

## **OUTLINE SUBMITTAL**

**FOR THE LASALLE INITIAL EXAMINATION - MAY 2003**

**OUTLINE:**

**OPERATING TEST**

**WRITTEN EXAMINATION**

Exelon Generation Company, LLC  
LaSalle County Station  
2601 North 21<sup>st</sup> Road  
Marseilles, IL 61341-9757

www.exeloncorp.com

January 21, 2003

10 CFR 55.40

United States Nuclear Regulatory Commission  
Attention: Region III Administrator  
801 Warrenville Road  
Lisle, IL 60532-4351

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

Subject: Submittal of Initial Operator Licensing Examination Outline


Enclosed are the examination outlines, supporting the Initial License Examination scheduled for May 19 through May 30, 2003, at LaSalle County Station.

This submittal includes all appropriate Examination Standard forms and outlines in accordance with NUREG-1021, "Operator Licensing Examination Standards," Revision 8, Supplement 1.

In accordance with NUREG -1021, Revision 8, 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. Glen Kaegi, Regulatory Assurance Manager, at (815) 415-2800. For questions concerning examination outlines, please contact Mr. Patrick Leheney at (815) 415-2534.

Respectfully,



George P. Barnes  
Site Vice President  
LaSalle County Station

January 21, 2003  
U.S. Nuclear Regulatory Commission  
Page 2

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

List of Suppressed Knowledge and Abilities Statements  
Examination Security Agreements (Form ES-201-3)  
Administrative Topics Outline (Form ES-301-1)  
Control Room Systems and Facility Walk-Through Test Outline (Form ES-301-2)  
BWR SRO Written Examination Outline (Forms ES-401-1 and ES-401-5)  
BWR RO Written Examination Outline (Forms ES-401-2 and ES-401-5)  
Operational Scenarios Outline (Form ES-D-1)  
Record of Rejected K/As (Form ES-401-10)

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

Facility: LaSalleDate of Examination: 5/19/03Examination Level (circle one): RO/ SROOperating Test Number: ILT 02-01

|     | Administrative Topic/Subject Description | Describe method of evaluation:<br>1. ONE Administrative JPM, OR<br>2. TWO Administrative Questions |
|-----|--|--|
| A.1 | Conduct of Operations                    | A.1.1<br>Verify Off-site Power Lineup<br>K/A 2.1.31 Importance 3.9/4.2                             |
|     |  |  |
|     | Conduct of Operations                    | A.1.2<br>Knowledge of Conduct of Operations Requirements<br>K/A 2.1.1 Importance 3.7/3.8           |
|     |  | NRC Active License Maintenance   |
| A.2 | Equipment Control                        | A.2.1<br>Ability to Track Limiting Conditions for Operations<br>K/A 2.2.23 Importance 2.6/3.8      |
|     |  | Determine T.S Short Duration Timeclock   |
| A.3 | Radiological Conditions                  | A.3.1<br>Ability to Control Rad Releases<br>K/A 2.3.11 Importance 2.7/3.2                          |
|     |  | Determine if Radwaste Discharge Tank Flowrates in Spec.  |
| A.4 | Emergency Plan                           | A.4.1<br>Reporting Emergencies<br>K/A 2.4.39 Importance 3.3/3.1                                    |
|     |  | Knowledge of the RO's responsibilities in emergency plan implementation                            |

Facility: LaSalleDate of Examination: 5/19/03Examination Level (circle one): RO / SROOperating Test Number: ILT 02-01

| Administrative Topic/Subject Description |                         | Describe method of evaluation:<br>1. ONE Administrative JPM, OR<br>2. TWO Administrative Questions  |
|--|-------------------------|---|
| A.1                                      | Conduct of Operations   | SA.1.1<br>Determine Reporting Requirements<br>K/A 2.1.14 Importance 2.5/3.3<br>75.02.00 During performance of tasks, apply the administrative requirements of OP-AA-101-102.  |
|  |                         |   |
|  | Conduct of Operations   | SA.1.2<br>Review and Determine if Jet Pp. Flow meets Required Flow<br>K/A 2.1.25 Importance 2.8/3.1<br>656.020 During performance of tasks, apply the administrative requirements of LOS-AA-S101.                                       |
|  |                         |   |
| A.2                                      | Equipment Control       | SA.2.1<br>Determine Allowable EOOS Combination<br>K/A 2.1.11 Importance 3.0/3.8<br>774.010 Given the proper procedure and a T.S. which requires a time clock for actions, identify and prepare the T.S. actions IAW station procedures. |
|  |                         |   |
| A.3                                      | Radiological Conditions | SA.3.1<br>Ability to Control Rad Releases<br>K/A 2.3.11 Importance 2.7/3.2<br>Determine if Radwaste Discharge Tank Flowrates in Spec.   |
|  |                         |   |
| A.4                                      | Emergency Plan          | SA.4.1<br>Perform Transfer of Command and Control to the TSC<br>K/A 2.4.38 Importance 2.2/4.0   |
|  |                         |   |

Facility: LaSalle

Date of Examination: 5/19/03

Exam Level (circle one): RO / SRO(I) / SRO(U)

Operating Test Number: ILT 02-01

## B.1 Control Room Systems

| System / JPM Title   | Type Code* | Safety Function             |
|--|------------|-----------------------------|
| a. B.1.a<br>Diesel Generator/LOS-DG-M3 with Loss of SAT  | DAS        | Electrical                  |
| b. B.1.b<br>Reactor Manual Control/Single Rod Insert During an ATWS  | DSL        | Reactivity Control          |
| c. B.1.c<br>Pri. Cont. Vent. And Purge/ Emergency vent the Pri. Cont. IAW LGA-VQ02                               | DS         | Cont. Integrity             |
| d. B.1.d<br>Nuclear Inst./ Bypass a Failed Local Power Range Monitor   | DS         | Inst.                       |
| e. B.1.e<br>Reactor Recirculation/RR Pump Trip on Downshift  | DAS        | Heat Removal from Core      |
| f. B.1.f<br>Fuel Pool Cooling and C/U/Lineup to refill the reactor vessel from Fuel Pool Emer. M/U IAW LGA-FC-01 | NSL        | Radioactivity Release       |
| g. B.1.g<br>Feedwater/TDRFP Surv. With inability to Trip   | NAS        | Reactor Water Level Control |

## B.2 Facility Walk-Through

|  |     |                             |
|--|-----|-----------------------------|
| a. B.2.a<br>Reactor Core Isolation Cooling/ Install Jumpers and Lift Leads for LGA-RI-02       | D   | Reactor Pressure Control    |
| b. B.2.b<br>Process Radiation Monitoring/ Perform the Local actions to S/U the Main Stack WRGM | DR  | Radioactivity Releases      |
| c. B.2.c<br>Feedwater Heating/Verification of LP Heater 13A Trip                               | ADR | Reactor Water Level Control |

\* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow Power, (R)CA

Facility: LaSalle\_\_\_\_\_

Date of Examination: 5/19/03Exam Level (circle one): RO / SRO(I) (SRO(U))Operating Test Number: ILT 02-01

## B.1 Control Room Systems

| System / JPM Title  | Type Code* | Safety Function             |
|---|------------|-----------------------------|
| B.1.e<br>RR Pump Trip on Downshift  | DAS        | Heat Removal from Core      |
| B.1.f<br>Lineup to refill the reactor vessel from Fuel Pool Emer. M/U IAW LGA-FC-01 | NSL        | Radioactivity Release       |
| B.1.g<br>TDRFP Surv. With inability to Trip   | NA         | Reactor Water Level Control |
|   |            |                             |
|   |            |                             |
|   |            |                             |
|   |            |                             |

