 RWCU														0
	214000 RPIS														0
	215001 Traversing In-core Probe														0
	215002 RBM														0
91	216000 Nuclear Boiler Inst.											02. 40	Ability to apply Technical Specifications for a system.	4.7	1
	219000 RHR/LPCI: Torus/Pool Cooling Mode														0
	223001 Primary CTMT and Aux.														0
	226001 RHR/LPCI: CTMT Spray Mode														0
	230000 RHR/LPCI: Torus/Pool Spray Mode														0
	233000 Fuel Pool Cooling/Cleanup														0
	234000 Fuel Handling Equipment														0
	239001 Main and Reheat Steam														0
	239003 MSIV Leakage Control														0
	241000 Reactor/Turbine Pressure Regulator														0
	245000 Main Turbine Gen. / Aux.														0
	256000 Reactor Condensate														0
	259001 Reactor Feedwater														0
	268000 Radwaste														0
92	271000 Offgas								0 8				Ability to (a) predict the impacts of the following on the Orgas; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A.C. distribution	2.7	1
	272000 Radiation Monitoring														0
93	286000 Fire Protection											01. 25	Ability to interpret reference materials, such as graphs, curves, tables, etc.	4.2	1
	288000 Plant Ventilation														0
	290001 Secondary CTMT														0
	290003 Control Room HVAC														0
	290002 Reactor Vessel Internals														0
K/A Category Totals:		0	0	0	0	0	0	0	1	0	0	2	Group Point Total:		3



Facility Name: LaSalle Date of Exam: 10/20/2014							
Q#	Category	K/A #	Topic	RO		SRO-Only	
				IR	#	IR	#
94	1. Conduct of Operations	2.1. 35	Knowledge of the fuel-handling responsibilities of SROs.	2.2		3.9	1
95		2.1. 42	Knowledge of new and spent fuel movement procedures.	2.5		3.4	1
66		2.1. 34	Knowledge of primary and secondary plant chemistry limits.	2.7	1	3.5	
67		2.1. 29	Knowledge of how to conduct system lineups, such as valves, breakers, switches, etc.	4.1	1	4.0	
68		2.1. 30	Ability to locate and operate components, including local controls.	4.4	1	4.0	
		2.1.					
		Subtotal			3		2
96	2. Equipment Control	2.2. 21	Knowledge of pre- and post-maintenance operability requirements.	2.9		4.1	1
97		2.2. 35	Ability to determine Technical Specification Mode of Operation.	3.6		4.5	1
69		2.2. 13	Knowledge of tagging and clearance procedures.	4.1	1	4.3	
70		2.2. 38	Knowledge of conditions and limitations in the facility license.	3.6	1	4.5	
71		2.2. 01	Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.	4.5	1	4.4	
		2.2.					
		Subtotal			3		2
98	3. Radiation Control	2.3. 11	Ability to control radiation releases.	3.8		4.3	1
72		2.3. 14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.	3.4	1	3.8	
73		2.3. 05	Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	2.9	1	2.9	
		2.3.					
		2.3.					
		2.3.					
		Subtotal			2		1
99	4. Emergency Procedures / Plan	2.4. 29	Knowledge of the emergency plan.	3.1		4.4	1
100		2.4. 04	Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures.	4.5		4.7	1
74		2.4. 45	Ability to prioritize and interpret the significance of each annunciator or alarm.	4.1	1	4.3	
75		2.4. 27	Knowledge of "fire in the plant" procedures.	3.4	1	3.9	
		2.4.					
		2.4.					
		Subtotal			2		2
Tier 3 Point Total					10		7



**Appendix D**

**Scenario Outline**

**Form ES-D-1**

Facility: LaSalle Scenario No.: NRC Scenario 13-1-1 Op-Test No.: 2014301  
Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_

Initial Conditions: 11% power in RUN prior to synchronizing the Main Generator

Turnover: Drywell Inerting just Completed. Perform LOP-CM-02 to confirm Drywell O2 reading

Event No.	Malf. No.	Event Type*	Event Description
1	None	BOP N	Perform LOP-CM-02 to confirm Drywell O2 reading
2	None	ATC R	Withdraw control rods to raise power.
3	mrd027 mrd284	ATC C	CRD Pump degrades and FCV fails to Manual. Swap CRD Pumps and adjust CRD Flow
4	mrm021	SRO TS	A Fuel Pool Rad monitor fails inoperable
5	mms007 k5h09wl6	BOP C	EHC Leak, swap pumps
6	ko430w5b	ATC I	D APRM fails inoperable
7	r0742	SRO TS	Loss of one Squib valve continuity indication
8	k5h03jc1	BOP C	Steam seal PCV Failure
9	mrc034	Crew M	LOCA
10	mee041 mes032	Crew M	Loss of high pressure injection due to trip of the SAT and failure of the Div 3 DG Output breaker. When RPV water level reaches TAF, the crew will perform LGA-004 and then restore RPV water level

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

ES-301-4 Quantitative attributes:

Total Malfunctions (5-8): **8**  
Malfunction(s) after EOP (1-2): **2**  
Abnormal Events (2-4): **E6 & E8**  
Major Transient(s) /E-Plan entry (1-2): **E9**  
EOPs (1-2): **2**  
EOP Contingencies (0-2): **2** (ALC and BD)  
Critical Tasks (2-3): **3**

