

**INITIAL SUBMITTAL OF WRITTEN EXAMINATION**

**FOR CLINTON INITIAL EXAMINATION - JULY 2001**

Facility: Clinton Power Station

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

| E/APE # | E/APE Name / Safety Function               | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|--|----|----|----|----|----|---|---|------|--------|
| 295003  | Partial or Complete Loss of A.C. Power / 6 |    |    | X  |    |    |   | AK3.02 - Selective tripping                                 | 3.1  | 1      |
| 295003  | Partial or Complete Loss of A.C. Power / 6 |    |    |    |    | X  |   | AA2.04 - System lineups                                     | 3.7  | 1      |
| 295006  | SCRAM / 1                                  |    |    | X  |    |    |   | AK3.01 - Reactor water level response                       | 3.9  | 1      |
| 295007  | High Reactor Pressure / 3                  | X  |    |    |    |    |   | AK1.01 - Pump shutoff head                                  | 3.2  | 1      |
| 295007  | High Reactor Pressure / 3                  |    |    | X  |    |    |   | AK3.03 - RCIC operation: Plant-Specific                     | 3.5  | 1      |
| 295009  | Low Reactor Water Level / 2                |    | X  |    |    |    |   | AK2.02 - Reactor water level control                        | 3.9  | 1      |
| 295014  | Inadvertent Reactivity Addition / 1        |    |    |    |    | X  |   | AA2.02 - Reactor period                                     | 3.9  | 1      |
| 295014  | Inadvertent Reactivity Addition / 1        |    |    |    |    | X  |   | AA2.01 - Reactor power                                      | 4.2* | 1      |
| 295015  | Incomplete SCRAM / 1                       |    | X  |    |    |    |   | AK2.03 - Rod control and information system: Plant-Specific | 3.6  | 1      |
| 295015  | Incomplete SCRAM / 1                       |    |    | X  |    |    |   | AK3.01 - Bypassing rod insertion blocks                     | 3.7  | 1      |
| 295016  | Control Room Abandonment / 7               |    |    |    |    | X  |   | AA2.01 - Reactor power                                      | 4.1* | 1      |
| 295017  | High Off-Site Release Rate / 9             |    |    |    | X  |    |   | AA1.07 - Process radiation monitoring system                | 3.6  | 1      |
| 295023  | Refueling Accidents / 8                    | X  |    |    |    |    |   | AK1.01 - Radiation exposure hazards                         | 4.1  | 1      |
| 295023  | Refueling Accidents / 8                    |    |    |    | X  |    |   | AA1.02 - Fuel pool cooling and cleanup system               | 3.1  | 1      |
| 295024  | High Drywell Pressure / 5                  | X  |    |    |    |    |   | EK1.02 - Containment building integrity: Mark-III           | 4.1  | 1      |

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| E/APE # | E/APE Name / Safety Function  | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|---|----|----|----|----|----|---|--|------|--------|
| 295025  | High Reactor Pressure / 3   |    |    |    |    |    | X | 2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. | 4.0  | 1      |
| 295025  | High Reactor Pressure / 3   |    | X  |    |    |    |   | EK2.08 - Reactor/turbine pressure regulating system: Plant-Specific  | 3.7  | 1      |
| 295026  | Suppression Pool High Water Temperature / 5                                   |    |    |    |    | X  |   | EA2.03 - Reactor pressure  | 4.0  | 1      |
| 295026  | Suppression Pool High Water Temperature / 5                                   |    |    |    |    |    | X | 2.1.14 - Knowledge of system status criteria which require the notification of plant personnel.  | 3.3  | 1      |
| 295027  | High Containment Temperature (Mark III Containment Only) / 5                  | X  |    |    |    |    |   | EK1.02 - Reactor water level measurement: Mark-III   | 3.2  | 1      |
| 295027  | High Containment Temperature (Mark III Containment Only) / 5                  |    |    |    |    | X  |   | EA2.04 - Containment radiation levels: Mark-III  | 3.7  | 1      |
| 295030  | Low Suppression Pool Water Level / 5  |    |    |    |    | X  |   | EA2.02 - Suppression pool temperature  | 3.9  | 1      |
| 295030  | Low Suppression Pool Water Level / 5  |    | X  |    |    |    |   | EK2.03 - LPCS  | 3.9  | 1      |
| 295031  | Reactor Low Water Level / 2   |    |    |    |    |    | X | 2.4.11 - Knowledge of abnormal condition procedures.   | 3.6  | 1      |
| 295037  | SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1 |    |    |    | X  |    |   | EA1.04 - SBLC  | 4.5* | 1      |
| 295038  | High Off-Site Release Rate / 9  |    |    |    |    |    | X | 2.4.10 - Knowledge of annunciator response procedures.   | 3.1  | 1      |