## B.2 Facility Walk-Through

|    |   |    |                          |
|----|---|----|--------------------------|
| a. | B.2.a<br>Install Jumpers and Lift Leads for LGA-RI-02         | D  | Reactor Pressure Control |
| b. | B.2.b<br>Perform the Local actions to S/U the Main Stack WRGM | DR | Radioactivity Releases   |
|    |   |    |                          |

\* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow Power, (R)CA



Facility: LaSalle

Form ES-401-1

Exam Date: 05/29/2003

Exam Level: SRO

| Tier  | Group       | K/A Category Points |    |    |       |    |       |    |       |    |       |    | Point Total |
|---|-------------|---------------------|----|----|-------|----|-------|----|-------|----|-------|----|-------------|
|   |             | K1                  | K2 | K3 | K4    | K5 | K6    | A1 | A2    | A3 | A4    | G* |             |
| 1.<br>Emergency & Abnormal Plant Evolutions | 1           | 5                   | 4  | 4  |       |    |       | 5  | 4     |    |       | 4  | 26          |
|   | 2           | 3                   | 2  | 3  |       |    |       | 3  | 3     |    |       | 3  | 17          |
|   | Tier Totals | 8                   | 6  | 7  |       |    |       | 8  | 7     |    |       | 7  | 43          |
|   |             |                     |    |    |       |    |       |    |       |    |       |    |             |
| 2.<br>Plant Systems                         | 1           | 2                   | 2  | 2  | 2     | 2  | 2     | 2  | 2     | 2  | 1     | 4  | 23          |
|   | 2           | 1                   | 1  | 1  | 1     | 1  | 2     | 1  | 1     | 1  | 1     | 2  | 13          |
|   | 3           | 0                   | 0  | 1  | 0     | 1  | 0     | 0  | 1     | 0  | 0     | 1  | 4           |
|   | Tier Totals | 3                   | 3  | 4  | 3     | 4  | 4     | 3  | 4     | 3  | 2     | 7  | 40          |
| 3. Generic Knowledge And Abilities          |             |                     |    |    | Cat 1 |    | Cat 2 |    | Cat 3 |    | Cat 4 |    |             |
|   |             |                     |    |    | 4     |    | 4     |    | 4     |    | 5     |    | 17          |

- Note: 1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., 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 exam must total 100 points.
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category/tier.
- 6.\*The generic 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.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the SRO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

# BWR SR Examination Outline

Printed: 01/1/03

Facility: LaSalle

ES - 401

## Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1

Form ES-401-1

| E/APE # | E/APE Name / Safety Function               | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|--|----|----|----|----|----|---|---|------|--------|
| 295003  | Partial or Complete Loss of A.C. Power / 6 |    |    | X  |    |    |   | AK3.06 - Containment isolation  | 3.7  | 1      |
| 295003  | Partial or Complete Loss of A.C. Power / 6 |    |    |    |    |    | X | 2.1.28 - Knowledge of the purpose and function of major system components and controls. | 3.3  | 1      |
| 295006  | SCRAM / 1                                  |    |    |    |    | X  |   | AA2.03 - Reactor water level  | 4.2* | 1      |
| 295006  | SCRAM / 1                                  | X  |    |    |    |    |   | AK1.01 - Decay heat generation and removal.   | 3.9  | 1      |
| 295007  | High Reactor Pressure / 3                  | X  |    |    |    |    |   | AK1.02 - Decay heat generation  | 3.4  | 1      |
| 295007  | High Reactor Pressure / 3                  |    |    | X  |    |    |   | AK3.03 - RCIC operation: Plant-Specific   | 3.5  | 1      |
| 295010  | High Drywell Pressure / 5                  | X  |    |    |    |    |   | AK1.01 - Downcomer submergence: Mark-I&II   | 3.4  | 1      |
| 295013  | High Suppression Pool Temperature / 5      |    | X  |    |    |    |   | AK2.01 - Suppression pool cooling   | 3.7  | 1      |
| 295014  | Inadvertent Reactivity Addition / 1        |    | X  |    |    |    |   | AK2.05 - Neutron monitoring system  | 4.1* | 1      |
| 295015  | Incomplete SCRAM / 1                       |    |    | X  |    |    |   | AK3.01 - Bypassing rod insertion blocks   | 3.7  | 1      |
| 295015  | Incomplete SCRAM / 1                       |    |    |    | X  |    |   | AA1.02 - RPS  | 4.2* | 1      |
| 295016  | Control Room Abandonment / 7               |    |    |    |    | X  |   | AA2.04 - Suppression pool temperature   | 4.1  | 1      |
| 295016  | Control Room Abandonment / 7               |    |    |    | X  |    |   | AA1.05 - D.C. electrical distribution   | 2.9  | 1      |
| 295017  | High Off-Site Release Rate / 9             |    |    | X  |    |    |   | AK3.04 - Power reduction  | 3.8  | 1      |
| 295017  | High Off-Site Release Rate / 9             |    |    |    | X  |    |   | AA1.02 - Off-gas system   | 3.7  | 1      |

# BWR SR Examination Outline

Printed: 01/13

Facility: LaSalle

ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 Form ES-401-1

| E/APE # | E/APE Name / Safety Function  | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|---|----|----|----|----|----|---|---|------|--------|
| 295023  | Refueling Accidents / 8   |    | X  |    |    |    |   | AK2.02 - Fuel pool cooling and cleanup system   | 3.2  | 1      |
| 295024  | High Drywell Pressure / 5   |    |    |    |    |    | X | 2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures. | 4.3  | 1      |
| 295025  | High Reactor Pressure / 3   |    |    |    |    | X  |   | EA2.06 - Reactor water level  | 3.8  | 1      |
| 295026  | Suppression Pool High Water Temperature / 5                                   | X  |    |    |    |    |   | EK1.01 - Pump NPSH  | 3.4  | 1      |
| 295026  | Suppression Pool High Water Temperature / 5                                   |    | X  |    |    |    |   | EK2.02 - Suppression pool spray: Plant-Specific   | 3.8  | 1      |
| 295030  | Low Suppression Pool Water Level / 5  |    |    |    | X  |    |   | EA1.03 - HPCS: Plant-Specific   | 3.4  | 1      |
| 295031  | Reactor Low Water Level / 2   |    |    |    |    | X  |   | EA2.01 - Reactor water level  | 4.6* | 1      |
| 295037  | SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1 | X  |    |    |    |    |   | EK1.04 - Hot shutdown boron weight: Plant-Specific  | 3.6  | 1      |
| 295037  | SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1 |    |    |    | X  |    |   | EA1.03 - ARI/RPT/ATWS: Plant-Specific   | 4.1* | 1      |
| 295038  | High Off-Site Release Rate / 9  |    |    |    |    |    | X | 2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.   | 3.7  | 1      |
| 500000  | High Containment Hydrogen Concentration / 5                                   |    |    |    |    |    | X | 2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.   | 3.7  | 1      |

