

**OUTLINE SUBMITTAL FOR THE
2008 AUGUST LASALLE INITIAL EXAMINATION**

10 CFR 55.40

RA08-053

August 11, 2008

United States Nuclear Regulatory Commission
Attention: NRC Region III Administrator
2443 Warrenville Rd.
Suite 210
Lisle, IL 60532-4352

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373/50-374

Subject: Submittal of Final Integrated Initial Operator Licensing Examination
Materials

Enclosed are the final examination materials that LaSalle County Station is submitting in support of the Initial License Examination scheduled for August 18 through August 29, 2008 at LaSalle County Station.

This submittal includes the Senior Reactor Operator and Reactor Operator Written Examinations, Job Performance Measures, and Integrated Plant Operation Scenario Guides.

These examination materials have been developed in accordance with NUREG – 1021, Operator Licensing Examination Standards,” Revision 9, Supplement 1. Please note that reference materials are attached to selected examination questions or items as directed by the Chief Examiner.

Some minor modifications have been made to the examination materials. These changes improved examination quality and are in compliance with NUREG –1021, Revision 9, Supplement 1.

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In accordance with NUREG -1021, Revision 9, Supplement 1, Section ES-201, "Initial Operator Licensing Examination Process," please ensure that these materials are withheld from public disclosure until after the examinations are complete.

Should you have any questions concerning this letter, please contact Mr. Terrence Simpkin, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,

A handwritten signature in purple ink, appearing to read "Daniel J. Enright".

Daniel J. Enright
Site-Vice President
LaSalle County Station

Enclosures: (Hand delivered to Bruce Palagi, Chief Examiner,
NRC Region III)

RO/SRO Composite Examination with references attached
Control Room Systems and Facility Walk-Through Job Performance Measures
Administrative Topic Job Performance Measures
Integrated Plant Operation Scenario Guides
Completed Checklists:

- Examination Security Agreements (Form ES-201-3)
- Administrative Topics Outline (Form ES-301-1)
- Control Room / In-Plant Systems Outline (Form ES-301-2)
- Operating Test Quality Checklist (Form ES-301-3)
- Simulator Scenario Quality Checklist (Form ES-301-4)
- Transient and Event Checklist (Form ES-301-5)
- Competencies Checklist (Form ES-301-6)
- BWR Examination Outline (Form ES-401-1)
- Generic Knowledge and Abilities Outline (Tier 3) (Form ES-401-3)
- Record of Rejected K/As (Form ES-401-4)
- Written Exam Quality Checklist (Form ES-401-6)

cc: Chief, NRC Operator Licensing Branch (w/o enclosures)
Senior Resident Inspector - LaSalle County Station (w/o enclosures)

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bcc: (without enclosures)
LaSalle County Station Project Manager, NRR
Site Vice President – LaSalle County Station
Regulatory Assurance Manager – LaSalle County Station
Director, Licensing and Regulatory Services
Manager, Licensing – LaSalle County Station
Nuclear Licensing Administrator – LaSalle County Station
Exelon Document Control Desk Licensing (Hard Copy)
Exelon Document Control Desk Licensing (Electronic Copy)
Human Resources – LaSalle County Station
Training Manager – LaSalle County Station

Facility: LaSalle County Station		Date of Examination: 08/18/2008		
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.	ME	BP	BP
	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.	ME	BP	BP
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	ME	BP	BP
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	ME	BP	BP
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.	ME	BP	BP
	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.	ME	BP	BP
	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.	ME	BP	BP
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.	ME	BP	BP
	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 ✓	ME	BP	BP
	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.	ME	BP	BP
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.	ME	BP	BP
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	ME	BP	BP
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	ME	BP	BP
	d. Check for duplication and overlap among exam sections.	ME	BP	BP
	e. Check the entire exam for balance of coverage.	ME	BP	BP
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	ME	BP	BP
a. Author <u>Michael A. Entwistle</u> b. Facility Reviewer (*) <u>Dennis Todd Granlund</u> c. NRC Chief Examiner (#) <u>Bruce Palagi</u> d. NRC Supervisor <u>Hiramson Peterson</u>		Printed Name/Signature <u>Michael A. Entwistle</u> <u>Dennis Todd Granlund</u> <u>Bruce Palagi</u> <u>Hiramson Peterson</u>		Date <u>5/2/08</u> <u>5/2/08</u> <u>5/9/08</u> <u>7/14/08</u>
Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines				

Facility: <u>LaSalle County Station</u>		Date of Examination: <u>08/18/2008</u>	
Examination Level: <u>RO</u> <input checked="" type="checkbox"/> <u>SRO</u> <input type="checkbox"/>		Operating Test Number: <u>Docket # 05000373</u>	
Administrative Topic (See Note)	Type Code*	Describe activity to be performed	
(1) Conduct of Operations 2.1.34 2.7/3.5	N,R	Reactor Water Chemistry Action Levels Determine actions required to be taken when reactor coolant activity is identified to be out of specification (high) while in start-up, and remains out of spec for greater than 24 hours.	
(2) Conduct of Operations 2.1.19 3.9/3.8	N,S	LTS-1100-4 Scram Time Report Utilize the process computer to identify control rod positions for control rods that are NOT indicating "00" on the RWM following a scram.	
(3) Equipment Control 2.2.41 2.9/3.1	D,P,R	Determine Isolation Points for C/O, including valves and breaker for Div. 2 WLP. Independently verify the mechanical and electrical isolation points for an equipment out of service.	
(4) Radiation Control 2.3.5 2.9/2.6	N,S	SPDS Radiation Release Box in Alarm Identify the cause of the SPDS Radiation Release Box alarming in RED and determine if the alarm is valid.	
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.			
* Type Codes & Criteria: <div style="margin-left: 20px;"> (C)ontrol room (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1; randomly selected) Class(R)oom (S)imulator </div>			