K/A Category Totals: 4 4 4 3 7 4

Group Point Total: 26

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ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 Form ES-401-1

| E/APE # | E/APE Name / Safety Function                                 | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|--|----|----|----|----|----|---|---|------|--------|
| 295002  | Loss of Main Condenser Vacuum / 3                            |    | X  |    |    |    |   | AK2.07 - Offgas system  | 3.1  | 1      |
| 295004  | Partial or Complete Loss of D.C. Power / 6                   | X  |    |    |    |    |   | AK1.04 - Effect of battery discharge rate on capacity   | 2.9  | 1      |
| 295005  | Main Turbine Generator Trip / 3                              |    |    |    |    | X  |   | AA2.04 - Reactor pressure   | 3.8  | 1      |
| 295008  | High Reactor Water Level / 2                                 |    |    |    |    |    | X | 2.1.14 - Knowledge of system status criteria which require the notification of plant personnel. | 3.3  | 1      |
| 295008  | High Reactor Water Level / 2                                 |    |    | X  |    |    |   | AK3.07 - HPCS isolation: Plant-Specific   | 3.3  | 1      |
| 295011  | High Containment Temperature (Mark III Containment Only) / 5 |    |    |    |    |    | X | 2.4.11 - Knowledge of abnormal condition procedures.  | 3.6  | 1      |
| 295012  | High Drywell Temperature / 5                                 |    |    |    | X  |    |   | AA1.01 - Drywell ventilation system   | 3.6  | 1      |
| 295019  | Partial or Complete Loss of Instrument Air / 8               |    |    |    | X  |    |   | AA1.01 - Backup air supply  | 3.3  | 1      |
| 295020  | Inadvertent Containment Isolation / 5                        | X  |    |    |    |    |   | AK1.05 - Loss of drywell/containment cooling  | 3.6  | 1      |
| 295020  | Inadvertent Containment Isolation / 5                        |    | X  |    |    |    |   | AK2.10 - Drywell equipment/floor drain sumps  | 3.1  | 1      |
| 295021  | Loss of Shutdown Cooling / 4                                 |    |    |    | X  |    |   | AA1.01 - Reactor water cleanup system   | 3.4  | 1      |
| 295032  | High Secondary Containment Area Temperature / 5              |    | X  |    |    |    |   | EK2.04 - PCIS/NSSSS   | 3.8  | 1      |
| 295033  | High Secondary Containment Area Radiation Levels / 9         |    |    |    |    | X  |   | EA2.03 - †Cause of high area radiation  | 4.2  | 1      |
| 295034  | Secondary Containment Ventilation High Radiation / 9         | X  |    |    |    |    |   | EK1.02 - †Radiation releases  | 4.4* | 1      |

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# BWR SRC Examination Outline