K/A Category Totals: 5 4 4 5 4 4

Group Point Total: 26

# BWR SR Examination Outline

Printed: 01/13

Facility: LaSalle

ES - 401

## Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2

Form ES-401-1

| E/APE # | E/APE Name / Safety Function                                 | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|--|----|----|----|----|----|---|--|------|--------|
| 295001  | Partial or Complete Loss of Forced Core Flow Circulation / 1 |    |    |    |    | X  |   | AA2.05 - Jet pump operability: Not-BWR-1&2   | 3.4  | 1      |
| 295001  | Partial or Complete Loss of Forced Core Flow Circulation / 1 |    |    |    |    |    | X | 2.4.6 - Knowledge symptom based EOP mitigation strategies.   | 4.0  | 1      |
| 295004  | Partial or Complete Loss of D.C. Power / 6                   |    |    | X  |    |    |   | AK3.02 - Ground isolation/fault determination  | 3.3  | 1      |
| 295005  | Main Turbine Generator Trip / 3                              | X  |    |    |    |    |   | AK1.03 - Pressure effects on reactor level   | 3.7  | 1      |
| 295005  | Main Turbine Generator Trip / 3                              |    |    |    | X  |    |   | AA1.01 - Recirculation system: Plant-Specific  | 3.3  | 1      |
| 295008  | High Reactor Water Level / 2                                 | X  |    |    |    |    |   | AK1.02 - Component erosion/damage  | 2.8  | 1      |
| 295008  | High Reactor Water Level / 2                                 |    | X  |    |    |    |   | AK2.07 - HPCS: Plant-Specific  | 3.0  | 1      |
| 295012  | High Drywell Temperature / 5                                 |    |    |    |    | X  |   | AA2.02 - Drywell pressure  | 4.1  | 1      |
| 295020  | Inadvertent Containment Isolation / 5                        |    |    |    |    |    | X | 2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. | 4.0  | 1      |
| 295020  | Inadvertent Containment Isolation / 5                        |    |    | X  |    |    |   | AK3.03 - Drywell/containment temperature response  | 3.2  | 1      |
| 295028  | High Drywell Temperature / 5                                 |    |    |    | X  |    |   | EA1.04 - Drywell pressure  | 4.0  | 1      |
| 295029  | High Suppression Pool Water Level / 5                        |    |    |    |    | X  |   | EA2.02 - Reactor pressure  | 3.6  | 1      |
| 295029  | High Suppression Pool Water Level / 5                        |    |    |    | X  |    |   | EA1.04 - RCIC: Plant-Specific  | 3.5  | 1      |

Facility: LaSalle

# BWR SR Examination Outline

Printed: 01/13

ES - 401

## Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2

Form ES-401-1

| E/APE # | E/APE Name / Safety Function                         | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|--|----|----|----|----|----|---|--|------|--------|
| 295032  | High Secondary Containment Area Temperature / 5      |    |    | X  |    |    |   | EK3.03 - Isolating affected systems  | 3.9* | 1      |
| 295033  | High Secondary Containment Area Radiation Levels / 9 |    |    |    |    |    | X | 2.4.30 - Knowledge of which events related to system operations/status should be reported to outside agencies. | 3.6  | 1      |
| 295033  | High Secondary Containment Area Radiation Levels / 9 | X  |    |    |    |    |   | EK1.02 - Personnel protection  | 4.2* | 1      |
| 600000  | Plant Fire On Site / 8                               |    | X  |    |    |    |   | AK2.01 - Sensors, detectors and valves   | 2.7  | 1      |

K/A Category Totals: 3 2 3 3 3 3

Group Point Total: 17

Facility: LaSalle

ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-1

| Sys/Ev # | System / Evolution Name                          | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 202002   | Recirculation Flow Control System / 1            |    |    |    |    |    |    |    |    |    |    | X | 2.4.6 - Knowledge symptom based EOP mitigation strategies.  | 4.0  | 1      |
| 202002   | Recirculation Flow Control System / 1            |    |    | X  |    |    |    |    |    |    |    |   | K3.03 - Reactor water level   | 3.4  | 1      |
| 203000   | RHR/LPCI: Injection Mode (Plant Specific) / 2    |    |    |    |    |    |    |    |    |    |    | X | 2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.   | 3.7  | 1      |
| 209001   | Low Pressure Core Spray System / 2               |    | X  |    |    |    |    |    |    |    |    |   | K2.03 - Initiation logic  | 3.1* | 1      |
| 209001   | Low Pressure Core Spray System / 2               |    |    |    |    |    |    | X  |    |    |    |   | A1.07 - Emergency generator loading   | 3.1  | 1      |
| 209002   | High Pressure Core Spray System (HPCS) / 2       |    |    |    |    |    |    |    |    |    |    | X | 2.4.30 - Knowledge of which events related to system operations/status should be reported to outside agencies.  | 3.6  | 1      |
| 211000   | Standby Liquid Control System / 1                |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - Effects of the moderator temperature coefficient of reactivity on the boron   | 2.9  | 1      |
| 215004   | Source Range Monitor (SRM) System / 7            |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - Detector operation  | 2.6  | 1      |
| 215004   | Source Range Monitor (SRM) System / 7            |    |    |    |    |    |    |    |    |    |    | X | 2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures. | 4.3  | 1      |
| 217000   | Reactor Core Isolation Cooling System (RCIC) / 2 |    |    |    |    | X  |    |    |    |    |    |   | K4.05 - Prevents radioactivity release to auxiliary/reactor building  | 3.5  | 1      |

Facility: LaSalle

ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-1

| Sys/Ev # | System / Evolution Name  | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 217000   | Reactor Core Isolation Cooling System (RCIC) / 2                       |    |    |    |    |    |    |    |    | X  |    |   | A3.06 - Lights and alarms  | 3.4  | 1      |
| 223002   | Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5 |    |    |    |    |    |    |    |    |    | X  |   | A4.01 - Valve closures   | 3.5  | 1      |
| 226001   | RHR/LPCI: Containment Spray System Mode / 5                            |    |    |    |    |    | X  |    |    |    |    |   | K6.10 - †Suppression chamber to drywell vacuum breakers: Mark-1-II | 3.5  | 1      |
| 239002   | Relief/Safety Valves / 3   | X  |    |    |    |    |    |    |    |    |    |   | K1.07 - Suppression pool   | 3.8  | 1      |
| 239002   | Relief/Safety Valves / 3   |    |    |    |    |    |    |    |    | X  |    |   | A3.06 - Reactor pressure   | 4.1* | 1      |
| 259002   | Reactor Water Level Control System / 2                                 |    |    |    |    |    | X  |    |    |    |    |   | K6.02 - A.C. power   | 3.4  | 1      |
| 259002   | Reactor Water Level Control System / 2                                 |    |    |    |    |    |    | X  |    |    |    |   | A1.02 - Reactor feedwater flow                                     | 3.5  | 1      |
| 262001   | A.C. Electrical Distribution / 6                                       | X  |    |    |    |    |    |    |    |    |    |   | K1.04 - Uninterruptible power supply                               | 3.4  | 1      |
| 262001   | A.C. Electrical Distribution / 6                                       |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - Off-site sources of power                                  | 3.6  | 1      |
| 264000   | Emergency Generators (Diesel/Jet) / 6                                  |    |    | X  |    |    |    |    |    |    |    |   | K3.01 - Emergency core cooling systems                             | 4.4* | 1      |
| 264000   | Emergency Generators (Diesel/Jet) / 6                                  |    |    |    |    |    |    |    | X  |    |    |   | A2.04 - Consequences of operating under/over excited               | 3.0  | 1      |

# BWR SRO Contamination Outline

Printed: 01/01/2003

Facility: LaSalle

ES - 401

## Plant Systems - Tier 2 / Group 1

Form ES-401-1

| Sys/Ev # | System / Evolution Name   | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic                         | Imp. | Points |
|----------|---------------------------|----|----|----|----|----|----|----|----|----|----|---|----------------------------------|------|--------|
| 290001   | Secondary Containment / 5 |    |    |    | X  |    |    |    |    |    |    |   | K4.03 - Fluid leakage collection | 2.9  | 1      |
| 290001   | Secondary Containment / 5 |    |    |    |    |    |    |    | X  |    |    |   | A2.05 - High area temperature    | 3.3  | 1      |

