

| Facility  |             | Brunswick              |        |        |        |        |        |        |        |        |        |        |       | Date of Exam:   |    | 2014  |    |   |   |
|---|-------------|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-----------------|----|-------|----|---|---|
| Tier  | Group       | RO K/A Category Points |        |        |        |        |        |        |        |        |        |        |       | SRO-Only Points |    |       |    |   |   |
|   |             | K<br>1                 | K<br>2 | K<br>3 | K<br>4 | K<br>5 | K<br>6 | A<br>1 | A<br>2 | A<br>3 | A<br>4 | G<br>* | Total | A2              | G* | Total |    |   |   |
| 1.<br>Emergency &<br>Abnormal Plant<br>Evolutions | 1           | 4                      | 3      | 3      |        |        |        | 4      | 3      |        |        |        | 3     | 20              | 3  | 4     | 7  |   |   |
|   | 2           | 1                      | 2      | 1      |        |        |        | 1      | 1      |        |        |        | 1     | 7               | 1  | 2     | 3  |   |   |
|   | Tier Totals | 5                      | 5      | 4      | N/A    |        |        | 5      | 4      | N/A    |        |        | 4     | 27              | 4  | 6     | 10 |   |   |
| 2.<br>Plant<br>Systems                            | 1           | 3                      | 2      | 3      | 2      | 2      | 2      | 2      | 2      | 3      | 3      | 2      | 26    | 2               | 3  | 5     |    |   |   |
|   | 2           | 1                      | 1      | 1      | 1      | 1      | 1      | 1      | 2      | 1      | 1      | 1      | 12    | 0               | 1  | 3     |    |   |   |
|   | Tier Totals | 4                      | 3      | 4      | 3      | 3      | 3      | 3      | 4      | 4      | 4      | 3      | 38    | 3               | 5  | 8     |    |   |   |
| 3. Generic Knowledge and Abilities<br>Categories  |             |                        |        |        | 1      |        | 2      |        | 3      |        | 4      |        | 10    |                 | 1  | 2     | 3  | 4 | 7 |
|   |             |                        |        |        | 3      |        | 3      |        | 2      |        | 2      |        |       |                 | 1  | 2     | 2  | 2 |   |

1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the **Tier Totals** in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by  $\pm 1$  from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, 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.
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.

| KA            | NAME / SAFETY FUNCTION:  | IR  | K1  | K2                                  | K3                                  | K4                       | K5                       | K6                       | A1                                  | A2                                  | A3                       | A4                       | G                                   | TOPIC:   |
|---------------|--|-----|-----|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--|
|               |  | RO  | SRO |                                     |                                     |                          |                          |                          |                                     |                                     |                          |                          |                                     |  |
| 295001AK1.02  | Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4 | 3.3 | 3.5 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Power/flow distribution.....   |
| 295003AA2.05  | Partial or Complete Loss of AC / 6                               | 3.9 | 4.2 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Whether a partial or complete loss of A.C. power has occurred.....   |
| 295004AA1.03  | Partial or Total Loss of DC Pwr / 6                              | 3.4 | 3.6 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | A.C. electrical distribution.....  |
| 295005AK1.01  | Main Turbine Generator Trip / 3                                  | 4.0 | 4.1 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Pressure effects on reactor power.....   |
| 295006AK1.02  | SCRAM / 1  | 3.4 | 3.7 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Shutdown margin.....   |
| 295007AK1.02  | Control Room Abandonment / 7                                     | 2.9 | 3.1 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Control room HVAC.....   |
| 295018AA1.01  | Partial or Total Loss of CCW / 8                                 | 3.3 | 3.4 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Backup systems.....  |
| 295019G2.4.47 | Partial or Total Loss of Inst. Air / 8                           | 4.2 | 4.2 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material. |
| 295021AK1.02  | Loss of Shutdown Cooling / 4                                     | 3.3 | 3.4 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Thermal stratification.....  |
| 295023AK2.06  | Refueling Acc Cooling Mode / 8                                   | 3.4 | 3.8 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Containment ventilation: Mark-III.....   |
| 295024EA1.14  | High Drywell Pressure / 5  | 3.4 | 3.5 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Drywell ventilation system.....  |