Facility: LaSalle County StationDate of Examination: 08/18/2008Examination Level: RO ☐ SRO ☒Operating Test Number: Docket # 05000373

Administrative Topic (See Note)	Type Code*	Describe activity to be performed
(1) Conduct of Operations 2.1.34 2.7/3.5	N,R	Reactor Water Chemistry Action Levels Determine actions required to be taken when reactor coolant activity is identified to be out of specification (high) while in start-up, and remains out of spec for greater than 24 hours.
(2) Conduct of Operations 2.1.19 3.9/3.8	N,S	LTS-1100-4 Scram Time Report Utilize the process computer to identify control rod positions for control rods that are NOT indicating "00" on the RWM following a scram.
(3) Equipment Control 2.2.41 2.9/3.1	D,P,R	Determine Isolation Points for C/O, including valves and breaker for Div. 2 WLP. Independently verify the mechanical and electrical isolation points for an equipment out of service.
(4) Radiation Control 2.3.5 2.9/2.6	N,S	SPDS Radiation Release Box in Alarm Determine actions required to be taken as a result of the SPDS Radiation Release Box alarming in RED.
(5) Emergency Procedures / Plan 2.4.30 2.7/4.1	D,R	Determine Notification Requirements for a Scram Identify if an event is reportable, and if so, identify the most limiting notification time requirement.
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria: (C)ontrol room (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected) Class(R)oom (S)imulator		

Facility: LaSalle County StationDate of Examination: 08/18/08Exam Level: RO ☒ SRO-I ☐ SRO-U ☐Operating Test No.: 05000373**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 Recirculation / Upshift the RR Pumps IAW LOP-RR-05 (202001 A4.01)	D,P,S	1
b. High Pressure Core Spray / Initiate HPCS with Failure of the Manual Initiation Pushbutton (295031 EA1.04)	A,D,EN,P,S	2
c. Automatic Depressurization System / Initiate ADS per the Hard Card with a Failure of 3 SRVs to Open (218000 A2.04)	A,D,EN,S	3
d. Main T/G and Aux. Systems / Anticipate RPV Blowdown (245000 A4.07)	N,S	4
e. PCIS / Recover from a Group X Isolation (223002 A4.03)	D,E,EN,S	5
f. Reactor Protection System / Reset a Half Scram with a Blown Group Scram Fuse (212000 A2.19)	A,D,E,P,S	7
g. Fire Protection system / Starting Service Water Pumps to Maintain Fire Header Pressure (286000 A2.08)	E,S,N	8
h. Offgas System / Start-up of the Mechanical Vacuum Pump (271000 A2.03)	A,L,N,S	9

In-Plant Systems[@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. Emergency Generators / Emergency Start of the 0 D/G IAW LOA-DG- 201 via the K98 Relay (264000 A2.09)	A, D, E, R	6
j. Safety Relief Valves / Remove SRV Fuses to Close a Stuck Open SRV (239002 A2.03)	D, E	3
k. Line up the CRD System for Injection into the RPV (295031 EA1.10)	D, E, R	2

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

* Type Codes	Criteria for: <u>RO</u> <u>SRO-I</u> <u>SRO-U</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
(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: LaSalle County StationDate of Examination: 08/18/08Exam Level: RO ☐ SRO-I ☒ SRO-U ☐Operating Test No.: 05000373**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 Recirculation / Upshift the RR Pumps IAW LOP-RR-05 (202001 A4.01)	D,P,S	1
b. High Pressure Core Spray / Initiate HPCS with Failure of the Manual Initiation Pushbutton (295031 EA1.04)	A,D,EN,P,S	2
c. Not Applicable	N/A	N/A
d. Main T/G and Aux. Systems / Anticipate RPV Blowdown (245000 A4.07)	N,S	4
e. PCIS / Recover from a Group X Isolation (223002 A4.03)	D,E,EN,S	5
f. Reactor Protection System / Reset a Half Scram with a Blown Group Scram Fuse (212000 A2.19)	A,D,E,P,S	7
g. Fire Protection system / Starting Service Water Pumps to Maintain Fire Header Pressure (286000 A2.08)	E,S,N	8
h. Offgas System / Start-up of the Mechanical Vacuum Pump (271000 A2.03)	A,L,N,S	9

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

i. Emergency Generators / Emergency Start of the 0 D/G IAW LOA-DG- 201 via the K98 Relay (264000 A2.09)	A, D, E, R	6
j. Safety Relief Valves / Remove SRV Fuses to Close a Stuck Open SRV (239002 A2.03)	D, E	3
k. Line up the CRD System for Injection into the RPV (295031 EA1.10)	D, E, R	2

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

* Type Codes	Criteria for: <u>RO</u>	<u>SRO-I</u>	<u>SRO-U</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
(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			

EN - Engr Safety System

Facility: LaSalle County StationDate of Examination: 08/18/08Exam Level: RO ☐ SRO-I ☐ SRO-U ☒Operating Test No.: 05000373**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. Not Applicable	N/A	N/A
b. Not Applicable	N/A	N/A
c. Not Applicable	N/A	N/A
d. Main T/G and Aux. Systems / Anticipate RPV Blowdown (245000 A4.07)	N,S	4
e. PCIS / Recover from a Group X Isolation (223002 A4.03)	D,E,EN,S	5
f. Not Applicable	N/A	N/A
g. Not Applicable	N/A	N/A
h. Offgas System / Start-up of the Mechanical Vacuum Pump (271000 A2.03)	A,L,N,S	9