K/A Category Totals: 2 2 2 2 2 2 2 2 2 2 2 2 1 4

Group Point Total: 23



Facility: LaSalle

ES - 401

Plant Systems - Tier 2 / Group 2

Form ES-401-1

| Sys/Ev # | System / Evolution Name                          | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 202001   | Recirculation System / 1                         |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - Recirculation pumps: Plant-Specific  | 3.2  | 1      |
| 204000   | Reactor Water Cleanup System / 2                 | X  |    |    |    |    |    |    |    |    |    |   | K1.08 - SBLC   | 3.8  | 1      |
| 214000   | Rod Position Information System / 7              |    |    |    |    |    |    |    |    |    |    | X | 2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. | 4.0  | 1      |
| 214000   | Rod Position Information System / 7              |    |    |    |    |    | X  |    |    |    |    |   | K6.02 - Position indication probe  | 2.7  | 1      |
| 215002   | Rod Block Monitor System / 7                     |    |    | X  |    |    |    |    |    |    |    |   | K3.01 - Reactor manual control system: BWR-3, 4, 5   | 3.5  | 1      |
| 230000   | RHR/LPCI: Torus/Suppression Pool Spray Mode / 5  |    |    |    |    |    |    |    | X  |    |    |   | A2.15 - Loss of coolant accident   | 4.1  | 1      |
| 245000   | Main Turbine Generator and Auxiliary Systems / 4 |    |    |    |    | X  |    |    |    |    |    |   | K5.07 - Generator operations and limitations   | 2.9  | 1      |
| 263000   | D.C. Electrical Distribution / 6                 |    |    |    |    |    |    |    |    |    | X  |   | A4.02 - Battery voltage indicator: Plant-Specific  | 3.1  | 1      |
| 271000   | Offgas System / 9                                |    |    |    |    |    |    | X  |    |    |    |   | A1.08 - System flow  | 3.1  | 1      |
| 286000   | Fire Protection System / 8                       |    |    |    |    |    |    |    |    |    |    | X | 2.1.32 - Ability to explain and apply system limits and precautions.   | 3.8  | 1      |
| 290003   | Control Room HVAC / 9                            |    |    |    |    |    |    |    |    |    |    |   | K4.01 - System initiations/reconfiguration: Plant-Specific   | 3.2  | 1      |

# BWR SRO mination Outline

Printed: 01.003

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Plant Systems - Tier 2 / Group 2

Form ES-401-1

| Sys/Ev # | System / Evolution Name         | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic                           | Imp. | Points |
|----------|---------------------------------|----|----|----|----|----|----|----|----|----|----|---|------------------------------------|------|--------|
| 290003   | Control Room HVAC / 9           |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - Initiation/reconfiguration | 3.5  | 1      |
| 300000   | Instrument Air System (IAS) / 8 |    |    |    |    |    | X  |    |    |    |    |   | K6.03 - Temperature indicators     | 2.7  | 1      |

K/A Category Totals: 1 1 1 1 1 2 1 1 1 1 2

Group Point Total: 13

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ES - 401

Plant Systems - Tier 2 / Group 3

Form ES-401-1

| Sys/Ev # | System / Evolution Name             | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|-------------------------------------|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 201003   | Control Rod and Drive Mechanism / 1 |    |    |    |    |    |    |    | X  |    |    |   | A2.10 - †Excessive SCRAM time for a given drive mechanism  | 3.4  | 1      |
| 233000   | Fuel Pool Cooling and Clean-up / 9  |    |    |    |    |    |    |    |    |    |    | X | 2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. | 4.0  | 1      |
| 268000   | Radwaste / 9                        |    |    | X  |    |    |    |    |    |    |    |   | K3.04 - Drain sumps  | 2.8  | 1      |
| 268000   | Radwaste / 9                        |    |    |    |    | X  |    |    |    |    |    |   | K5.02 - Radiation hazards and ALARA concept  | 3.6* | 1      |

K/A Category Totals: 0 0 1 0 1 0 0 1 0 0 1

Group Point Total: 4

# Generic Knowledge Abilities Outline (Tier 3)

Printed: 01/13/200

## BWR SRO Examination Outline

Form ES-401-5

Facility: LaSalle

| Generic Category      | KA     | KA Topic  | Imp. | Points |
|-----------------------|--------|---|------|--------|
| Conduct of Operations | 2.1.7  | Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.                     | 4.4  | 1      |
|                       | 2.1.5  | Ability to locate and use procedures and directives related to shift staffing and activities.   | 3.4  | 1      |
|                       | 2.1.9  | Ability to direct personnel activities inside the control room.   | 4.0  | 1      |
|                       | 2.1.11 | Knowledge of less than one hour technical specification action statements for systems.  | 3.8  | 1      |
| Category Total:       |        |   |      | 4      |
| Equipment Control     | 2.2.18 | Knowledge of the process for managing maintenance activities during shutdown operations.  | 3.6  | 1      |
|                       | 2.2.10 | Knowledge of the process for determining if the margin of safety, as defined in the basis of any technical specification is reduced by a proposed change, test or experiment. | 3.3  | 1      |
|                       | 2.2.34 | Knowledge of the process for determining the internal and external effects on core reactivity.  | 3.2* | 1      |
|                       | 2.2.12 | Knowledge of surveillance procedures.   | 3.4  | 1      |
| Category Total:       |        |   |      | 4      |
| Radiation Control     | 2.3.6  | Knowledge of the requirements for reviewing and approving release permits.  | 3.1  | 1      |
|                       | 2.3.8  | Knowledge of the process for performing a planned gaseous radioactive release.  | 3.2  | 1      |
|                       | 2.3.9  | Knowledge of the process for performing a containment purge.  | 3.4  | 1      |
|                       | 2.3.2  | Knowledge of facility ALARA program.  | 2.9  | 1      |
| Category Total:       |        |   |      | 4      |

# Generic Knowledge & Abilities Outline (Tier 3)

Printed: 01/13/200

## BWR SRO Examination Outline

Form ES-401-5

Facility: LaSalle

| Generic Category | KA     | KA Topic  | Imp. | Points |
|------------------|--------|---|------|--------|
| Emergency Plan   | 2.4.26 | Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage.  | 3.3  | 1      |
|                  | 2.4.48 | Ability to interpret control room indications to verify the status and operation of system, and understand how operator action s and directives affect plant and system conditions. | 3.8  | 1      |
|                  | 2.4.6  | Knowledge symptom based EOP mitigation strategies.  | 4.0  | 1      |
|                  | 2.4.20 | Knowledge of operational implications of EOP warnings, cautions, and notes.   | 4.0  | 1      |
|                  | 2.4.35 | Knowledge of local auxiliary operator tasks during emergency operations including system geography and system implications.   | 3.5  | 1      |