| KA                 | NAME / SAFETY FUNCTION:   | IR  | K1  | K2                       | K3                                  | K4                                  | K5                       | K6                       | A1                                  | A2                                  | A3                       | A4                       | G                                   | TOPIC:   |
|--------------------|---|-----|-----|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--|
|                    |   | RO  | SRO |                          |                                     |                                     |                          |                          |                                     |                                     |                          |                          |                                     |  |
| 295025EK3.09       | High Reactor Pressure / 3   | 3.7 | 3.7 | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Low-low set initiation: Plant-Specific.....                                    |
| 295026G2.1.28<br>5 | Suppression Pool High Water Temp. / 5                                 | 4.1 | 4.1 | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of the purpose and function of major system components and controls. |
| 295028EK2.03       | High Drywell Temperature / 5  | 3.6 | 3.8 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Reactor water level indication.....  |
| 295030G2.2.38      | Low Suppression Pool Wtr Lvl / 5                                      | 3.6 | 4.5 | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of conditions and limitations in the facility license.               |
| 295031EA2.03       | Reactor Low Water Level / 2   | 4.2 | 4.2 | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Reactor pressure.....  |
| 295037EA1.01       | SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1 | 4.6 | 4.6 | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Reactor Protection System.....   |
| 295038EK3.03       | High Off-site Release Rate / 9  | 3.7 | 3.9 | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Control room ventilation isolation: Plant-Specific...                          |
| 600000AA2.04       | Plant Fire On Site / 8  | 2.8 | 3.1 | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | The fire's extent of potential operational damage to plant equipment           |
| 700000AK3.01       | Generator Voltage and Electric Grid Disturbancecs                     | 3.9 | 4.2 | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Reactor and Turbine trip criteria  |

| KA            | NAME / SAFETY FUNCTION:                              | IR  | K1  | K2                                  | K3                                  | K4                                  | K5                       | K6                       | A1                                  | A2                                  | A3                       | A4                       | G                                   | TOPIC:   |
|---------------|--|-----|-----|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--|
|               |  | RO  | SRO |                                     |                                     |                                     |                          |                          |                                     |                                     |                          |                          |                                     |  |
| 295008AA2.01  | High Reactor Water Level / 2                         | 3.9 | 3.9 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Reactor water level.....   |
| 295014AK1.06  | Inadvertent Reactivity Addition / 1                  | 3.8 | 3.9 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Abnormal reactivity additions.....   |
| 295015AK3.01  | Incomplete SCRAM / 1                                 | 3.4 | 3.7 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Bypassing rod insertion blocks.....  |
| 295032EK2.04  | High Secondary Containment Area Temperature / 5      | 3.6 | 3.8 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | PCIS/NSSSS.....  |
| 295033G2.4.45 | High Secondary Containment Area Radiation Levels / 9 | 4.1 | 4.3 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to prioritize and interpret the significance of each annunciator or alarm. |
| 295034EK2.03  | Secondary Containment Ventilation High Radiation / 9 | 4.3 | 4.5 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | SBGT/FRVS: Plant-Specific.....   |
| 295036EA1.03  | Secondary Containment High Sump/Area Water Level / 5 | 2.8 | 3.0 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Radwaste.....  |

| KA          | NAME / SAFETY FUNCTION:  | IR  | K1  | K2                                  | K3                                  | K4                                  | K5                                  | K6                                  | A1                                  | A2                                  | A3                                  | A4                                  | G                        | TOPIC:  |
|-------------|--------------------------|-----|-----|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|---|
|             |                          | RO  | SRO |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                          |   |
| 203000A1.05 | RHR/LPCI: Injection Mode | 3.8 | 3.7 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Suppression pool level                        |
| 203000A3.03 | RHR/LPCI: Injection Mode | 3.7 | 3.6 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | Pump discharge pressure                       |
| 205000K4.05 | Shutdown Cooling         | 3.6 | 3.7 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Reactor cooldown rate                         |
| 206000A2.08 | HPCI                     | 3.9 | 4.2 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | †High suppression pool temperature: BWR-2,3,4 |
| 206000K2.04 | HPCI                     | 2.5 | 2.7 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Turbine control circuits: BWR-2,3,4           |
| 209001K5.05 | LPCS                     | 2.5 | 2.5 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | System venting                                |
| 211000A4.02 | SLC                      | 4.2 | 4.2 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | SBLC control switch                           |
| 212000K2.01 | RPS                      | 3.2 | 3.3 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | RPS motor-generator sets                      |
| 215003K1.07 | IRM                      | 3.0 | 3.0 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Reactor vessel                                |
| 215004K3.02 | Source Range Monitor     | 3.4 | 3.4 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Reactor manual control: Plant-Specific        |
| 215004K5.03 | Source Range Monitor     | 2.8 | 2.8 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Changing detector position                    |