In-Plant Systems[@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. Emergency Generators / Emergency Start of the 0 D/G IAW LOA-DG-201 via the K98 Relay (264000 A2.09)	A, D, E, R	6
j. Not Applicable	N/A	N/A
k. Line up the CRD System for Injection into the RPV (295031 EA1.10)	D, E, R	2

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

* Type Codes	Criteria for: <u>RO</u>	<u>SRO-I</u>	<u>SRO-U</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
(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: LaSalle County Station			Date of Exam: 08/18/2008			Operating Test No.: 05000373											
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 <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX		1											1	1	1	0
	NOR					3								1	1	1	1
	I/C		5,6,8			2,4,6,11								7	4	4	2
	MAJ		7			8								2	2	2	1
	TS														0	2	2
RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX					1,7								2	1	1	0
	NOR			2										1	1	1	1
	I/C			3,4,8,9,10		5,7,9,10								9	4	4	2
	MAJ			7		8								2	2	2	1
	TS														0	2	2
RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX	1				1,7								3	1	1	0
	NOR	2												1	1	1	1
	I/C	3,4,5,6,8,9,10				5,7,9,10								11	4	4	2
	MAJ	7				8								2	2	2	1
	TS	2,3												2	0	2	2
RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX		1		1,7									3	1	1	0
	NOR				3									1	1	1	1
	I/C		5,6,8		2,4,5,6,7,9,10,11									11	4	4	2
	MAJ		7		8									2	2	2	1
	TS				2,4									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.

Facility: LaSalle County Station			Date of Exam: 8/18/2008			Operating Test No.: 05000373											
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				R	I	U
		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				
RO <input type="checkbox"/>	RX	1												1	1	1	0
SRO-I <input type="checkbox"/>	NOR	2												1	1	1	1
SRO-U <input type="checkbox"/>	I/C	3,4,5 6,8,9 10												7	4	4	2
<input checked="" type="checkbox"/>	MAJ	7												1	2	2	1
	TS	2,3												2	0	2	2
RO <input type="checkbox"/>	RX				1,7									2	1	1	0
SRO-I <input type="checkbox"/>	NOR				3									1	1	1	1
SRO-U <input type="checkbox"/>	I/C				2,4, 5,6, 7,9, 10, 11									8	4	4	2
<input checked="" type="checkbox"/>	MAJ				8									1	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
SRO-U <input type="checkbox"/>	I/C														4	4	2
<input type="checkbox"/>	MAJ														2	2	1
	TS														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
<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 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: LaSalle County Station			Date of Exam: 8/18/2008			Operating Test No.:05000373											
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 checked="" type="checkbox"/>	RX							1						1	1	1	0
SRO-I <input type="checkbox"/>	NOR														1	1	1
SRO-U <input type="checkbox"/>	I/C							4,5 9						3	4	4	2
	MAJ							7						1	2	2	1
	TS														0	2	2
RO <input checked="" type="checkbox"/>	RX														1	1	0
SRO-I <input type="checkbox"/>	NOR								2					1	1	1	1
SRO-U <input type="checkbox"/>	I/C								3,6					2	4	4	2
	MAJ								7,8					2	2	2	1
	TS														0	2	2
RO <input type="checkbox"/>	RX							1						1	1	1	0
SRO-I <input type="checkbox"/>	NOR							2						1	1	1	1
SRO-U <input checked="" type="checkbox"/>	I/C							3,4,5 6,9						5	4	4	2
	MAJ							7,8						2	2	2	1
	TS							3,4						2	0	2	2
RO <input type="checkbox"/>	RX							1						1	1	1	0
SRO-I <input type="checkbox"/>	NOR							2						1	1	1	1
SRO-U <input type="checkbox"/>	I/C							3,4,5 6,9						5	4	4	2
	MAJ							7,8						2	2	2	1
	TS							3,4						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.

Facility Name: LaSalle County Station														Date of Exam: 08/18/2008				
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	3	N/A			3	3	N/A			4	20	3	4	7	
	2	1	1	1				2	1				1	7	1	2	3	
	Tier Totals	4	5	4				5	4				5	27	4	6	10	
2. Plant Systems	1	2	2	2	3	2	2	2	3	2	3	3	26	3	2	5		
	2	1	1	2	1	1	1	1	1	1	1	1	12	0	2	3		
	Tier Totals	3	3	4	4	3	3	3	4	3	4	4	38	5	3	8		
3. Generic Knowledge and Abilities Categories					1		2		3		4		10	1	2	3	4	7
					3		2		3		2			1	2	2	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 ± 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.

