

# Draft Submittal

(Pink Paper)

1. Written Exam Sample outlines

**WATTS BAR EXAM 2003-301  
50-390/2003-301**

**MAY 15, 2003**

Form ES-401-3

**Exam Level:** SRO

| Tier   | Group       | K/A Category Points |    |       |    |       |    |       |    |       |    |    | Point Total |
|--|-------------|---------------------|----|-------|----|-------|----|-------|----|-------|----|----|-------------|
|  |             | K1                  | K2 | K3    | K4 | K5    | K6 | A1    | A2 | A3    | A4 | G  |             |
| 1.<br><br>Emergency &<br>Abnormal<br>Plant<br>Evolutions | 1           | 4                   | 4  | 4     |    |       |    | 4     | 4  |       |    | 4  | 24          |
|  | 2           | 3                   | 3  | 2     |    |       |    | 2     | 3  |       |    | 3  | 16          |
|  | 3           | 0                   | 1  | 0     |    |       |    | 0     | 1  |       |    | 1  | 3           |
|  | Tier Totals | 7                   | 8  | 6     |    |       |    | 6     | 8  |       |    | 8  | 43          |
| 2.<br><br>Plant<br>Systems                               | 1           | 2                   | 2  | 2     | 2  | 2     | 1  | 2     | 2  | 1     | 1  | 2  | 19          |
|  | 2           | 1                   | 2  | 2     | 2  | 1     | 1  | 1     | 2  | 2     | 1  | 2  | 17          |
|  | 3           | 0                   | 1  | 0     | 0  | 0     | 1  | 0     | 0  | 1     | 0  | 1  | 4           |
|  | Tier Totals | 3                   | 5  | 4     | 4  | 3     | 3  | 3     | 4  | 4     | 2  | 5  | 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 teir (i.e., the "Tier Totals" in each K/A category shall not be less than two).

2. Actual point totals must match those specified in the table.

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

Form ES-401-3

| E/APE # | E/APE Name / Safety Function                                  | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|---|----|----|----|----|----|---|---|------|--------|
| 003     | Dropped Control Rod / 1                                       |    |    | X  |    |    |   | AK3.08 - Criteria for inoperable control rods   | 4.2  | 1      |
| 015     | Reactor Coolant Pump (RCP) Malfunctions / 4                   |    |    |    |    | X  |   | AA2.09 - When to secure RCPs on high stator temperatures  | 3.5  | 1      |
| 015     | Reactor Coolant Pump (RCP) Malfunctions / 4                   | X  |    |    |    |    |   | AK1.05 - Effects of unbalanced RCS flow on in-core average temperature, core imbalance, and quadrant power tilt                       | 3.3  | 1      |
| 017     | Reactor Coolant Pump (RCP) Malfunctions (Loss of RC Flow) / 4 |    |    |    |    |    | X | 2.4.8 - Knowledge of how the event-based emergency/abnormal operating procedures are used in conjunction with the symptom-based EOPs. | 3.7  | 1      |
| 017     | Reactor Coolant Pump (RCP) Malfunctions (Loss of RC Flow) / 4 |    |    | X  |    |    |   | AK3.07 - Ensuring that S/G levels are controlled properly for natural circulation enhancement   | 4.2  | 1      |
| 026     | Loss of Component Cooling Water (CCW) / 8                     |    |    |    |    |    | X | 2.4.11 - Knowledge of abnormal condition procedures.  | 3.6  | 1      |
| 029     | Anticipated Transient Without Scram (ATWS) / 1                |    | X  |    |    |    |   | EK2.06 - Breakers, relays, and disconnects  | 3.1* | 1      |
| 040     | Steam Line Rupture / 4  |    |    |    | X  |    |   | AA1.24 - Main steam header pressure gauges  | 3.8  | 1      |
| 051     | Loss of Condenser Vacuum / 4                                  |    |    |    |    | X  |   | AA2.02 - Conditions requiring reactor and/or turbine trip   | 4.1  | 1      |
| 051     | Loss of Condenser Vacuum / 4                                  |    |    |    | X  |    |   | AA1.04 - Rod position   | 2.5* | 1      |