| KA            | NAME / SAFETY FUNCTION:           | IR  | K1  | K2                                  | K3                       | K4                                  | K5                       | K6                                  | A1                       | A2                                  | A3                                  | A4                                  | G                        | TOPIC:  |
|---------------|-----------------------------------|-----|-----|-------------------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|---|
|               |                                   | RO  | SRO |                                     |                          |                                     |                          |                                     |                          |                                     |                                     |                                     |                          |   |
| 215005A2.06   | APRM / LPRM                       | 3.4 | 3.5 | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Recirculation flow channels upscale   |
| 217000A4.07   | RCIC                              | 3.9 | 3.8 | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | Reactor pressure  |
| 217000G2.4.4  | RCIC                              | 4.5 | 4.7 | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures. |
| 218000A3.03   | ADS                               | 3.7 | 3.8 | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | ADS valve acoustical monitor noise: Plant-Specific  |
| 223002G2.2.36 | PCIS/Nuclear Steam Supply Shutoff | 3.1 | 4.2 | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions of operations                 |
| 239002K1.05   | SRVs                              | 3.1 | 3.3 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Plant air systems: Plant-Specific   |
| 239002K6.03   | SRVs                              | 2.7 | 2.9 | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | A.C. power: Plant-Specific  |
| 259002K3.07   | Reactor Water Level Control       | 3.4 | 3.4 | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Reactor water level indication  |
| 261000K1.11   | SGTS                              | 3.2 | 3.3 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Primary containment pressure  |
| 262001A4.02   | AC Electrical Distribution        | 3.4 | 3.4 | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | Synchroscope, including understanding of running and incoming voltages  |
| 262002K6.03   | UPS (AC/DC)                       | 2.7 | 2.9 | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | Static inverter   |

| KA          | NAME / SAFETY FUNCTION:    | IR  | K1  | K2                       | K3                       | K4                                  | K5                                  | K6                       | A1                                  | A2                       | A3                                  | A4                       | G                        | TOPIC:   |
|-------------|----------------------------|-----|-----|--------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--|
|             |                            | RO  | SRO |                          |                          |                                     |                                     |                          |                                     |                          |                                     |                          |                          |  |
| 263000A1.01 | DC Electrical Distribution | 2.5 | 2.8 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Battery charging/discharging rate  |
| 264000K4.05 | EDGs                       | 3.2 | 3.5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Load shedding and sequencing   |
| 300000K3.01 | Instrument Air             | 2.7 | 2.9 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Containment air system   |
| 400000A3.01 | Component Cooling Water    | 3.0 | 3.0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Setpoints on instrument signal levels for normal operations, warnings, and trips that are applicable to the CCWS |

| KA          | NAME / SAFETY FUNCTION:           | IR  | K1  | K2                                  | K3                                  | K4                                  | K5                                  | K6                                  | A1                                  | A2                                  | A3                                  | A4                       | G                        | TOPIC:  |
|-------------|-----------------------------------|-----|-----|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|---|
|             |                                   | RO  | SRO |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                                     |                          |                          |   |
| 201002A1.04 | RMCS                              | 3.6 | 3.5 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Overall reactor power                           |
| 201003A2.09 | Control Rod and Drive Mechanism   | 3.2 | 3.4 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Low reactor pressure                            |
| 201006K6.05 | RWM                               | 2.7 | 2.7 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Steam flow input: P-Spec(Not-BWR6)              |
| 214000A4.01 | RPIS                              | 3.2 | 3.3 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | RCIS rod action control bypass switches         |
| 216000A2.02 | Nuclear Boiler Inst.              | 2.9 | 3.0 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Instrument line plugging                        |
| 219000K2.01 | RHR/LPCI: Torus/Pool Cooling Mode | 2.5 | 2.9 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Valves  |
| 230000A3.01 | RHR/LPCI: Torus/Pool Spray Mode   | 3.4 | 3.3 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Valve operation                                 |
| 245000K1.07 | Main Turbine Gen. / Aux.          | 2.5 | 2.5 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Plant air systems                               |
| 256000K4.11 | Reactor Condensate                | 2.9 | 3.0 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Isolation of SJAE's on low flow: Plant-Specific |
| 259001K5.03 | Reactor Feedwater                 | 2.8 | 2.8 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Turbine operation: TDRFP's-Only                 |
| 271000K3.01 | Offgas                            | 3.5 | 3.5 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | Condenser vacuum                                |