Printed: 05/17/11

ES - 401      Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2      Form ES-401-1

| E/APE # | E/APE Name / Safety Function                         | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|--|----|----|----|----|----|---|---|------|--------|
| 295036  | Secondary Containment High Sump/Area Water Level / 5 |    |    |    |    | X  |   | EA2.02 - Water level in the affected area                                   | 3.1  | 1      |
| 295036  | Secondary Containment High Sump/Area Water Level / 5 |    |    |    |    |    | X | 2.4.10 - Knowledge of annunciator response procedures.                      | 3.1  | 1      |
| 600000  | Plant Fire On Site / 8                               |    |    | X  |    |    |   | AK3.04 - Actions contained in the abnormal procedure for plant fire on site | 3.4  | 1      |

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

Group Point Total:    17

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ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-1

| Sys/Ev # | System / Evolution Name  | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 209002   | High Pressure Core Spray System (HPCS) / 2                       |    |    |    |    |    |    |    |    |    |    | X | 2.4.49 - Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. | 4.0  | 1      |
| 211000   | Standby Liquid Control System / 1                                |    |    |    |    |    |    |    |    |    |    | X | 2.1.32 - Ability to explain and apply system limits and precautions.  | 3.8  | 1      |
| 211000   | Standby Liquid Control System / 1                                |    |    |    |    |    |    |    |    |    |    | X | 2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.      | 4.0  | 1      |
| 212000   | Reactor Protection System / 7                                    |    |    |    |    |    |    |    |    | X  |    |   | A3.05 - SCRAM instrument volume level   | 3.9  | 1      |
| 215004   | Source Range Monitor (SRM) System / 7                            |    |    |    |    |    |    |    |    |    | X  |   | A4.03 - CRT displays: Plant-Specific  | 2.7  | 1      |
| 215004   | Source Range Monitor (SRM) System / 7                            | X  |    |    |    |    |    |    |    |    |    |   | K1.01 - Reactor protection system   | 3.7  | 1      |
| 215005   | Average Power Range Monitor/Local Power Range Monitor System / 7 |    |    | X  |    |    |    |    |    |    |    |   | K3.08 - †core thermal calculations  | 3.4  | 1      |
| 216000   | Nuclear Boiler Instrumentation / 7                               | X  |    |    |    |    |    |    |    |    |    |   | K1.21 - SPDS/ERIS/CRIDS/GDS: Plant-Specific   | 2.9* | 1      |
| 216000   | Nuclear Boiler Instrumentation / 7                               |    |    | X  |    |    |    |    |    |    |    |   | K3.10 - Recirculation flow control system   | 3.3  | 1      |
| 218000   | Automatic Depressurization System / 3                            |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - ADS logic operation   | 3.8  | 1      |

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Plant Systems - Tier 2 / Group 1

Form ES-401-1

| Sys/Ev # | System / Evolution Name  | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 223001   | Primary Containment System and Auxiliaries / 5                         |    | X  |    |    |    |    |    |    |    |    |   | K2.09 - Drywell cooling fans: Plant-Specific   | 2.9* | 1      |
| 223001   | Primary Containment System and Auxiliaries / 5                         |    |    |    |    | X  |    |    |    |    |    |   | K5.10 - Hydrogen combustibility versus hydrogen concentration and oxygen concentration | 3.1  | 1      |
| 223002   | Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5 |    |    |    |    |    |    |    |    | X  |    |   | A3.03 - SPDS/ERIS/CRIDS/GDS: Plant-Specific  | 2.8* | 1      |
| 223002   | Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5 |    |    |    | X  |    |    |    |    |    |    |   | K4.01 - Redundancy   | 3.2  | 1      |
| 226001   | RHR/LPCI: Containment Spray System Mode / 5                            |    | X  |    |    |    |    |    |    |    |    |   | K2.02 - Pumps  | 2.9* | 1      |
| 239002   | Relief/Safety Valves / 3   |    |    |    |    |    |    | X  |    |    |    |   | A1.04 - Reactor pressure   | 3.8  | 1      |
| 239002   | Relief/Safety Valves / 3   |    |    |    |    |    | X  |    |    |    |    |   | K6.04 - D.C. power: Plant-Specific   | 3.2  | 1      |
| 241000   | Reactor/Turbine Pressure Regulating System / 3                         |    |    |    |    |    |    |    | X  |    |    |   | A2.05 - Failed open/closed main stop valve(s)  | 3.9  | 1      |
| 261000   | Standby Gas Treatment System / 9                                       |    |    |    |    |    |    |    |    |    |    | X | 2.4.10 - Knowledge of annunciator response procedures.                                 | 3.1  | 1      |
| 261000   | Standby Gas Treatment System / 9                                       |    |    |    |    |    | X  |    |    |    |    |   | K6.09 - Primary containment high pressure: Plant-Specific                              | 3.3  | 1      |