Facility: Watts Bar Nuclear Plant

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

Form ES-401-3

| E/APE # | E/APE Name / Safety Function                   | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|--|----|----|----|----|----|---|---|------|--------|
| 057     | Loss of Vital AC Electrical Instrument Bus / 6 |    |    |    |    | X  |   | AA2.12 - PZR level controller, instrumentation, and heater indications  | 3.7  | 1      |
| 062     | Loss of Nuclear Service Water / 4              |    |    |    |    | X  |   | AA2.03 - The valve lineups necessary to restart the SWS while bypassing the portion of the system causing the abnormal condition  | 2.9  | 1      |
| 067     | Plant Fire on Site / 9                         |    |    |    |    |    | X | 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. | 3.3  | 1      |
| 067     | Plant Fire on Site / 9                         |    |    | X  |    |    |   | AK3.02 - Steps called out in the site fire protection plan, FPS manual, and fire zone manual  | 3.3  | 1      |
| 068     | Control Room Evacuation / 8                    |    | X  |    |    |    |   | AK2.03 - Controllers and positioners  | 3.1  | 1      |
| 069     | Loss of Containment Integrity / 5              | X  |    |    |    |    |   | AK1.01 - Effect of pressure on leak rate  | 3.1  | 1      |
| 074     | Inadequate Core Cooling / 4                    | X  |    |    |    |    |   | EK1.08 - Definition of subcooled liquid   | 3.1  | 1      |
| 076     | High Reactor Coolant Activity / 9              |    |    |    | X  |    |   | AA1.04 - Failed fuel-monitoring equipment   | 3.4  | 1      |

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

Form ES-401-3

| E/APE # | E/APE Name / Safety Function   | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|--|----|----|----|----|----|---|---|------|--------|
| E01     | Rediagnosis / 3  |    | X  |    |    |    |   | EK2.2 - Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility | 3.8  | 1      |
| E01     | Rediagnosis / 3  |    |    |    | X  |    |   | EA1.3 - Desired operating results during abnormal and emergency situations  | 3.8  | 1      |
| E02     | SI Termination / 3   |    |    | X  |    |    |   | EK3.3 - Manipulation of controls required to obtain desired operating results during abnormal, and emergency situations   | 3.9  | 1      |
| E06     | Degraded Core Cooling / 4  |    |    |    |    |    | X | 2.4.10 - Knowledge of annunciator response procedures.  | 3.1  | 1      |
| E08     | Pressurized Thermal Shock / 4  | X  |    |    |    |    |   | EK1.3 - Annunciators and conditions indicating signals, and remedial actions associated with the Pressurized Thermal Shock  | 4.0  | 1      |
| E10     | Natural Circulation with Steam Void in Vessel with/without RVLIS / 4 |    | X  |    |    |    |   | EK2.2 - Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility | 3.9  | 1      |

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

Group Point Total: 24

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

Form ES-401-3

| E/APE # | E/APE Name / Safety Function   | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|--|----|----|----|----|----|---|--|------|--------|
| 008     | Pressurizer (PZR) Vapor Space Accident (Relief Valve Stuck Open) / 3 |    |    | X  |    |    |   | AK3.01 - Why PZR level may come back on scale if RCS is saturated  | 4.4  | 1      |
| 022     | Loss of Reactor Coolant Makeup / 2                                   |    |    |    | X  |    |   | AA1.08 - VCT level   | 3.3  | 1      |
| 025     | Loss of Residual Heat Removal System (RHRS) / 4                      |    |    |    |    | X  |   | AA2.07 - Pump cavitation<br>‡  | 3.7  | 1      |
| 025     | Loss of Residual Heat Removal System (RHRS) / 4                      |    | X  |    |    |    |   | AK2.01 - RHR heat exchangers   | 2.9  | 1      |
| 027     | Pressurizer Pressure Control (PZR PCS) Malfunction / 3               | X  |    |    |    |    |   | AK1.03 - Latent heat of vaporization/condensation  | 2.9  | 1      |
| 027     | Pressurizer Pressure Control (PZR PCS) Malfunction / 3               |    | X  |    |    |    |   | AK2.03 - Controllers and positioners   | 2.8  | 1      |
| 032     | Loss of Source Range Nuclear Instrumentation / 7                     |    |    |    |    | X  |   | AA2.09 - Effect of improper HV setting   | 2.9  | 1      |
| 038     | Steam Generator Tube Rupture (SGTR) / 3                              |    |    |    | X  |    |   | EA1.08 - Core cooling monitor  | 3.8* | 1      |
| 038     | Steam Generator Tube Rupture (SGTR) / 3                              |    |    |    |    |    | X | 2.4.2 - Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions. Note: The issue of setpoints and automatic safety features is not specifically covered in the systems sections. | 4.1  | 1      |
| 054     | Loss of Main Feedwater (MFW) / 4                                     |    |    |    |    | X  |   | AA2.08 - Steam flow-feed trend recorder  | 3.3* | 1      |