| KA | NAME / SAFETY FUNCTION: | IR | K1  | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | TOPIC: |
|----|-------------------------|----|-----|----|----|----|----|----|----|----|----|----|---|--------|
|    |                         | RO | SRO |    |    |    |    |    |    |    |    |    |   |        |

|               |                |     |     |                          |                          |                          |                          |                          |                          |                          |                          |                          |                                     |   |
|---------------|----------------|-----|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|---|
| 290001G2.4.34 | Secondary CTMT | 4.2 | 4.1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects |
|---------------|----------------|-----|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|---|

| KA      | NAME / SAFETY FUNCTION:    | IR  |     | K1                       | K2                       | K3                       | K4                       | K5                       | K6                       | A1                       | A2                       | A3                       | A4                       | G                                   | TOPIC:  |
|---------|----------------------------|-----|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|---|
|         |                            | RO  | SRO |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                                     |   |
| G2.1.25 | Conduct of operations      | 3.9 | 4.2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to interpret reference materials such as graphs, monographs and tables which contain performance data.                                  |
| G2.1.27 | Conduct of operations      | 3.9 | 4   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of system purpose and or function.  |
| G2.1.31 | Conduct of operations      | 4.6 | 4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to locate control room switches, controls and indications and to determine that they are correctly reflecting the desired plant lineup. |
| G2.2.13 | Equipment Control          | 4.1 | 4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of tagging and clearance procedures.  |
| G2.2.3  | Equipment Control          | 3.8 | 3.9 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (multi-unit license) Knowledge of the design, procedural and operational differences between units.   |
| G2.2.41 | Equipment Control          | 3.5 | 3.9 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to obtain and interpret station electrical and mechanical drawings  |
| G2.3.13 | Radiation Control          | 3.4 | 3.8 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of radiological safety procedures pertaining to licensed operator duties  |
| G2.3.14 | Radiation Control          | 3.4 | 3.8 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities                   |
| G2.4.21 | Emergency Procedures/Plans | 4.0 | 4.6 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of the parameters and logic used to assess the status of safety functions   |
| G2.4.9  | Emergency Procedures/Plans | 3.8 | 4.2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.                                    |

| KA            | NAME / SAFETY FUNCTION:  | IR  | K1  | K2                       | K3                       | K4                       | K5                       | K6                       | A1                       | A2                                  | A3                       | A4                       | G                                   | TOPIC:   |
|---------------|--|-----|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--|
|               |  | RO  | SRO |                          |                          |                          |                          |                          |                          |                                     |                          |                          |                                     |  |
| 295001G2.1.27 | Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4 | 3.9 | 4   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of system purpose and or function.   |
| 295005G2.2.22 | Main Turbine Generator Trip / 3                                  | 4.0 | 4.7 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of limiting conditions for operations and safety limits.   |
| 295025G2.4.45 | High Reactor Pressure / 3  | 4.1 | 4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to prioritize and interpret the significance of each annunciator or alarm.   |
| 295026EA2.01  | Suppression Pool High Water Temp. / 5                            | 4.1 | 4.2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Suppression pool water temperature.....  |
| 295030EA2.02  | Low Suppression Pool Wtr Lvl / 5                                 | 3.9 | 3.9 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Suppression pool temperature.....  |
| 295031G2.4.30 | Reactor Low Water Level / 2                                      | 2.7 | 4.1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of events related to system operations/status that must be reported to internal organizations or outside agencies. |
| 295038EA2.03  | High Off-site Release Rate / 9                                   | 3.5 | 4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Radiation levels.....  |