Category Total: 5

Generic Total: 17

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Form ES-401-2

Exam Date: 05/29/2003

Exam Level: RO

| Tier  | Group       | K/A Category Points |    |    |       |    |       |    |       |    |       |    | Point Total |
|---|-------------|---------------------|----|----|-------|----|-------|----|-------|----|-------|----|-------------|
|   |             | K1                  | K2 | K3 | K4    | K5 | K6    | A1 | A2    | A3 | A4    | G* |             |
| 1.<br>Emergency & Abnormal Plant Evolutions | 1           | 5                   | 2  | 2  |       |    |       | 3  | 1     |    |       | 0  | 13          |
|   | 2           | 3                   | 4  | 4  |       |    |       | 5  | 2     |    |       | 1  | 19          |
|   | 3           | 0                   | 1  | 1  |       |    |       | 1  | 0     |    |       | 1  | 4           |
|   | Totals Tier | 8                   | 7  | 7  |       |    |       | 9  | 3     |    |       | 2  | 36          |
| 2.<br>Plant Systems                         | 1           | 3                   | 2  | 2  | 3     | 2  | 3     | 3  | 2     | 2  | 2     | 4  | 28          |
|   | 2           | 2                   | 2  | 2  | 2     | 1  | 3     | 2  | 3     | 1  | 1     | 0  | 19          |
|   | 3           | 0                   | 0  | 1  | 0     | 1  | 0     | 0  | 1     | 1  | 0     | 0  | 4           |
|   | Tier Totals | 5                   | 4  | 5  | 5     | 4  | 6     | 5  | 6     | 4  | 3     | 4  | 51          |
| 3. Generic Knowledge And Abilities          |             |                     |    |    | Cat 1 |    | Cat 2 |    | Cat 3 |    | Cat 4 |    |             |
|   |             |                     |    |    | 3     |    | 4     |    | 2     |    | 4     |    | 13          |

- Note: 1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., 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 exam must total 100 points.
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category /tier.
- 6.\*The generic 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.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the SRO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

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## BWR Reexamination Outline

Printed: 01/03

ES - 401

## Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1

Form ES-401-2

| E/APE # | E/APE Name / Safety Function  | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|---|----|----|----|----|----|---|--|------|--------|
| 295005  | Main Turbine Generator Trip / 3   | X  |    |    |    |    |   | AK1.03 - Pressure effects on reactor level         | 3.5  | 1      |
| 295005  | Main Turbine Generator Trip / 3   |    |    |    | X  |    |   | AA1.01 - Recirculation system: Plant-Specific      | 3.1  | 1      |
| 295006  | SCRAM / 1   | X  |    |    |    |    |   | AK1.01 - Decay heat generation and removal.        | 3.7  | 1      |
| 295007  | High Reactor Pressure / 3   | X  |    |    |    |    |   | AK1.02 - Decay heat generation                     | 3.1  | 1      |
| 295007  | High Reactor Pressure / 3   |    |    | X  |    |    |   | AK3.03 - RCIC operation: Plant-Specific            | 3.4  | 1      |
| 295010  | High Drywell Pressure / 5   | X  |    |    |    |    |   | AK1.01 - Downcomer submergence: Mark-I&II          | 3.0  | 1      |
| 295014  | Inadvertent Reactivity Addition / 1   |    | X  |    |    |    |   | AK2.05 - Neutron monitoring system                 | 4.0  | 1      |
| 295015  | Incomplete SCRAM / 1  |    |    | X  |    |    |   | AK3.01 - Bypassing rod insertion blocks            | 3.4  | 1      |
| 295015  | Incomplete SCRAM / 1  |    |    |    | X  |    |   | AA1.02 - RPS                                       | 4.0  | 1      |
| 295024  | High Drywell Pressure / 5   |    | X  |    |    |    |   | EK2.03 - LPCS: Plant-Specific                      | 3.8  | 1      |
| 295031  | Reactor Low Water Level / 2   |    |    |    |    | X  |   | EA2.01 - Reactor water level                       | 4.6* | 1      |
| 295037  | SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1 | X  |    |    |    |    |   | EK1.04 - Hot shutdown boron weight: Plant-Specific | 3.4  | 1      |
| 295037  | SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1 |    |    |    | X  |    |   | EA1.03 - ARI/RPT/ATWS: Plant-Specific              | 4.1* | 1      |

K/A Category Totals: 5 2 2 3 1 0

Group Point Total: 13

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# BWR Reactor Examination Outline

Printed: 01/11/03

ES - 401

## Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2

Form ES-401-2

| E/APE # | E/APE Name / Safety Function                | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|---|----|----|----|----|----|---|---|------|--------|
| 295003  | Partial or Complete Loss of A.C. Power / 6  |    |    | X  |    |    |   | AK3.06 - Containment isolation  | 3.7  | 1      |
| 295003  | Partial or Complete Loss of A.C. Power / 6  |    |    |    |    |    | X | 2.1.28 - Knowledge of the purpose and function of major system components and controls. | 3.2  | 1      |
| 295004  | Partial or Complete Loss of D.C. Power / 6  |    |    | X  |    |    |   | AK3.02 - Ground isolation/fault determination   | 2.9  | 1      |
| 295008  | High Reactor Water Level / 2                | X  |    |    |    |    |   | AK1.02 - Component erosion/damage   | 2.8  | 1      |
| 295008  | High Reactor Water Level / 2                |    | X  |    |    |    |   | AK2.07 - HPCS: Plant-Specific   | 2.9  | 1      |
| 295013  | High Suppression Pool Temperature / 5       |    | X  |    |    |    |   | AK2.01 - Suppression pool cooling   | 3.6  | 1      |
| 295016  | Control Room Abandonment / 7                |    |    |    | X  |    |   | AA1.05 - D.C. electrical distribution   | 2.8  | 1      |
| 295017  | High Off-Site Release Rate / 9              |    |    | X  |    |    |   | AK3.04 - Power reduction  | 3.6  | 1      |
| 295017  | High Off-Site Release Rate / 9              |    |    |    | X  |    |   | AA1.02 - Off-gas system   | 3.5  | 1      |
| 295020  | Inadvertent Containment Isolation / 5       |    |    | X  |    |    |   | AK3.03 - Drywell/containment temperature response                                       | 3.2  | 1      |
| 295020  | Inadvertent Containment Isolation / 5       |    |    |    |    | X  |   | AA2.04 - Reactor pressure   | 3.9  | 1      |
| 295026  | Suppression Pool High Water Temperature / 5 | X  |    |    |    |    |   | EK1.01 - Pump NPSH  | 3.0  | 1      |
| 295026  | Suppression Pool High Water Temperature / 5 |    | X  |    |    |    |   | EK2.02 - Suppression pool spray: Plant-Specific   | 3.6  | 1      |



# BWR RC Examination Outline

Printed: 01/13

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ES - 401

## Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2

Form ES-401-2

| E/APE # | E/APE Name / Safety Function                         | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|--|----|----|----|----|----|---|--|------|--------|
| 295028  | High Drywell Temperature / 5                         |    |    |    | X  |    |   | EA1.04 - Drywell pressure  | 3.9  | 1      |
| 295028  | High Drywell Temperature / 5                         |    |    |    |    | X  |   | EA2.06 - Torus/suppression chamber air space temperature: Plant-Specific | 3.4  | 1      |
| 295029  | High Suppression Pool Water Level / 5                |    |    |    | X  |    |   | EA1.04 - RCIC: Plant-Specific  | 3.4  | 1      |
| 295030  | Low Suppression Pool Water Level / 5                 |    |    |    | X  |    |   | EA1.03 - HPCS: Plant-Specific  | 3.4  | 1      |
| 295033  | High Secondary Containment Area Radiation Levels / 9 | X  |    |    |    |    |   | EK1.02 - Personnel protection  | 3.9  | 1      |
| 600000  | Plant Fire On Site / 8                               |    | X  |    |    |    |   | AK2.01 - Sensors, detectors and valves                                   | 2.6  | 1      |

K/A Category Totals: 3 4 4 5 2 1

Group Point Total: 19

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# BWR Reactor Examination Outline