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Plant Systems - Tier 2 / Group 1

Form ES-401-1

| Sys/Ev # | System / Evolution Name               | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|---------------------------------------|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 264000   | Emergency Generators (Diesel/Jet) / 6 |    |    |    |    |    |    |    | X  |    |    |   | A2.09 - Loss of A.C. power                                      | 4.1  | 1      |
| 290001   | Secondary Containment / 5             |    |    |    |    |    |    | X  |    |    |    |   | A1.01 - System lineups  | 3.1  | 1      |
| 290001   | Secondary Containment / 5             |    |    |    | X  |    |    |    |    |    |    |   | K4.02 - Protection against over pressurization:<br>Plant-System | 3.5  | 1      |

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

Group Point Total: 23



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## Plant Systems - Tier 2 / Group 2

Form ES-401-1

| Sys/Ev # | System / Evolution Name                                 | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|---|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 204000   | Reactor Water Cleanup System / 2                        |    |    |    |    | X  |    |    |    |    |    |   | K5.07 - Conductivity measurement  | 2.6  | 1      |
| 205000   | Shutdown Cooling System (RHR Shutdown Cooling Mode) / 4 | X  |    |    |    |    |    |    |    |    |    |   | K1.02 - Reactor water level   | 3.6  | 1      |
| 205000   | Shutdown Cooling System (RHR Shutdown Cooling Mode) / 4 |    |    | X  |    |    |    |    |    |    |    |   | K3.01 - Reactor pressure  | 3.3  | 1      |
| 215003   | Intermediate Range Monitor (IRM) System / 7             |    |    |    |    |    |    | X  |    |    |    |   | A1.03 - RPS status  | 3.7  | 1      |
| 215003   | Intermediate Range Monitor (IRM) System / 7             |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - IRM channels/detectors  | 2.7  | 1      |
| 219000   | RHR/LPCI: Torus/Suppression Pool Cooling Mode / 5       |    |    |    |    |    |    |    |    |    |    | X | 2.4.45 - Ability to prioritize and interpret the significance of each annunciator or alarm. | 3.6  | 1      |
| 239003   | MSIV Leakage Control System / 9                         |    |    |    |    |    | X  |    |    |    |    |   | K6.01 - A.C. electrical distribution: BWR-4, 5, 6(P-Spec)                                   | 3.0  | 1      |
| 259001   | Reactor Feedwater System / 2                            |    |    |    |    |    |    |    |    |    |    | X | 2.1.32 - Ability to explain and apply system limits and precautions.                        | 3.8  | 1      |
| 262002   | Uninterruptable Power Supply (A.C./D.C.) / 6            |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - Transfer from preferred to alternate source   | 3.1  | 1      |
| 272000   | Radiation Monitoring System / 7                         |    |    |    |    |    |    |    |    |    |    | X | 2.4.10 - Knowledge of annunciator response procedures.                                      | 3.1  | 1      |
| 286000   | Fire Protection System / 8                              |    |    |    |    |    |    |    |    |    | X  |   | A4.04 - Fire main pressure: Plant-Specific  | 2.8  | 1      |