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Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2

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| E/APE # | E/APE Name / Safety Function                      | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|---|----|----|----|----|----|---|--|------|--------|
| 060     | Accidental Gaseous Radwaste Release / 9           | X  |    |    |    |    |   | AK1.02 - Biological effects on humans of the various types of radiation, exposure levels that are acceptable for personnel in a nuclear reactor power plant; the units used for radiation intensity measurements and for radiation exposure levels | 3.1* | 1      |
| 060     | Accidental Gaseous Radwaste Release / 9           |    |    | X  |    |    |   | AK3.02 - Isolation of the auxiliary building ventilation   | 3.5* | 1      |
| 061     | Area Radiation Monitoring (ARM) System Alarms / 7 |    |    |    |    |    | X | 2.3.8 - Knowledge of the process for performing a planned gaseous radioactive release.   | 3.2  | 1      |
| 061     | Area Radiation Monitoring (ARM) System Alarms / 7 |    | X  |    |    |    |   | AK2.01 - Detectors at each ARM system location   | 2.6* | 1      |
| E03     | LOCA Cooldown and Depressurization / 4            | X  |    |    |    |    |   | EK1.1 - Components, capacity, and function of emergency systems  | 4.0  | 1      |
| E05     | Loss of Secondary Heat Sink / 4                   |    |    |    |    |    | X | 2.4.41 - Knowledge of the emergency action level thresholds and classifications.   | 4.1  | 1      |

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

Group Point Total: 16

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

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| E/APE # | E/APE Name / Safety Function                    | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|---|----|----|----|----|----|---|--|------|--------|
| 028     | Pressurizer (PZR) Level Control Malfunction / 2 |    |    |    |    | X  |   | AA2.11 - Leak in PZR   | 3.6  | 1      |
| 056     | Loss of Offsite Power / 6                       |    |    |    |    |    | X | 2.4.21 - Knowledge of the parameters and logic used to assess the status of safety functions including: 1. Reactivity control; 2. Core cooling and heat removal; 3. Reactor coolant system integrity; 4. Containment conditions; 5. Radioactivity release control. | 4.3  | 1      |
| E13     | Steam Generator Overpressure / 4                |    | X  |    |    |    |   | EK2.1 - Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features  | 3.1  | 1      |

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

Group Point Total: 3



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Plant Systems - Tier 2 / Group 1

Form ES-401-3

| Sys/Ev # | System / Evolution Name                                 | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|---|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 001      | Control Rod Drive System / 1                            |    |    |    |    |    |    |    | X  |    |    |   | A2.16 - Possible causes of mismatched control rods  | 3.8  | 1      |
| 003      | Reactor Coolant Pump System (RCPS) / 4                  |    |    |    |    |    | X  |    |    |    |    |   | K6.02 - RCP seals and seal water supply   | 3.1  | 1      |
| 004      | Chemical and Volume Control System (CVCS) / 1           |    |    |    | X  |    |    |    |    |    |    |   | K4.08 - Hydrogen control in RCS   | 3.2  | 1      |
| 004      | Chemical and Volume Control System (CVCS) / 1           |    |    |    |    |    |    | X  |    |    |    |   | A1.04 - PZR pressure and level  | 4.1  | 1      |
| 013      | Engineered Safety Features Actuation System (ESFAS) / 2 |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - ESFAS/safeguards equipment control  | 3.8  | 1      |
| 014      | Rod Position Indication System (RPIS) / 1               |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - Reasons for differences between RPIS and step counter   | 3.0  | 1      |
| 025      | Ice Condenser System / 5                                |    |    |    |    |    |    |    |    |    |    | X | 2.1.14 - Knowledge of system status criteria which require the notification of plant personnel.   | 3.3  | 1      |
| 025      | Ice Condenser System / 5                                |    |    | X  |    |    |    |    |    |    |    |   | K3.01 - Containment   | 3.8* | 1      |
| 056      | Condensate System / 4                                   |    |    |    |    |    |    |    | X  |    |    |   | A2.04 - Loss of condensate pumps  | 2.8* | 1      |
| 059      | Main Feedwater (MFW) System / 4                         |    |    |    |    |    |    |    |    |    |    | X | 2.2.9 - Knowledge of the process for determining if the proposed change, test or experiment increases the probability of occurrence or consequences of an accident during the change, test or experiment. | 3.3  | 1      |

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Plant Systems - Tier 2 / Group 1