	ES-401	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	#
48	295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4				0 5			Recirculation flow control system	3.3	1
50	295003 Partial or Complete Loss of AC / 6				0 3			Systems necessary to assure safe plant shutdown	4.4	1
45	295004 Partial or Total Loss of DC Pwr / 6			0 3				Reactor SCRAM Plant-Specific	3.1	1
58	295005 Main Turbine Generator Trip / 3		0 2					Feedwater temperature	2.9	1
39	295006 SCRAM / 1	0 2						Shutdown margin	3.4	1
52	295016 Control Room Abandonment / 7					0 2		Reactor water level	4.2	1
55	295018 Partial or Total Loss of CCW / 8						04. 08	Knowledge of how abnormal operating procedures are used in conjunction with EOPs	3.8	1
46	295019 Partial or Total Loss of Inst. Air / 8			0 1				Backup air system supply: Plant-Specific	3.3	1
51	295021 Loss of Shutdown Cooling / 4					0 2		RHR/shutdown cooling system flow	3.4	1
53	295023 Refueling Acc / 8					0 3		Airborne contamination levels	3.3	1
56	295024 High Drywell Pressure / 5						04. 01	Knowledge of EOP entry conditions and immediate action steps	4.6	1
40	295025 High Reactor Pressure / 3	0 1						Pressure effects on reactor power	3.9	1
57	295026 Suppression Pool High Water Temp. / 5						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
	295027 High Containment Temperature / 5									0
49	295028 High Drywell Temperature / 5				0 4			Drywell pressure	3.9	1
43	295030 Low Suppression Pool Wtr Lvl / 5		0 7					Downcomer/ horizontal vent submergence	3.5	1
41	295031 Reactor Low Water Level / 2	0 3						Water level effects on reactor power	3.7	1
47	295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1			0 4				Hot shutdown boron weight: Plant-Specific	3.2	1
54	295038 High Off-site Release Rate / 9						04. 03	Ability to identify post-accident instrumentation	3.7	1
42	600000 Plant Fire On Site / 8		0 1					Sensors, detectors and valves	2.6	1
44	700000 Generator Voltage and Electric Grid Disturbances / 6		0 5					Pumps	3.1	1
	K/A Category Totals:	3	4	3	3	3	4	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
62	295007 High Reactor Pressure / 3				0 3			RCIC: Plant-Specific	3.4	1
63	295008 High Reactor Water Level / 2					0 2		Steam flow/feedflow mismatch	3.4	1
59	295009 Low Reactor Water Level / 2	0 3						Jet pump net positive suction head: Not-BWR-1&2	2.7	1
	295010 High Drywell Pressure / 5									0
	295011 High Containment Temp / 5									0
	295012 High Drywell Temperature / 5									0
	295013 High Suppression Pool Temp. / 5									0
	295014 Inadvertent Reactivity Addition / 1									0
60	295015 Incomplete SCRAM / 1		0 5					Rod worth minimizer: Plant-Specific	2.6	1
	295017 High Off-site Release Rate / 9									0
	295020 Inadvertent Cont. Isolation / 5 & 7									0
64	295022 Loss of CRD Pumps / 1						04. 35	Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects.	3.8	1
65	295029 High Suppression Pool Wtr Lvl / 5				0 4			RCIC: Plant-Specific	3.4	1
	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
61	295035 Secondary Containment High Differential Pressure / 5			0 1				Blow-out panel operation: Plant-Specific	2.8	1
	295036 Secondary Containment High Sump/Area Water Level / 5									0
	500000 High CTMT Hydrogen Conc. / 5									0
K/A Category Totals:		1	1	1	2	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	#
11	203000 RHR/LPCI: Injection Mode						1 0						Component cooling water systems	3	1
5	205000 Shutdown Cooling			0 5									Fuel pool cooling assist: Plant-Specific	2.6	1
	206000 HPCI												Not applicable to LaSalle		0
	207000 Isolation (Emergency) Condenser												207000, A1 02 was rejected and alternately selected 217000 A1 02 using sampling methodology as outlined in Attachment 1 of ES-401		0
14	209001 LPCS						0 4						Reactor pressure	3.7	1
4, 18	209002 HPCS		0 3							0 5			Initiation logic: BWR-5, 6; Reactor water level BWR-5, 6	2.8; 3.7	2
3	211000 SLC		0 2										Explosive valves	3.1	1
20	212000 RPS										1 6		Manually activate anticipated transient without SCRAM circuitry/RRCS: Plant-Specific	4.4	1
1	215003 IRM	0 2											Reactor manual control	3.6	1
12	215004 Source Range Monitor						0 4						Detectors	2.9	1
23	215005 APRM / LPRM										0 6		Verification of proper functioning/ operability	3.6	1
9, 13	217000 RCIC					0 1		0 2					Indications of pump cavitation : RCIC pressure	2.6; 3.3	2
17	218000 ADS									0 8			Reactor pressure	4.2	1
8	223002 PCIS/Nuclear Steam Supply Shutoff			0 6									Once initiated, system reset requires deliberate operator action	3.4	1
7, 24	239002 SRVs			0 2				0 4					Minimizes containment fatigue duty cycles resulting from relief valve cycling during decay-heat-dominant period late in an isolation transient (LLS logic): Plant-Specific : ADS actuation	3.4; 4.1	2
10, 26	259002 Reactor Water Level Control				0 3						04. 41		Water level measurement : Knowledge of the emergency action level thresholds and classifications	3.1; 2.9	2
19, 25	261000 SGTS			0 3						0 5			Moisture removal; Drywell to suppression chamber/torus differential pressure: Mark-I.II	2.5; 2.9	2
22	262001 AC Electrical Distribution										02. 03		Knowledge of the design, procedural, and operational differences between units	3.8	1
15	262002 UPS (AC/DC)							0 2					Over voltage	2.5	1
21	263000 DC Electrical Distribution										04. 04		Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures	4.5	1
2	264000 EDGs	0 6											Starting system	3.2	1
16	300000 Instrument Air							0 1					Air dryer and filter malfunctions	2.9	1
6	400000 Component Cooling Water			0 1									Loads cooled by CCWS	2.9	1
															0
K/A Category Totals:		2	2	2	3	2	2	2	3	2	3	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
35	201002 RMCS									0 1			Control rod block actuation	3.2	1
	201003 Control Rod and Drive Mechanism														0
	201004 RSCS														0
	201005 RCIS												201005 A3.01 was rejected and 201002 A3.01 was alternately selected using sampling methodology as outlined in Att. 1 of ES-401		0
33	201006 RWM							0 2					Status of control rod movement blocks; P-Spec(Not-BWR6)	3.4	1
38	202001 Recirculation			1 4									Primary containment integrity; Plant-Specific	3.5	1
37	202002 Recirculation Flow Control											01. 28	Knowledge of the purpose and function of major system components and controls.	4.1	1
	204000 RWCU														0
	214000 RPIS														0
	215001 Traversing In-core Probe														0
34	215002 RBM								0 5				RBM high or inoperable: BWR-3, 4, 5	3.2	1
31	216000 Nuclear Boiler Inst.					0 6							Rapid vessel depressurization effects on vessel level indications	3.4	1
	219000 RHR/LPCI: Torus/Pool Cooling Mode														0
30	223001 Primary CTMT and Aux.				0 2								Contains fission products after a LOCA	3.6	1
	226001 RHR/LPCI: CTMT Spray Mode														0
29	230000 RHR/LPCI: Torus/Pool Spray Mode			0 4									Suppression chamber air temperature	3.7	1
	233000 Fuel Pool Cooling/Cleanup														0
36	234000 Fuel Handling Equipment									0 1			Neutron monitoring system	3.7	1
27	239001 Main and Reheat Steam	2 6											Safety valves	3.7	1
	239003 MSIV Leakage Control														0
	241000 Reactor/Turbine Pressure Regulator														0
32	245000 Main Turbine Gen. / Aux.					0 6							Electrical distribution	3	1
28	256000 Reactor Condensate		0 1										System pumps	2.7	1
	259001 Reactor Feedwater														0
	268000 Radwaste														0
	271000 Offgas														0
	272000 Radiation Monitoring														0
	286000 Fire Protection														0
	288000 Plant Ventilation														0
	290001 Secondary CTMT														0
	290003 Control Room HVAC														0
	290002 Reactor Vessel Internals														0
K/A Category Totals:		1	1	2	1	1	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)										
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#	
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4									0	
295003 Partial or Complete Loss of AC / 6									0	
295004 Partial or Total Loss of DC Pwr / 6						04. 35	Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects.	4	1	
295005 Main Turbine Generator Trip / 3									0	
295006 SCRAM / 1					0 1		Reactor power	4.6	1	
295016 Control Room Abandonment / 7									0	
295018 Partial or Total Loss of CCW / 8						01. 23	Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.4	1	
295019 Partial or Total Loss of Inst. Air / 8						02. 22	Knowledge of limiting conditions for operations and safety limits	4.7	1	
295021 Loss of Shutdown Cooling / 4									0	
295023 Refueling Acc / 8									0	
295024 High Drywell Pressure / 5									0	
295025 High Reactor Pressure / 3									0	
295026 Suppression Pool High Water Temp. / 5									0	
295027 High Containment Temperature / 5									0	
295028 High Drywell Temperature / 5					0 4		Drywell pressure	4.2	1	
295030 Low Suppression Pool Wtr Lvl / 5					0 2		Suppression pool temperature	3.9	1	
295031 Reactor Low Water Level / 2									0	
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1									0	
295038 High Off-site Release Rate / 9									0	
600000 Plant Fire On Site / 8						02. 25	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.	4.2	1	
700000 Generator Voltage and Electric Grid Disturbances / 6									0	
K/A Category Totals:	0	0	0	0	3	4	Group Point Total:		7	