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Plant Systems - Tier 2 / Group 2

Form ES-401-1

| Sys/Ev # | System / Evolution Name    | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic                         | Imp. | Points |
|----------|----------------------------|----|----|----|----|----|----|----|----|----|----|---|----------------------------------|------|--------|
| 286000   | Fire Protection System / 8 |    |    |    | X  |    |    |    |    |    |    |   | K4.07 - Diesel engine protection | 3.3  | 1      |
| 290003   | Control Room HVAC / 9      |    |    |    |    |    | X  |    |    |    |    |   | K6.01 - Electrical power         | 2.9  | 1      |

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

Group Point Total: 13

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Plant Systems - Tier 2 / Group 3

Form ES-401-1

| Sys/Ev # | System / Evolution Name             | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|-------------------------------------|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 201003   | Control Rod and Drive Mechanism / 1 |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - Hydraulics                                   | 2.7  | 1      |
| 233000   | Fuel Pool Cooling and Clean-up / 9  |    |    |    |    |    |    |    |    |    |    | X | 2.4.11 - Knowledge of abnormal condition procedures. | 3.6  | 1      |
| 239001   | Main and Reheat Steam System / 3    |    |    | X  |    |    |    |    |    |    |    |   | K3.08 - Decay heat removal                           | 3.5  | 1      |
| 268000   | Radwaste / 9                        |    |    |    |    |    |    |    | X  |    |    |   | A2.01 - System rupture                               | 3.5  | 1      |

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

Group Point Total: 4

## BWR SRO Examination Outline

Form ES-401-5

Facility: Clinton Power Station

| Generic Category             | KA     | KA Topic  | Imp. | Points   |
|------------------------------|--------|---|------|----------|
| <b>Conduct of Operations</b> | 2.1.11 | Knowledge of less than one hour technical specification action statements for systems.                      | 3.8  | 1        |
|                              | 2.1.14 | Knowledge of system status criteria which require the notification of plant personnel.                      | 3.3  | 1        |
|                              | 2.1.4  | Knowledge of shift staffing requirements.   | 3.4  | 1        |
|                              | 2.1.22 | Ability to determine Mode of Operation.   | 3.3  | 1        |
|                              | 2.1.8  | Ability to coordinate personnel activities outside the control room.  | 3.6  | 1        |
| <b>Category Total:</b>       |        |   |      | <b>5</b> |
| <b>Equipment Control</b>     | 2.2.25 | Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.    | 3.7  | 1        |
|                              | 2.2.5  | Knowledge of the process for making changes in the facility as described in the safety analysis report.     | 2.7  | 1        |
|                              | 2.2.11 | Knowledge of the process for controlling temporary changes.   | 3.4* | 1        |
|                              | 2.2.28 | Knowledge of new and spent fuel movement procedures.  | 3.5  | 1        |
| <b>Category Total:</b>       |        |   |      | <b>4</b> |
| <b>Radiation Control</b>     | 2.3.1  | Knowledge of 10 CFR 20 and related facility radiation control requirements.                                 | 3.0  | 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        |
|                              | 2.3.2  | Knowledge of facility ALARA program.  | 2.9  | 1        |
| <b>Category Total:</b>       |        |   |      | <b>4</b> |

## BWR SRO Examination Outline

Form ES-401-5

Facility: Clinton Power Station

| Generic Category | KA     | KA Topic   | Imp. | Points |
|------------------|--------|--|------|--------|
| Emergency Plan   | 2.4.36 | Knowledge of chemistry / health physics tasks during emergency operations.                     | 2.8  | 1      |
|                  | 2.4.22 | Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations. | 4.0  | 1      |
|                  | 2.4.25 | Knowledge of fire protection procedures.   | 3.4  | 1      |
|                  | 2.4.12 | Knowledge of general operating crew responsibilities during emergency operations.              | 3.9  | 1      |