Form ES-401-3

| Sys/Ev # | System / Evolution Name                          | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 059      | Main Feedwater (MFW) System / 4                  |    |    |    |    |    |    |    |    | X  |    |   | A3.04 - Turbine driven feed pump                           | 2.6* | 1      |
| 061      | Auxiliary / Emergency Feedwater (AFW) System / 4 |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - AFW system MOVs                                    | 3.3  | 1      |
| 063      | D.C. Electrical Distribution System / 6          |    |    |    |    |    |    |    |    |    | X  |   | A4.02 - Battery voltage indicator                          | 2.9  | 1      |
| 068      | Liquid Radwaste System (LRS) / 9                 | X  |    |    |    |    |    |    |    |    |    |   | K1.07 - Sources of liquid wastes for LRS                   | 2.9  | 1      |
| 068      | Liquid Radwaste System (LRS) / 9                 |    |    |    |    | X  |    |    |    |    |    |   | K5.03 - Units of radiation, dose, and dose rate            | 2.6  | 1      |
| 071      | Waste Gas Disposal System (WGDS) / 9             |    |    | X  |    |    |    |    |    |    |    |   | K3.04 - Ventilation system                                 | 2.9  | 1      |
| 071      | Waste Gas Disposal System (WGDS) / 9             |    |    |    | X  |    |    |    |    |    |    |   | K4.06 - Sampling and monitoring of waste gas release tanks | 3.5* | 1      |
| 072      | Area Radiation Monitoring (ARM) System / 7       | X  |    |    |    |    |    |    |    |    |    |   | K1.02 - Containment isolation                              | 3.9  | 1      |
| 072      | Area Radiation Monitoring (ARM) System / 7       |    |    |    |    |    |    | X  |    |    |    |   | A1.01 - Radiation levels                                   | 3.6  | 1      |

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

Group Point Total: 19

Facility: Watts Bar Nuclear Plant

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Plant Systems - Tier 2 / Group 2

Form ES-401-3

| Sys/Ev # | System / Evolution Name                                 | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|---|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 002      | Reactor Coolant System (RCS) / 2                        |    |    |    |    |    |    |    |    |    | X  |   | A4.04 - The filling/drainage of LPI pumps during refueling  | 2.6  | 1      |
| 011      | Pressurizer Level Control System (PZR LCS) / 2          |    |    |    | X  |    |    |    |    |    |    |   | K4.07 - Cold-calibrated channel   | 3.2  | 1      |
| 012      | Reactor Protection System / 7                           |    |    |    | X  |    |    |    |    |    |    |   | K4.05 - Spurious trip protection  | 2.9  | 1      |
| 016      | Non-Nuclear Instrumentation System (NNIS) / 7           |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - Separation of control and protection circuits   | 2.8* | 1      |
| 028      | Hydrogen Recombiner and Purge Control System (HRPS) / 5 |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - Hydrogen recombiners  | 2.8* | 1      |
| 029      | Containment Purge System (CPS) / 8                      |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - CPS isolation   | 4.0  | 1      |
| 034      | Fuel Handling Equipment System (FHES) / 8               |    |    |    |    |    |    |    |    |    |    | X | 2.2.6 - Knowledge of the process for making changes in procedures as described in the safety analysis report. | 3.3  | 1      |
| 035      | Steam Generator System (S/GS) / 4                       |    |    |    |    |    |    |    |    |    |    | X | 2.4.22 - Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.       | 4.0  | 1      |
| 055      | Condenser Air Removal System (CARS) / 4                 | X  |    |    |    |    |    |    |    |    |    |   | K1.06 - PRM system  | 2.6  | 1      |
| 062      | A.C. Electrical Distribution System / 6                 |    |    |    |    |    |    |    | X  |    |    |   | A2.07 - Consequences of opening a disconnect under load   | 3.4* | 1      |

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Plant Systems - Tier 2 / Group 2

Form ES-401-3

| Sys/Ev # | System / Evolution Name                       | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|---|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 073      | Process Radiation Monitoring (PRM) System / 7 |    |    |    |    |    |    | X  |    |    |    |   | A1.01 - Radiation levels   | 3.5  | 1      |
| 073      | Process Radiation Monitoring (PRM) System / 7 |    |    |    |    |    |    |    | X  |    |    |   | A2.02 - Detector failure   | 3.2  | 1      |
| 075      | Circulating Water System / 8                  |    | X  |    |    |    |    |    |    |    |    |   | K2.03 - Emergency/essential SWS pumps                            | 2.7* | 1      |
| 075      | Circulating Water System / 8                  |    |    | X  |    |    |    |    |    |    |    |   | K3.07 - ESFAS  | 3.5* | 1      |
| 086      | Fire Protection System (FPS) / 8              |    |    |    |    |    | X  |    |    |    |    |   | K6.04 - Fire, smoke, and heat detectors                          | 2.9  | 1      |
| 086      | Fire Protection System (FPS) / 8              |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - Starting mechanisms of fire water pumps                  | 3.3  | 1      |
| 103      | Containment System / 5                        |    |    | X  |    |    |    |    |    |    |    |   | K3.03 - Loss of containment integrity under refueling operations | 4.1  | 1      |