ES-401		BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (SRO)										
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	
295010 High Drywell Pressure / 5									0	
295011 High Containment Temp / 5									0	
295012 High Drywell Temperature / 5									0	
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						04. 34	Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects	4.1	1	
295036 Secondary Containment High Sump/Area Water Level / 5					0 2		Water level in the affected area	3.1	1	
500000 High CTMT Hydrogen Conc. / 5						01. 20	Ability to interpret and execute procedure steps	4.6	1	
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	#	
88	203000 RHR/LPCI: Injection												04. 45	Ability to prioritize and interpret the significance of each annunciator or alarm.	4.3	1
	205000 Shutdown Cooling Mode															0
	206000 HPCI															0
	207000 Isolation (Emergency) Condenser															0
	209001 LPCS															0
86	209002 HPCS								0 5					D.C. electrical failure: BWR-5, 6	2.9	1
	211000 SLC															0
	212000 RPS															0
	215003 IRM								0 7					Failed recorder	2.7	1
	215004 Source Range Monitor															0
	215005 APRM / LPRM															0
	217000 RCIC															0
	218000 ADS															0
	223002 PCIS/Nuclear Steam Supply Shutoff															0
	239002 SRVs															0
	259002 Reactor Water Level Control															0
87	261000 SGTS								0 7					A.C. electrical failure	2.8	1
	262001 AC Electrical Distribution															0
	262002 UPS (AC/DC)															0
	263000 DC Electrical Distribution															0
	264000 EDGs															0
	300000 Instrument Air															0
89	400000 Component Cooling Water												01. 25	Ability to interpret reference materials, such as graphs, curves, tables, etc.	4.2	1
																0
K/A Category Totals:		0	0	0	0	0	0	0	3	0	0	2	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	#
92	201001 CRD Hydraulic												02.42 Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	4.6	1
	201002 RMCS														0
	201003 Control Rod and Drive Mechanism														0
	201004 RSCS														0
	201005 RCIS														0
91	201006 RWM								0 8				Loss of reactor water level control input P-Spec(Not-BWR6)	3.3	1
	202001 Recirculation														0
	202002 Recirculation Flow Control														0
93	204000 RWCU								0 5				Valve openings	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
	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
	271000 Offgas														0
	272000 Radiation Monitoring														0
	286000 Fire Protection														0
	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	2	0	0	1	Group Point Total:		3