Printed: 01/10/03

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## Emergency and Abnormal Plant Evolutions - Tier 1 / Group 3

Form ES-401-2

| E/APE # | E/APE Name / Safety Function                    | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|---|----|----|----|----|----|---|---|------|--------|
| 295021  | Loss of Shutdown Cooling / 4                    |    |    |    |    |    | X | 2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures. | 4.0  | 1      |
| 295023  | Refueling Accidents / 8                         |    | X  |    |    |    |   | AK2.02 - Fuel pool cooling and cleanup system   | 2.9  | 1      |
| 295032  | High Secondary Containment Area Temperature / 5 |    |    | X  |    |    |   | EK3.03 - Isolating affected systems   | 3.8  | 1      |
| 295032  | High Secondary Containment Area Temperature / 5 |    |    |    | X  |    |   | EA1.03 - Secondary containment ventilation  | 3.7  | 1      |

K/A Category Totals: 0 1 1 1 0 1

Group Point Total: 4

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ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-2

| Sys/Ev # | System / Evolution Name                    | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 202002   | Recirculation Flow Control System / 1      |    |    | X  |    |    |    |    |    |    |    |   | K3.03 - Reactor water level   | 3.3  | 1      |
| 202002   | Recirculation Flow Control System / 1      |    |    |    |    |    |    | X  |    |    |    |   | A1.06 - Reactor core flow   | 3.4  | 1      |
| 209001   | Low Pressure Core Spray System / 2         |    | X  |    |    |    |    |    |    |    |    |   | K2.03 - Initiation logic  | 2.9* | 1      |
| 209001   | Low Pressure Core Spray System / 2         |    |    |    |    |    |    | X  |    |    |    |   | A1.07 - Emergency generator loading   | 3.0  | 1      |
| 209002   | High Pressure Core Spray System (HPCS) / 2 |    | X  |    |    |    |    |    |    |    |    |   | K2.02 - Valve electrical power: BWR-5, 6  | 2.8  | 1      |
| 209002   | High Pressure Core Spray System (HPCS) / 2 |    |    |    |    |    | X  |    |    |    |    |   | K6.04 - Suppression pool suction strainer: BWR-5, 6   | 2.5  | 1      |
| 211000   | Standby Liquid Control System / 1          |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - Effects of the moderator temperature coefficient of reactivity on the boron   | 2.7  | 1      |
| 212000   | Reactor Protection System / 7              |    |    |    |    |    |    |    |    |    | X  |   | A4.09 - SCRAM instrument volume level   | 3.9  | 1      |
| 212000   | Reactor Protection System / 7              |    |    |    |    |    |    |    |    |    |    | X | 2.4.50 - Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.   | 3.3  | 1      |
| 215004   | Source Range Monitor (SRM) System / 7      |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - Detector operation  | 2.6  | 1      |
| 215004   | Source Range Monitor (SRM) System / 7      |    |    |    |    |    |    |    |    |    |    | X | 2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures. | 4.0  | 1      |

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Plant Systems - Tier 2 / Group 1

Form ES-401-2

| Sys/Ev # | System / Evolution Name  | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 216000   | Nuclear Boiler Instrumentation / 7                                     |    |    |    |    |    | X  |    |    |    |    |   | K6.02 - D.C. electrical distribution                                       | 2.8  | 1      |
| 216000   | Nuclear Boiler Instrumentation / 7                                     |    |    |    |    |    |    |    | X  |    |    |   | A2.13 - Instrument isolation valve openings                                | 2.8  | 1      |
| 217000   | Reactor Core Isolation Cooling System (RCIC) / 2                       |    |    |    | X  |    |    |    |    |    |    |   | K4.05 - Prevents radioactivity release to auxiliary/reactor building       | 3.2  | 1      |
| 217000   | Reactor Core Isolation Cooling System (RCIC) / 2                       |    |    |    |    |    |    |    |    | X  |    |   | A3.06 - Lights and alarms  | 3.5  | 1      |
| 223001   | Primary Containment System and Auxiliaries / 5                         | X  |    |    |    |    |    |    |    |    |    |   | K1.11 - Post accident sampling system                                      | 2.7  | 1      |
| 223002   | Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5 |    |    |    |    |    |    |    |    |    | X  |   | A4.01 - Valve closures   | 3.6  | 1      |
| 223002   | Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5 |    |    |    | X  |    |    |    |    |    |    |   | K4.05 - Single failures will not impair the function ability of the system | 2.9  | 1      |
| 239002   | Relief/Safety Valves / 3   | X  |    |    |    |    |    |    |    |    |    |   | K1.07 - Suppression pool   | 3.6  | 1      |
| 239002   | Relief/Safety Valves / 3   |    |    |    |    |    |    |    |    | X  |    |   | A3.06 - Reactor pressure   | 4.1* | 1      |
| 241000   | Reactor/Turbine Pressure Regulating System / 3                         |    |    |    | X  |    |    |    |    |    |    |   | K4.10 - Turbine shell warming: EHC-Only                                    | 2.5  | 1      |

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ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-2

| Sys/Ev # | System / Evolution Name                        | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 241000   | Reactor/Turbine Pressure Regulating System / 3 |    |    |    |    |    |    |    |    |    |    | X | 2.4.49 - Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. | 4.0  | 1      |
| 259001   | Reactor Feedwater System / 2                   |    |    |    |    |    |    |    |    |    |    | X | 2.4.6 - Knowledge symptom based EOP mitigation strategies.  | 3.1  | 1      |
| 259002   | Reactor Water Level Control System / 2         |    |    |    |    |    | X  |    |    |    |    |   | K6.02 - A.C. power  | 3.3  | 1      |
| 259002   | Reactor Water Level Control System / 2         |    |    |    |    |    |    | X  |    |    |    |   | A1.02 - Reactor feedwater flow  | 3.6  | 1      |
| 261000   | Standby Gas Treatment System / 9               | X  |    |    |    |    |    |    |    |    |    |   | K1.07 - Elevated release stack  | 3.1  | 1      |
| 264000   | Emergency Generators (Diesel/Jet) / 6          |    |    | X  |    |    |    |    |    |    |    |   | K3.01 - Emergency core cooling systems  | 4.2* | 1      |
| 264000   | Emergency Generators (Diesel/Jet) / 6          |    |    |    |    |    |    |    | X  |    |    |   | A2.04 - Consequences of operating under/over excited  | 2.9  | 1      |