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

Group Point Total: 17

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Plant Systems - Tier 2 / Group 3

Form ES-401-3

| Sys/Ev # | System / Evolution Name                                | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 008      | Component Cooling Water System (CCWS) / 8              |    |    |    |    |    |    |    |    |    |    | X | 2.1.12 - Ability to apply technical specifications for a system. | 4.0  | 1      |
| 041      | Steam Dump System (SDS) and Turbine Bypass Control / 4 |    |    |    |    |    | X  |    |    |    |    |   | K6.03 - Controller and positioners, including ICS, S/G, CRDS     | 2.9  | 1      |
| 076      | Service Water System (SWS) / 4                         |    | X  |    |    |    |    |    |    |    |    |   | K2.04 - Reactor building closed cooling water                    | 2.6* | 1      |
| 078      | Instrument Air System (IAS) / 8                        |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - Air pressure   | 3.2  | 1      |

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

Group Point Total: 4

## PWR SRO Examination Outline

Form ES-401-5

**Facility:** Watts Bar Nuclear Plant

| Generic Category             | KA     | KA Topic  | Imp.     | Points |
|------------------------------|--------|---|----------|--------|
| <b>Conduct of Operations</b> | 2.1.3  | Knowledge of shift turnover practices.  | 3.4      | 1      |
|                              | 2.1.7  | Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation. | 4.4      | 1      |
|                              | 2.1.25 | Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.                        | 3.1      | 1      |
|                              | 2.1.34 | Ability to maintain primary and secondary plant chemistry within allowable limits.  | 2.9      | 1      |
| <b>Category Total:</b>       |        |   | <b>4</b> |        |
| <b>Equipment Control</b>     | 2.2.20 | Knowledge of the process for managing troubleshooting activities.   | 3.3      | 1      |
|                              | 2.2.28 | Knowledge of new and spent fuel movement procedures.  | 3.5      | 1      |
|                              | 2.2.31 | Knowledge of procedures and limitations involved in initial core loading.   | 2.9*     | 1      |
|                              | 2.2.33 | Knowledge of control rod programming.   | 2.9      | 1      |
| <b>Category Total:</b>       |        |   | <b>4</b> |        |
| <b>Radiation Control</b>     | 2.3.2  | Knowledge of facility ALARA program.  | 2.9      | 1      |
|                              | 2.3.3  | Knowledge of SRO responsibilities for auxiliary systems that are outside the control room (e.g., waste disposal and handling systems).                    | 2.9      | 1      |
|                              | 2.3.9  | Knowledge of the process for performing a containment purge.  | 3.4      | 1      |
|                              | 2.3.10 | Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.   | 3.3      | 1      |
| <b>Category Total:</b>       |        |   | <b>4</b> |        |

## PWR SRO Examination Outline

Form ES-401-5

**Facility:** Watts Bar Nuclear Plant

| Generic Category          | KA     | KA Topic  | Imp. | Points |
|---------------------------|--------|---|------|--------|
| Emergency Procedures/Plan | 2.4.20 | Knowledge of operational implications of EOP warnings, cautions, and notes.   | 4.0  | 1      |
|                           | 2.4.21 | Knowledge of the parameters and logic used to assess the status of safety functions including: 1. Reactivity control; 2. Core cooling and heat removal; 3. Reactor coolant system integrity; 4. Containment conditions; 5. Radioactivity release control. | 4.3  | 1      |
|                           | 2.4.27 | Knowledge of fire in the plant procedure.   | 3.5  | 1      |
|                           | 2.4.29 | Knowledge of the emergency plan.  | 4.0  | 1      |
|                           | 2.4.50 | Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.  | 3.3  | 1      |

Category Total: 5

Generic Total: 17

**Written Examination Statistics:**

| Description            | No. Questions |
|------------------------|---------------|
| SRO Only               | 31            |
| Knowledge/Fundamental  | 33            |
| Comprehensive/Analysis | 67            |
| Bank Questions         | 56            |
| Modified Questions     | 10            |
| New Questions          | 34            |