Facility Name: LaSalle County Station		Date of Exam: 08/18/2008					
Q#	Category	K/A #	Topic	RO		SRO-Only	
				IR	#	IR	#
94	1. Conduct of Operations	2.1. 05	Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.	0	0	3.9	1
		2.1.					
		2.1.					
66		2.1. 19	Ability to use plant computers to evaluate system or component status.	3.9	1	0	0
67		2.1. 44	Knowledge of RO duties in the control room during fuel handling such as responding to alarms from the fuel handling area, communication with the fuel storage facility, systems operated from the control room in support of fueling operations, and supporting	3.9	1	0	0
75		2.1. 41	Knowledge of the refueling process.	2.8	1	0	0
		Subtotal				3	
95	2. Equipment Control	2.2. 36	Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations.	0	0	4.2	1
98		2.2. 23	Ability to track Technical Specification limiting conditions for operations.	0	0	4.6	1
		2.2.					
		2.2.					
68		2.2. 17	Knowledge of the process for managing maintenance activities during power operations, such as risk assessments, work prioritization, and coordination with the transmission system operator.	2.6	1	0	0
69		2.2. 43	Knowledge of the process used to track inoperable alarms.	3	1	0	0
		Subtotal				2	
96	3. Radiation Control	2.3. 15	Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	0	0	3.1	1
99		2.3. 14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.	0	0	3.8	1
		2.3.					
70		2.3. 07	Ability to comply with radiation work permit requirements during normal or abnormal conditions.	3.5	1	0	0
71		2.3. 11	Ability to control radiation releases.	3.8	1	0	0
74		2.3. 14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.	3.4	1	0	0
		Subtotal				3	
97	4. Emergency Procedures / Plan	2.4. 08	Knowledge of how abnormal operating procedures are used in conjunction with EOPs.	0	0	4.5	1
100		2.4. 29	Knowledge of the emergency plan.	0	0	4.4	1
		2.4.					
		2.4.					
72		2.4. 21	Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.	4	1	0	0
73		2.4. 39	Knowledge of RO responsibilities in emergency plan implementation.	3.9	1	0	0
		Subtotal				2	
Tier 3 Point Total					10		7

Facility: LaSalle StationScenario No.: NRC 07-1-1Operating Test No. 05000373EvaluatorsOperatorsCrew Position**Initial Conditions: IC-51****Turnover:**

Unit 1 is currently at 95% reactor power with flow control line at 107%. Following completion of the turnover, the crew is to adjust RR flow to return to full power operation at a rate of 300 MWE per hour and in accordance with LGP 3-1 and LOP-RR-07. After the power ascension is complete, the crew is scheduled to perform LOS-RP-W1, Attachment 1A "Manual Scram Instrumentation".

Additional plant status items include:

- Unit 1 is in a Division 2 work week.
- 1B IN Compressor is OOS for lube oil change.
- 1C RHR OOS for motor inspection
- Online Safety level is green.
- Unit 2 is operating at 100% power.

Event No.	Malf. No.	Event Type*		Event Description
Preload	imf R1436 on imf MCA005			B IN Compress OFF (simulates OOS) Broken Division 1 containment monitoring instr. line.
1	None	R	RO, SRO	Power ascension to 100% power at 300 MWE/hour.
2	None	N	BOP, SRO	Perform LOS-RP-W1, Manual Scram Instrumentation.
3	iro k3k07pz7	C	BOP, SRO	Scram Pushbutton B2 fails during LOS-RP-W1. (Tech Spec)
4	CAEP	C	RO, SRO	Trip of running TDRFP seal injection pump with failure of standby pump to auto start.
5	R0563P	I	BOP, SRO	RCIC Drain Pot Alarm. (Tech Spec)
6	MAI003	C	BOP, SRO	Trip of the running Instrument Nitrogen (IN) compressor.
7	MCF072	I	RO, SRO	Output signal from the TDRFP A flow transmitter fails low.
8	MNB104	M	ALL	Major steam leak propagates inside the primary containment.
9	Preload	I	ALL	Failure of Div. 1 D/W pressure indication due to broken Division 1 containment monitoring instrument line.
10	Preload	I	ALL	Failure of Div.1 ECCS to initiate on high D/W pressure signal due to broken Division 1 containment monitoring instrument line.
11	Preload	I	ALL	Inability to start drywell sprays due to lack of a high D/W pressure signal due to broken Division 1 containment monitoring instrument line.