K/A Category Totals: 3 2 2 3 2 3 3 2 2 2 4

Group Point Total: 28

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ES - 401

Plant Systems - Tier 2 / Group 2

Form ES-401-2

| Sys/Ev # | System / Evolution Name                                 | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|---|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 201003   | Control Rod and Drive Mechanism / 1                     |    |    |    |    |    |    |    | X  |    |    |   | A2.10 - †Excessive SCRAM time for a given drive mechanism          | 3.0  | 1      |
| 202001   | Recirculation System / 1                                |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - Recirculation pumps: Plant-Specific                        | 3.2* | 1      |
| 204000   | Reactor Water Cleanup System / 2                        | X  |    |    |    |    |    |    |    |    |    |   | K1.08 - SBLC   | 3.7  | 1      |
| 205000   | Shutdown Cooling System (RHR Shutdown Cooling Mode) / 4 |    |    | X  |    |    |    |    |    |    |    |   | K3.04 - Recirculation loop temperatures                            | 3.7  | 1      |
| 214000   | Rod Position Information System / 7                     |    |    |    |    |    | X  |    |    |    |    |   | K6.02 - Position indication probe                                  | 2.7  | 1      |
| 215002   | Rod Block Monitor System / 7                            |    |    | X  |    |    |    |    |    |    |    |   | K3.01 - Reactor manual control system: BWR-3, 4, 5                 | 3.3  | 1      |
| 219000   | RHR/LPCI: Torus/Suppression Pool Cooling Mode / 5       |    |    |    |    |    |    | X  |    |    |    |   | A1.09 - Suppression chamber air temperature: Plant-Specific        | 3.2  | 1      |
| 226001   | RHR/LPCI: Containment Spray System Mode / 5             |    |    |    |    |    | X  |    |    |    |    |   | K6.10 - †Suppression chamber to drywell vacuum breakers: Mark-1-II | 3.3  | 1      |
| 230000   | RHR/LPCI: Torus/Suppression Pool Spray Mode / 5         |    |    |    |    |    |    |    | X  |    |    |   | A2.15 - Loss of coolant accident                                   | 4.0  | 1      |
| 245000   | Main Turbine Generator and Auxiliary Systems / 4        |    |    |    |    | X  |    |    |    |    |    |   | K5.07 - Generator operations and limitations                       | 2.6  | 1      |
| 262001   | A.C. Electrical Distribution / 6                        | X  |    |    |    |    |    |    |    |    |    |   | K1.04 - Uninterruptible power supply                               | 3.1  | 1      |

Facility: LaSalle

ES - 401

Plant Systems - Tier 2 / Group 2

Form ES-401-2

| Sys/Ev # | System / Evolution Name          | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|----------------------------------|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 262001   | A.C. Electrical Distribution / 6 |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - Off-site sources of power                             | 3.3  | 1      |
| 263000   | D.C. Electrical Distribution / 6 |    |    |    |    |    |    |    |    |    | X  |   | A4.02 - Battery voltage indicator:<br>Plant-Specific          | 3.2  | 1      |
| 271000   | Offgas System / 9                |    |    |    |    |    |    | X  |    |    |    |   | A1.08 - System flow   | 3.1  | 1      |
| 290001   | Secondary Containment / 5        |    |    |    | X  |    |    |    |    |    |    |   | K4.03 - Fluid leakage collection                              | 2.8  | 1      |
| 290001   | Secondary Containment / 5        |    |    |    |    |    |    |    | X  |    |    |   | A2.05 - High area temperature                                 | 3.1  | 1      |
| 290003   | Control Room HVAC / 9            |    |    |    | X  |    |    |    |    |    |    |   | K4.01 - System initiations/reconfiguration:<br>Plant-Specific | 3.1  | 1      |
| 290003   | Control Room HVAC / 9            |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - Initiation/reconfiguration                            | 3.3  | 1      |
| 300000   | Instrument Air System (IAS) / 8  |    |    |    |    |    | X  |    |    |    |    |   | K6.03 - Temperature indicators                                | 2.7  | 1      |

K/A Category Totals: 2 2 2 2 1 3 2 3 1 1 0

Group Point Total: 19

# BWR RO Conversion Outline

Printed: 06/003

Facility: LaSalle

ES - 401

## Plant Systems - Tier 2 / Group 3

Form ES-401-2

| Sys/Ev # | System / Evolution Name       | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic                                    | Imp. | Points |
|----------|-------------------------------|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 268000   | Radwaste / 9                  |    |    | X  |    |    |    |    |    |    |    |   | K3.04 - Drain sumps                         | 2.7  | 1      |
| 268000   | Radwaste / 9                  |    |    |    |    | X  |    |    |    |    |    |   | K5.02 - Radiation hazards and ALARA concept | 3.1  | 1      |
| 288000   | Plant Ventilation Systems / 9 |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - Isolation/initiation signals        | 3.8  | 1      |
| 290002   | Reactor Vessel Internals / 5  |    |    |    |    |    |    |    | X  |    |    |   | A2.05 - †Exceeding thermal limits           | 3.7  | 1      |

K/A Category Totals: 0 0 0 1 0 1 0 0 0 1 1 0 0

Group Point Total: 4



# Generic Knowledge and Abilities Outline (Tier 3)

Printed: 01/13/2000

## BWR RO Examination Outline

Form ES-401-5

Facility: LaSalle

| Generic Category      | KA     | KA Topic  | Imp. | Points |
|-----------------------|--------|---|------|--------|
| Conduct of Operations | 2.1.9  | Ability to direct personnel activities inside the control room.   | 2.5  | 1      |
|                       | 2.1.11 | Knowledge of less than one hour technical specification action statements for systems.  | 3.0  | 1      |
|                       | 2.1.10 | Knowledge of conditions and limitations in the facility license.  | 2.7  | 1      |
| Category Total:       |        |   |      | 3      |
| Equipment Control     | 2.2.34 | Knowledge of the process for determining the internal and external effects on core reactivity.  | 2.8  | 1      |
|                       | 2.2.12 | Knowledge of surveillance procedures.   | 3.0  | 1      |
|                       | 2.2.22 | Knowledge of limiting conditions for operations and safety limits.  | 3.4  | 1      |
|                       | 2.2.30 | Knowledge of RO duties in the control room during fuel handling such as alarms from fuel handling area / communication with fuel storage facility / systems operated from the control room in support of fueling operations / and supporting instrumentation. | 3.5  | 1      |
| Category Total:       |        |   |      | 4      |
| Radiation Control     | 2.3.9  | Knowledge of the process for performing a containment purge.  | 2.5  | 1      |
|                       | 2.3.2  | Knowledge of facility ALARA program.  | 2.5  | 1      |
| Category Total:       |        |   |      | 2      |
| Emergency Plan        | 2.4.48 | Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.  | 3.5  | 1      |
|                       | 2.4.6  | Knowledge symptom based EOP mitigation strategies.  | 3.1  | 1      |
|                       | 2.4.20 | Knowledge of operational implications of EOP warnings, cautions, and notes.   | 3.3  | 1      |
|                       | 2.4.35 | Knowledge of local auxiliary operator tasks during emergency operations including system geography and system implications.   | 3.3  | 1      |
| Category Total:       |        |   |      | 4      |
| Generic Total:        |        |   |      | 13     |

# ***LaSalle County Station***

## **DYNAMIC SIMULATOR SCENARIO GUIDE**

**ILT CLASS 02-01 NRC EXAM**

**ESG 2**

**Rev. 0**

**01/05/2003**

**DEVELOPED BY:**

\_\_\_\_\_  
Site Exam Developer

\_\_\_\_\_  
Date

**APPROVED BY:**

\_\_\_\_\_  
Facility Representative

\_\_\_\_\_  
Date

Facility: LaSalle StationScenario No.: ESG 2

Op Test No.: \_\_\_\_\_

Examiners: \_\_\_\_\_

Operators: \_\_\_\_\_

**Initial Conditions:**

- Unit 1 startup is in progress IAW LGP-1-1.
- TLO Temperature controller in manual.
- 1A GC pump is OOS for alignment.
- HPCS is OOS to megger and inspect motor.
- Online Safety level is green.
- Unit 2 is operating at 100% power.