| KA            | NAME / SAFETY FUNCTION:                              | IR  | K1  | K2                       | K3                       | K4                       | K5                       | K6                       | A1                       | A2                                  | A3                       | A4                       | G                                   | TOPIC:  |
|---------------|--|-----|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|---|
|               |  | RO  | SRO |                          |                          |                          |                          |                          |                          |                                     |                          |                          |                                     |   |
| 295015G2.4.20 | Incomplete SCRAM / 1                                 | 3.8 | 4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of operational implications of EOP warnings, cautions and notes.  |
| 295022AA2.02  | Loss of CRD Pumps / 1                                | 3.3 | 3.4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | CRD system status.....  |
| 295033G2.2.44 | High Secondary Containment Area Radiation Levels / 9 | 4.2 | 4.4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions |

| KA            | NAME / SAFETY FUNCTION:  | IR  | K1  | K2                       | K3                       | K4                       | K5                       | K6                       | A1                       | A2                                  | A3                       | A4                       | G                                   | TOPIC:   |
|---------------|--------------------------|-----|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--|
|               |                          | RO  | SRO |                          |                          |                          |                          |                          |                          |                                     |                          |                          |                                     |  |
| 203000A2.16   | RHR/LPCI: Injection Mode | 4.4 | 4.5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Loss of coolant accident   |
| 215003G2.4.30 | IRM                      | 2.7 | 4.1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of events related to system operations/status that must be reported to internal organizations or outside agencies. |
| 215005G2.2.3  | APRM / LPRM              | 3.8 | 3.9 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (multi-unit license) Knowledge of the design, procedural and operational differences between units.                          |
| 261000G2.2.39 | SGTS                     | 3.9 | 4.5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of less than one hour technical specification action statements for systems.                                       |
| 400000A2.01   | Component Cooling Water  | 3.3 | 3.4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Loss of CCW pump   |

| KA            | NAME / SAFETY FUNCTION: | IR  | K1  | K2                       | K3                       | K4                       | K5                       | K6                       | A1                       | A2                                  | A3                       | A4                       | G                                   | TOPIC:   |
|---------------|-------------------------|-----|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--|
|               |                         | RO  | SRO |                          |                          |                          |                          |                          |                          |                                     |                          |                          |                                     |  |
| 201006G2.4.47 | RWM                     | 4.2 | 4.2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material. |
| 290001G2.4.45 | Secondary CTMT          | 4.1 | 4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to prioritize and interpret the significance of each annunciator or alarm.   |
| 290003A2.04   | Control Room HVAC       | 3.1 | 3.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Initiation/failure of fire protection system   |

| KA      | NAME / SAFETY FUNCTION:    | IR  | K1  | K2                       | K3                       | K4                       | K5                       | K6                       | A1                       | A2                       | A3                       | A4                       | G                                   | TOPIC:  |
|---------|----------------------------|-----|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|---|
|         |                            | RO  | SRO |                          |                          |                          |                          |                          |                          |                          |                          |                          |                                     |   |
| G2.1.39 | Conduct of operations      | 3.6 | 4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of conservative decision making practices   |
| G2.2.3  | Equipment Control          | 3.8 | 3.9 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (multi-unit license) Knowledge of the design, procedural and operational differences between units.                           |
| G2.2.37 | Equipment Control          | 3.6 | 4.6 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to determine operability and/or availability of safety related equipment  |
| G2.3.14 | Radiation Control          | 3.4 | 3.8 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities |
| G2.3.4  | Radiation Control          | 3.2 | 3.7 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of radiation exposure limits under normal and emergency conditions  |
| G2.4.27 | Emergency Procedures/Plans | 3.4 | 3.9 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Knowledge of "fire in the plant" procedures.  |
| G2.4.45 | Emergency Procedures/Plans | 4.1 | 4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Ability to prioritize and interpret the significance of each annunciator or alarm.  |