ES-301-5 Quantitative attributes:

BOP Normal: **E1**  
ATC Reactivity (1 per set): **E2**  
BOP I/C (4 / set): **E5 & E8**  
ATC I/C (4 / set): **E3 & E6**  
SRO-I I/C (4 / set inc 2 as ATC): **E3, 5, 6, & 8**  
SRO Tech Spec (2 per set): **E4 & E7**  
ALL Major Transients (2 per set): **E9**

**APPROXIMATE SCENARIO RUN TIME**

90 Minutes

**Appendix D**

**Scenario Outline**

**Form ES-D-1**

Facility: LaSalle Scenario No.: NRC Scenario 13-1-2 Op-Test No.: 2014301  
Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_

Initial Conditions: At rated power, OPRMs inoperable

Turnover: Perform LOS-LP-Q1, LPCS System In-service Test

Event No.	Malf. No.	Event Type*	Event Description
1	None	BOP N	Start LPCS test, LOS-LP-Q1, to the point that walkdowns are being performed.
2	set zhd023=0	ATC R	Emergency power reduction for loss of Feedwater heating
3	mnb078	BOP / SRO I TS	HPCS inadvertent initiation
4	mrd082	ATC / SRO C TS	Rod 34-19 Drift in
5	dcov1331	BOP C	Loss of Bus 133 with immediate action to start the standby RBCCW pump
6	iarrviba r0591/r0593	ATC C	RR Pump vibes necessitating a manual trip
7	mrd277 mrd278	Crew M	The crew will recognize operation in Region 1 of the Power/Flow Map. When they respond by scrambling the reactor, a hydraulic (high power) ATWS will be identified. Level power control will be performed until all controls rods can be inserted.
8	iasctrpa/b	Crew M	The first SBLC pump will trip after being started. The alternate pump can be started without further problems

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

ES-301-4 Quantitative attributes:  
Total Malfunctions (5-8): **7**  
Malfunction(s) after EOP (1-2): **1**  
Abnormal Events (2-4): **3**  
Major Transient(s) /E-Plan entry (1-2): **1**  
EOPs (1-2): LGA-001 & 10 2  
EOP Contingencies (0-2): **1**  
Critical Tasks (2-3): **3**

ES-301-5 Quantitative attributes:  
BOP Normal: **E1**  
ATC Reactivity (1 per set): **E2**  
BOP I/C (4 / set): **E3 & E5**  
ATC I/C (4 / set): **E4 & E6**  
SRO-I I/C (4 / set inc 2 as ATC): **E3, 4, 5, & 6**  
SRO Tech Spec (2 per set): **E3 & E4**  
ALL Major Transients (2 per set): **E7**

**APPROXIMATE SCENARIO RUN TIME**

90 Minutes

**Appendix D**

**Scenario Outline**

**Form ES-D-1**

Facility: LaSalle Scenario No.: NRC Scenario 13-1-3 Op-Test No.: 2014301  
Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_

Initial Conditions: At 59% power, Shutdown in progress per LGP 2-1. Continue Inserting control rods to achieve a 61% FCL and take the MSR Second stage Reheat out of service.

Turnover: 1C VT Exhaust Fan Out of Service due to high vibration

Event No.	Malf. No.	Event Type*	Event Description
1	None	ATC R	Control Rod insertion for shutdown
2	mrd199	ATC C	Stuck control rod 06-23 requires a higher drive water DP to insert
3	None	BOP N	Secure steam to MSR 2 <sup>nd</sup> stage reheat per LOP-TG-06
4	k5609jpz	BOP C	Steam Packing Exhauster blower trip
5	mrm039	SRO TS	VC Rad Monitor failure
6	k7d15wpg	BOP C	Loss of the A Turbine Bldg. Exhaust Fan
7	mrc039 k2k08pxi	ATC / SRO I TS	1A Reactor Recirculation FCV controller fails open and HPU Trip button fails. (ABN)
8	set vmmsf63r set vtmsf08r mes019	Crew M	Unisolable steam leak in RCIC
9	g1h31g1w g1h32g1w mes 9, 10, & 14	Crew M	When a 2 <sup>nd</sup> area approaches a Max Safe value, manual ADS will be performed but 3 ADS SRVs fail to open

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

**ES-301-4 Quantitative attributes:**

Total Malfunctions (5-8): **7**  
Malfunction(s) after EOP (1-2): **2**  
Abnormal Events (2-4): **2**  
Major Transient(s) /E-Plan entry (1-2): **E8**  
EOPs (1-2): **2** (LGA-002 and 001)  
EOP Contingencies (0-2): **1**  
Critical Tasks (2-3): **3**

**ES-301-5 Quantitative attributes:**

BOP Normal: **E3**  
ATC Reactivity (1 per set): **E1**  
BOP I/C (4 / set): **E4 & E6**  
ATC I/C (4 / set): **E2 & E7**  
SRO-I I/C (4 / set inc 2 as ATC): **E2, 4, 6, & 7**  
SRO Tech Spec (2 per set): **E5 & E7**  
ALL Major Transients (2 per set): **E8**

**APPROXIMATE SCENARIO RUN TIME**

90 Minutes