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

NARRATIVE SUMMARY

Event(s)	Description
1	After accepting the unit, the SRO will direct the RO to commence the power ascension to 100% power at 300 MWE/hour in accordance with LGP 3-1 and LOP-RR-07.
2, 3	(Tech Spec) The SRO will direct the BOP to complete LOS-RP-W1. The final scram pushbutton tested will NOT cause a ½ scram, requiring an entry into a Tech Spec LCO with a short duration timeclock.
4	After the crew has completed LOS-RP-W1, the operating TDRFP seal injection pump will trip and the standby pump will fail to auto start. The RO will be able to start the standby pump manually.
5	(Tech Spec) After the stand-by seal injection pump has been started, the RCIC drain pot alarm will annunciate. The BOP should take the required actions per LOR 1H13-P601-D502 and isolate the 1E51-F360 after two minutes.
6	When the crew has addressed the RCIC problem, the running Instrument Nitrogen (IN) compressor will trip. The BOP should acknowledge/announce the control room alarms and refer to the applicable alarm and abnormal procedures. The BOP should cross-tie IN with the Instrument Air (IA) system. An operator should be dispatched locally to investigate the IN issue.
7	Once the crew has cross-tied IA, the A TDRFP flow transmitter will fail, causing the A TDRFP min flow valve to open. The RO should verify the A TDRFP min flow M/A station is in manual and place the feed pump min flow in the closed position, as required for plant conditions.
8	After reactor water level is stabilized (or the reactor is manually scrammed), a major steam leak propagates inside the primary containment which results in a reactor scram and requires entry into the EOPs. Response to the scram is complicated by a broken Div. 1 containment monitoring instrument line caused by the malfunction preloaded during the initial set-up.
9, 10, and 11.	Following the major transient, the preloaded malfunction simulating a broken Div. 1 containment monitoring instrument line will cause the following to occur: <ul style="list-style-type: none"> • Failure of Division 1 drywell pressure indication • Failure of the automatic initiation of Division 1 ECCS and EDG • Inability to open both Division 1 drywell spray valves at the same time from the main control The diagnosis of the cause of these failures is not an immediate concern while performing the actions of the symptom-based LGAs. The operators must recognize the impact of these failures while performing the EOPs (e.g., using redundant instrumentation, manually initiating affected systems if needed).

Critical Tasks

1. Crew identifies failure of Division 1 ECCS to initiate and takes manual actions to initiate Division 1 systems as required.
2. Crew initiates Drywell Sprays before drywell pressure exceeds the limits of the Pressure Suppression Pressure curve.

Facility: <u>LaSalle Station</u>		Scenario No.: <u>NRC 07-1-2</u>		Operating Test No. 05000373	
<u>Evaluators</u>			<u>Operators</u>		<u>Crew Position</u>
_____			_____		_____
_____			_____		_____
_____			_____		_____
Initial Conditions: IC-51					
Turnover:					
Unit 1 is currently at 95% reactor power with flow control line at 107%. Following the turnover, the crew is to lower reactor power to 85%, at 300 MWE per hour, in accordance with LGP 3-1 and LOP-RR-07.					
After the power reduction is complete, the crew is scheduled to swap VR Supply and Exhaust Fans to balance run times on the fans.					
Additional plant status items include:					
<ul style="list-style-type: none"> • 1B EHC Pump is OOS • Online Safety level is green. • Unit 2 is operating at 100% power. 					
Event No.	Malf. No.	Event Type*	Event Description		
Preload	imf MRD042 imf MRD192 imf MRD029 imf MRD047 imf MRD040 imf MCF081		Rod 34-39 remains out to cause ATWS Rod 26-31 remains out to cause ATWS Rod 02-27 remains out to cause ATWS Rod 50-23 remains out to cause ATWS Rod 30-27 remains out to cause ATWS 1B TDRFP failure to trip		
1	N/A	R - RO, SRO	Power reduction to 85% power at 300 MWe/hour using RR.		
2	imf FPID1321	I - SRO	1B DG RM CO2 TRBL at the Unit 1 Main Fire Panel (1FP04JA) is received. Partial actuation and closure of fire dampers requires 1B DG to be declared inoperable. (Tech Spec)		
3	N/A	N - BOP, SRO	Swap VR Supply and Exhaust Fans per LOP-VR-01.		
4	ior g9d04g1g	I, SRO	Reactor Building dP degrades requiring entry into LOA-PC-101 to restore dP and T.S. 3.6.4.1 for loss of Secondary Containment. (Tech Spec)		
5	MRD027	I - RO, SRO	Running 1A CRD Pump degradation, swap to 1B CRD Pump.		
6	VHTM60AD	C - BOP, SRO	1A TDRFP Lube Oil Leak requires swap to MDRFP.		
7	MCF030	I, R - ALL	Heater String Isolation.		
8	MM5056	M - ALL	Turbine bearing vibes exceeds manual trip criteria		
9	MCF081	C - RO, SRO	1B TDRFP Failure to Trip.		
10	Preload	C - RO, SRO	5 Rod ATWS.		
11	MEH001 MMS007	C - BOP, SRO	Failure of 1A EHC Pp./EHC line rupture, loss of TBPVs.		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor Transient					

NARRATIVE SUMMARY

Event(s)	Description
1	The SRO will first direct a power reduction to 85% at 300 MWe/hr for load following, after the turnover is completed,.
2	During the power reduction, trouble alarm for 1B DG RM CO2 TRBL at the Unit 1 Main Fire Panel (1FP04JA) is received. An NLO will be dispatched to check out the problem and discover that a worker bumped the CO2 Fire Suppression cabinet in the U-1 DG Corridor while moving a gang box of tools. The event has resulted in several dampers going closed in the 1B DG Room, however a CO2 actuation did not occur. This will require the SRO to declare the 1B DG inoperable per T.S. 3.8.1.
3, 4	The SRO should also direct the BOP operator to swap both VR Supply and Exhaust Fans per LOP-VR-01. The fan swap will occur without incident, however reactor building differential pressure will slowly degrade requiring entry into T.S. 3.6.4.1 for loss of secondary containment and LOA-PC-101 to adjust flows in the VR system to restore the required Reactor Building differential pressure..
5	After restoring Reactor Building differential pressure and exiting the associated LCO, the 1A CRD Pump will degrade, requiring the RO to swap running CRD Pumps per LOP-RD-03.
6	Later, the 1A TDRFP will develop a lube oil leak requiring the S/U of the MDRFP and S/D of the 1A TDRFP. Power should be low enough to be within the capacity of the MDRFP and the 1B TDRFP.
7	The next event will be an isolation of the A LP Heater String. The crew should maintain plant parameters IAW LOA-HD-101, which will require the insertion of 6 of the 8 Cram rods to reduce reactor power to 70%.
8, 9, 10, and 11	When the crew has stabilized the plant following the heater string isolation, turbine vibrations will steadily increase (Event 8), requiring a scram. The 1B TDRFP will not trip (Event 9), requiring immediate actions per LOA-FW-101. A five (5) rod ATWS (Event 10) will occur and the 1A EHC Pump will trip due to a rupture in the EHC line (Event 11). The EHC failure will remove the ability to control Reactor pressure via the Turbine Bypass Valves.