| Facility: <u>Brunswick</u>  |               | Date of Examination: <u>October 2014</u>   |
|---|---------------|--|
| Examination Level: RO <input type="checkbox"/> SRO <input type="checkbox"/>   |               | Operating Test Number: <u>FINAL</u>  |
| Administrative Topic<br>(see Note)  | Type<br>Code* | Describe activity to be performed  |
| Conduct of Operations<br>(COO-01)<br>(RO, then SRO)   | R, M          | <b>Calculate GAFS and T.S. Assessment</b><br><br>2.1.23 Ability to perform specific system and integrated plant procedures during all modes of operation.  |
| Conduct of Operations<br>(COO-02)<br>(RO)   | R, M          | <b>Verifying SLC Operating Parameters</b><br><br>2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation. |
| Conduct of Operations<br>(COO-03)<br>(SRO)  | R, D          | <b>Evaluate Plant Chemistry Limits During Condenser Tube Leak</b><br><br>2.1.34 Knowledge of primary and secondary plant chemistry limits.   |
| Equipment Control<br>(RO and SRO)   | R, D          | <b>Evaluate a CRD Clearance</b><br><br>2.2.13 Knowledge of tagging and clearance procedures.   |
| Radiation Control<br>(RO and SRO)   | R, D, P       | <b>Determine Total Dose for ALARA</b><br><br>2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions  |
| Emergency Procedures/Plan<br>(SRO Only)   | R, N          | <b>Classify an Emergency per PEP-2.1</b><br><br>2.4.29 Knowledge of the emergency plan.  |
| NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.   |               |  |
| * Type Codes & Criteria: <ul style="list-style-type: none"> <li>(C)ontrol room, (S)imulator, or Class(R)oom</li> <li>(D)irect from bank (<math>\leq 3</math> for ROs; <math>\leq 4</math> for SROs &amp; RO retakes)</li> <li>(N)ew or (M)odified from bank (<math>\geq 1</math>)</li> <li>(P)revious 2 exams (<math>\leq 1</math>; randomly selected)</li> </ul> |               |  |



**Conduct of Operations (COO-01) (RO, then SRO)**

Calculate GAFs and Tech Spec Assessment

R, M

K/A 2.1.23 Ability to perform specific system and integrated plant procedures during all modes of operation.

This is a modified JPM that requires the Examinee to calculate Gain Adjustment Factors (GAFs) per OPT-01.8C, and then the SRO determines the Tech Spec implications based on the calculations. Numbers were modified to provide different values for calculated GAFs and different GAFs that were out of spec.

**Conduct of Operations (COO-02) (RO)**

Verifying SLC Operating Parameters

K/A 2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

This is a modified JPM that requires the RO to verifying SLC Tank operating parameters. This is part of the RO DSR. Parameters were changed to provide satisfactory results.

**Conduct of Operations (COO-03) (SRO)**

Evaluate Plant Chemistry Limits during Condenser Tube Leak

R, M

2.1.34 Knowledge of primary and secondary plant chemistry limits.

This is a bank JPM that was used on the 2008 NRC Exam. It requires the Examinee to evaluate plant chemistry limit IAW 0AOP-26.0, High Reactor Coolant Or Condensate Conductivity and then determine the determine applicable actions required by 0AI-81, Water Chemistry Guidelines, related to plant operations.

**Equipment Control (RO and SRO)**

Evaluate a Clearance Boundary – 2A CRD Pump

R, D

K/A 2.2.13 Knowledge of tagging and clearance procedures.

This is a bank JPM that was used on the 2008 NRC exam. Given a boundary request form and a written clearance, the Examinee must evaluate the clearance for safety and accuracy.

**Radiation Control (RO and SRO)**

Determine Total Dose for ALARA

R, M

K/A 2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions.

The is a bank JPM that was used on the previous NRC Exam (2012). It required the Examinee to determine the travel path which gives the lowest dose, ALARA.

**Emergency Procedures/Plan (SRO only)**

Classify and Emergency IAW OPEP-2.1

R, N

K/A 2.4.40 Knowledge of SRO responsibilities in Emergency Plan implementation.

This is a new JPM that requires the SRO Examinee to classify and emergency. Although classification JPMs have been use in previous exams, the classification requirements for this JPM are new.

Facility: BrunswickDate of Examination: OCT 2014Exam Level: RO ☐SRO-I ☐**SRO-U** ☐Operating Test No.: DRAFTControl Room Systems<sup>@</sup> (8 for RO); (7 for SRO-I)

| System / JPM Title                                    | Type Code*     | Safety Function |
|---|----------------|-----------------|
| a. Start second Recirc Pump                           | S, P, A        | 1               |
| b. Start HPCI with Exhaust Diaphragm failure          | S, D, L, A     | 2               |
| c. <b>Emergency Equalize around MSIVs</b>             | S, P           | 3               |
| d. <b>SDC restoration with RHR overload</b>           | S, D, A, L, EN | 4               |
| e. (RO only) Terminate PC venting                     | S, D           | 5               |
| f. <b>Bus E3 Normal feeder to DG3, with DG Ground</b> | S, D, A        | 6               |
| g. Place RPS to Alternate                             | S,D            | 7               |
| h. Perform PASS lineup                                | S, N           | 9               |