**Turnover:**

- Unit 1 is in a Division 3 work week.
- RR pump upshift IAW LOP-RR-05 is scheduled to be performed this shift.
- Ready to transfer HD Tank level control to pump forward.

| Event No. | Malf. No. | Event Type*            | Event Description   |
|-----------|-----------|------------------------|---|
| 1         | N/A       | N<br>BOP<br>SRO        | Transfer HD Tank level control to pump forward.                                 |
| 2         | N/A       | R<br>RO<br>SRO         | Upshift RR pumps during startup.  |
| 3         | CAEP      | I<br>BOP<br>SRO        | HD Tank level controller fails.   |
| 4         | MCF114    | C<br>BOP<br>SRO        | 1C HD Pump trips immediately after starting.                                    |
| 5         | MRD080    | C<br>RO<br>SRO         | Rod drift.  |
| 6         | MRC029    | I<br>RO<br>SRO         | Reactor Recirc FCV drifts closed.   |
| 7         | MRC041    | M<br>ALL<br>BOP<br>SRO | Reactor Recirculation line break.   |
| 8         | MNB078    |                        | 1B RHR fails to auto initiate.  |
| 9         | CAEP      |                        | The selected DW spray valve fails to open, the other loops valves will operate. |

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

# ***LaSalle County Station***

## **DYNAMIC SIMULATOR SCENARIO GUIDE**

**ILT CLASS 02-01 NRC EXAM**

**ESG 3**

**Rev. 0**

**1/07/2003**

DEVELOPED BY:

\_\_\_\_\_  
Site Exam Developer

\_\_\_\_\_  
Date

APPROVED BY:

\_\_\_\_\_  
Facility Representative

\_\_\_\_\_  
Date

Facility: LaSalle StationScenario No.: ESG 3

Op Test No.: \_\_\_\_\_

Examiners: \_\_\_\_\_

Operators: \_\_\_\_\_

**Initial Conditions:**

- Unit 1 is operating at 85% reactor power with flow control line at 107%.
- TLO Temperature controller in manual..
- 1C RHR Pump is OOS for breaker repair.
- 1B IN Compressor is OOS for lube oil change.
- Online Safety level is green.
- Unit 2 is operating at 100% power.

**Turnover:**

- Unit 1 is in a Division 2 work week.
- LOS-RP-W1 is scheduled to be performed this shift.
- A power ascension for load following is also scheduled for this shift.

| Event No. | Malf. No. | Event Type* |            | Event Description  |
|-----------|-----------|-------------|------------|--|
| 1         | N/A       | R           | RO<br>SRO  | Power ascension to 100% power at 300 MWE/hour.                                     |
| 2         | N/A       | N           | BOP<br>SRO | Complete LOS-RP-W1, Manual Scram Instrumentation.                                  |
| 3         | R0563P    | I           | BOP<br>SRO | RCIC Drain Pot alarm.  |
| 4         | MAI003    | C           | BOP<br>SRO | Trip of the running Instrument Nitrogen (IN) compressor.                           |
| 5         | CAEP      | C           | RO<br>SRO  | Trip of running TDRFP seal injection pump with failure of standby pump auto start. |
| 6         | MCF072    | I           | RO<br>SRO  | Output signal from the TDRFP A flow transmitter fails .                            |
| 7         | MCA005    | M           | ALL        | Broken Division 1 containment monitoring instrument line.                          |
| 8         | MNB104    |             | ALL        | Major steam leak propagates inside the primary containment.                        |

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

# ***LaSalle County Station***

## **DYNAMIC SIMULATOR SCENARIO GUIDE**

**ILT CLASS 02-01 NRC EXAM**

**ESG 4**

**Rev. 0**

**01/07/2003**

**DEVELOPED BY:**

\_\_\_\_\_  
Site Exam Developer

\_\_\_\_\_  
Date

**APPROVED BY:**

\_\_\_\_\_  
Chief Examiner

\_\_\_\_\_  
Date

Facility: LaSalle StationScenario No.: ESG 4Op Test No.: (Extra)

Examiners: \_\_\_\_\_

Operators: \_\_\_\_\_

**Initial Conditions:**

- Unit 1 is operating at 100% reactor power with flow control line at 107%.
- TLO Temperature controller in manual.
- 1A GC Pump OOS
- 1B EHC Pump OOS.
- Online Safety level is green.
- Unit 2 is operating at 100% power.

**Turnover:**

- A swap of VP chillers is scheduled to be performed this shift.

| Event No. | Malf. No.        | Event Type* |            | Event Description                             |
|-----------|------------------|-------------|------------|---|
| 1         | N/A              | R           | RO<br>SRO  | Power reduction to 85% power at 300 MWe/hour. |
| 2         | N/A              | N           | BOP<br>SRO | Swap VP chillers from A and C to B and C.     |
| 3         | P3E1A1D          | I           | RO<br>SRO  | CRD FCV Setpoint Failure.                     |
| 4         | VHTM60<br>AD     | CR          | BOP<br>SRO | 1A TDRFP Lube Oil Leak.                       |
| 5         | MCF030           | I           | ALL        | Heater String Isolation.                      |
| 6         | MGC002           | C           | BOP<br>SRO | Loss of Stator Cooling.                       |
| 7         | MCF081           | M           | BOP<br>SRO | 1B TDRFP Failure to Trip.                     |
| 8         |                  |             | ALL        | 5 Rod ATWS.                                   |
| 9         | MEH001<br>MMS007 |             | BOP<br>SRO | Failure of 1A EHC Pp./EHC line rupture.       |

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

## OPERATING TEST NO.:

| Applicant Type | Evolution Type         | Minimum Number | Scenario Number |             |             |               |
|----------------|------------------------|----------------|-----------------|-------------|-------------|---------------|
|                |                        |                | 1               | 2           | 3           | 4             |
| RO             | Reactivity             | 1              | ✓               | 2/          | ✓           | ✓/4           |
|                | Normal                 | 1              | 1/2             | 1/1         | 1/2         | 1/2           |
|                | Instrument / Component | 4              | 4,5/<br>3,6     | 5,6/<br>3,4 | 5,6/<br>3,4 | 3,5/<br>4,5,6 |
|                | Major                  | 1              | 7,8             | 7-9         | 7,8         | 7-9           |
| As RO          | Reactivity             | 1              | 1               | 2           | 1           | 1             |
|                | Normal                 | 0              |                 |             |             |               |
|                | Instrument / Component | 2              | 4,5             | 5,6         | 5,6         | 3,5           |
|                | Major                  | 1              | 7,8             | 7-9         | 7,8         | 7,8,9         |
| SRO-I          | Reactivity             | 0              |                 |             |             |               |
|                | Normal                 | 1              | 2               | 1           | 2           | 2             |
|                | Instrument / Component | 2              | 3-6             | 3-6         | 3-6         | 3-6           |
|                | Major                  | 1              | 7,8             | 7-9         | 7-8         | 7-9           |
| SRO-U          | Reactivity             | 0              |                 |             |             |               |
|                | Normal                 | 1              | 2               | 1           | 2           | 2             |
|                | Instrument / Component | 2              | 3-6             | 3-6         | 3-6         | 3-6           |
|                | Major                  | 1              | 7,8             | 7-9         | 7-8         | 7-9           |

- Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.
- (2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.
- (3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author:

NRC Reviewer:

*Patricia L. Hey* 1/17/83  
*W.R. McNeil* for MER



| <b>Tier/Group</b> | <b>Exam<br/>Outline</b> | <b>Randomly<br/>Selected<br/>K/A</b> | <b>Reason for Rejection</b>  |
|-------------------|-------------------------|--------------------------------------|--|
| 2 / 1             | RO                      | 211000A3.06                          | Appears to be double jeopardy with 204000K1.08.<br>Replaced with randomly selected KA 215004G2.4.4 |
| 2 / 1             | SRO                     | 211000A3.06                          | Appears to be double jeopardy with 204000K1.08.<br>Replaced with randomly selected KA 215004G2.4.4 |
|                   |                         |                                      |  |
|                   |                         |                                      |  |
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