Critical Tasks

1. With a reactor scram required and the reactor not shutdown, take action to reduce power by injecting boron and/or inserting control rods, to protect the primary containment.
2. During an ATWS, with reactor power less than 3%, maintain reactor water level between -150 inches and +59.5 inches using only preferred ATWS systems.

Facility: <u>LaSalle Station</u>		Scenario No.: <u>NRC 07-1-3</u>		Operating Test No. <u>07-01 ILT</u>	
<u>Evaluators</u>			<u>Operators:</u>		<u>Crew Position</u>
_____			_____		_____
_____			_____		_____
_____			_____		_____

Initial Conditions:

- Unit 1 startup is in progress IAW LGP-1-1, step E.4.5, Heatup/Pressurization.
- TLO Temperature controller in manual.
- 1B IN Compressor is OOS for lube oil change.
- Online Safety level is green.
- Unit 2 is operating at 100% power.

Turnover:

- Control rods are being withdrawn to raise Rx power for mode change to OC1.
- 1A RHR system is running for surveillance, LOS-RH-Q1 and is ready to be secured.
- Turbine shell warming is in progress.

Event No.	Malf. No.	Event Type*		Event Description
Preload	Imf mcf113			MDRFP Trip after scram
1	N/A	R	RO, SRO	Pull rods for reactor startup. LGP-1-1 in progress.
2	N/A	N	BOP, SRO	Secure 1A RHR from surveillance LOS-RH-Q1.
3	CAEP	I	BOP, SRO	1A RHR min flow valve 1E12-F064A fails to open. (Tech Spec)
4	MNI036	I	RO, SRO	IRM C fails upscale. This results in half-scram on RPS bus A. (Tech Spec)
5	CAEP	C	RO, SRO	Blown RPS fuse 1C71-F18C occurs during reset of half scram.
6	imf r-0624 CAEP imf MCN002	C	BOP, SRO	Lake Screen House Traveling Screen Trouble CW Pump Trip and associated indications Loss of condenser vacuum
7	imf MRD277 imf MRD278	M	ALL	Manual Scram/ATWS/Hydraulic lock of Scram Discharge Volume
8	CAEP	M	BOP, SRO	Small LOCA from 1B RR Pump seal failure.
9	imf MCF113	C	RO, SRO	Loss of MDRFP.

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

Narrative Summary

Event(s)	Description
1	After the crew has taken the shift, the SRO will direct the RO to continue with control rod withdrawal to raise reactor power for mode change to OC1.
2, 3	<p>The SRO will also direct the BOP to secure the 1A RHR system from its quarterly surveillance test. The BOP will shutdown the RHR loop in accordance with LOS-RH-Q1. (Event 2)</p> <p>The RHR minimum flow valve, 1E12-F064A, will fail to open due to a bad flow switch instrument while securing the RHR loop. The operator will be able to open the valve manually, but the flow instrument must be considered inoperable and appropriate tech spec actions taken. (Event 3)</p>
4, 5	<p>IRM C fails (inop trip) after the BOP operator has responded to the RHR min flow valve problem and the RO has withdrawn sufficient control rods to meet the reactivity change requirements. (Event 4) The IRM failure results in a half-scam on RPS bus A. The crew should respond in accordance with the abnormal operating procedures and will bypass the failed IRM and reset the half scram.</p> <p>When the RO resets the half scram, RPS fuse 1C71-F18C will blow. (Event 5) The crew will follow the abnormal procedure, re-insert the half scram, replace the fuse, and reset the half scram. The SRO should refer to tech specs for required actions related to the failure of IRM C.</p>
6	Once the crew has addressed the RPS problems, a Lake Screen House Traveling Screen Trouble alarm is received with a subsequent trip of one of the two running CW pumps. The attempt to start the stand-by CW pump will be unsuccessful. The SRO should direct the RO to scram the reactor when he has determined vacuum will not be recovered.
7, 8, 9	<p>When the RO attempts to scram the reactor, he/she should recognize that all rods did not insert and report this to the SRO. (Event 7)</p> <p>The RO should also initiate the alternate rod insertion (ARI) system. The SRO should enter the emergency operating procedures for a failure to scram and direct the RO to perform alternate rod insertion in accordance with LGA-NB-01. The SRO should also direct the BOP to start suppression pool cooling in anticipation of a loss of the main condenser. The success path is to perform method 4 of LGA-NB-01 to drain the bypass scram signals, reset the scram, drain the scram discharge volume, and then re-scram the reactor to insert the control rods.</p> <p>Plant control will be further complicated by a small LOCA in the Drywell from a failed 1B RR Pump seal (Event 8) and the loss of the MDRFP due to a lube oil leak. (Event 9)</p>

Critical Tasks

1. Crew initiates a manual scram before reactor pressure reaches the auto scram setpoint.
2. With ATWS conditions, crew injects boron and/or performs alternate rod insertion in accordance with the emergency operating procedures to shutdown the reactor.
3. Crew initiates suppression chamber and drywell sprays as directed by the EOP's.