In-Plant Systems<sup>@</sup> (3 for RO/SRO-I)

|   |            |   |
|---|------------|---|
| i. SEP-09 with RB Accessible                              | R, D, E    | 2 |
| j. <b>Secure Condensate Pump IAW AOP-32 (Bkr Failure)</b> | R, A, E, D | 7 |
| k. <b>Place IA Dryer in Sweep Mode</b>                    | R, N, E    | 8 |

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

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

**a. Recovery from Recirc System Runback**

202001 A4.01

Ability to operate and/or monitor in the control room:  
Recirculation Pumps

This is a previous exam (2012) simulator alternate path JPM that will have the examinees preparing to start the second recirc pump. When the pump is started and the discharge valve is being throttled open the only running pump will trip requiring a reactor manual scram. This JPM was randomly selected from the 2012 exam.

**b. Start HPCI with Exhaust Diaphragm failure**

206000 A3.09

Ability to monitor automatic operation of HPCI including response to system isolation

This is a banked JPM that will require the examinee to start HPCI for injection per the Hard Card and restore RPV water level. As an alternate path the exhaust diaphragm breaks and HCI does not auto isolate requiring manual isolation of HPCI.

**c. Emergency Equalize around MSIVs**

239001 A4.01

Ability to manually operate and or monitor in the Control Room:  
MSIVs

This is a banked simulator JPM that will require the examinee to perform the control operator actions associated with emergency equalization around the MSIVs. This JPM was randomly selected from the 2010-2 exam.

**d. SDC restoration with RHR valve overload**

295021 AA1.04

Ability to manually operate Alternate Heat Removal Methods

This is a low power banked simulator JPM that will require the examinee to perform Alternate Shutdown Cooling IAW 0AOP-15.0. As an alternate path the RHR pump has on overload condition.

**e. (RO only) Terminate PC venting**

295024 EA1.19

Ability to operate/monitor Containment Atmosphere Control System as it applies to High Drywell Pressure

This is a banked simulator JPM that will require the examinee to terminate Primary Containment Venting, using SEP-01, Section 4.

**f. Bus E3 Normal feeder to DG3, with DG Ground**

264000 A4.04

Ability to manually operate and/or monitor in the control room Manual start, loading, and stopping of emergency generator.

This is a banked simulator JPM that will require the examinee to place E3 on the DG. This is an alternate path JPM in that an annunciator will alert the operator to remove the load from the DG.

**g. Place RPS to Alternate**

212000 A2.02

Ability to predict the impacts of RPS bus power supply failure on RPS System ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations.

This is a banked simulator JPM that will require the examinee to transfer RPS alternate power to alternate.

**h. Perform PASS lineup**

295038 EA1.05

Ability to manually operate and/or monitor in the control room: Post Accident Sampling System (PASS).

This is a new simulator JPM that will require the examinee to lineup the Post Accident Sampling System for taking a sample.

**i. SEP-09 with RB Accessible**

295009 AA1.02

Ability to operate or monitor the CRD System as it applies to low reactor water level.

This is a banked in-plant JPM that will require the examinee to simulate performing SEP-09, CRD System flow maximization using two pumps and the reactor building accessible. This JPM is performed in the RCA.

**j. Secure Condensate Pump IAW AOP-32 (Bkr Failure)**

295016 AA1.06

Ability to operate and/or monitor the following as it they apply to Control Room Abandonment-Reactor Water Level.

This is a banked in-plant JPM that will require the examinee to simulate the actions associated with AOP-32. This JPM is alternate path in that the condensate pump does not trip requiring additional actions to trip the pump. This JPM is performed in the RCA.

**k. Place IA Dryer in Sweep Mode**

300000 A2.01

Ability to predict the impacts of Air Dryer and filter malfunctions on the Instrument Air System and based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operations.

This is a new in-plant JPM that will require the examinee to simulate setting the Service Air Dryer maximum sweep value to zero IAW 0AOP-20.0. This JPM is performed in the RCA.