Category Total: 4

Generic Total: 17

**Facility:** Clinton Power Station

Form ES-401-1

**Exam Date:** 07/16/2001**Exam Level:** SRO

| Tier  | Group       | K/A Category Points |    |    |       |    |       |    |       |    |       |   | Point Total |
|---|-------------|---------------------|----|----|-------|----|-------|----|-------|----|-------|---|-------------|
|   |             | K1                  | K2 | K3 | K4    | K5 | K6    | A1 | A2    | A3 | A4    | G |             |
| 1.<br>Emergency & Abnormal Plant Evolutions | 1           | 4                   | 4  | 4  |       |    |       | 3  | 7     |    |       | 4 | 26          |
|   | 2           | 3                   | 3  | 2  |       |    |       | 3  | 3     |    |       | 3 | 17          |
|   | Tier Totals | 7                   | 7  | 6  |       |    |       | 6  | 10    |    |       | 7 | 43          |
|   |             |                     |    |    |       |    |       |    |       |    |       |   |             |
| 2.<br>Plant Systems                         | 1           | 2                   | 2  | 2  | 2     | 2  | 2     | 2  | 2     | 2  | 1     | 4 | 23          |
|   | 2           | 1                   | 1  | 1  | 1     | 1  | 2     | 1  | 0     | 1  | 1     | 3 | 13          |
|   | 3           | 0                   | 0  | 1  | 0     | 1  | 0     | 0  | 1     | 0  | 0     | 1 | 4           |
|   | Tier Totals | 3                   | 3  | 4  | 3     | 4  | 4     | 3  | 3     | 3  | 2     | 8 | 40          |
| 3. Generic Knowledge And Abilities          |             |                     |    |    | Cat 1 |    | Cat 2 |    | Cat 3 |    | Cat 4 |   |             |
|   |             |                     |    |    | 5     |    | 4     |    | 4     |    | 4     |   | 17          |

**Note:**

1. Attempt to distribute topics among all K/A Categories; select at least one topic from every K/A category within each tier.
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.

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1

Form ES-401-2

| E/APE # | E/APE Name / Safety Function   | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|--|----|----|----|----|----|---|--|------|--------|
| 295006  | SCRAM / 1  |    |    | X  |    |    |   | AK3.01 - Reactor water level response                                  | 3.8  | 1      |
| 295007  | High Reactor Pressure / 3  | X  |    |    |    |    |   | AK1.01 - Pump shutoff head   | 2.9  | 1      |
| 295007  | High Reactor Pressure / 3  |    |    | X  |    |    |   | AK3.03 - RCIC operation: Plant-Specific                                | 3.4  | 1      |
| 295009  | Low Reactor Water Level / 2  |    |    |    |    | X  |   | AA2.01 - Reactor water level   | 4.2  | 1      |
| 295009  | Low Reactor Water Level / 2  |    | X  |    |    |    |   | AK2.02 - Reactor water level control                                   | 3.9  | 1      |
| 295014  | Inadvertent Reactivity Addition / 1  |    |    |    |    | X  |   | AA2.01 - Reactor power   | 4.1* | 1      |
| 295015  | Incomplete SCRAM / 1   |    | X  |    |    |    |   | AK2.03 - Rod control and information system:<br>Plant-Specific         | 3.2  | 1      |
| 295015  | Incomplete SCRAM / 1   |    |    | X  |    |    |   | AK3.01 - Bypassing rod insertion blocks                                | 3.4  | 1      |
| 295024  | High Drywell Pressure / 5  | X  |    |    |    |    |   | EK1.02 - Containment building integrity: Mark-III                      | 3.9  | 1      |
| 295025  | High Reactor Pressure / 3  |    | X  |    |    |    |   | EK2.08 - Reactor/turbine pressure regulating system:<br>Plant-Specific | 3.7  | 1      |
| 295031  | Reactor Low Water Level / 2  |    |    |    |    |    | X | 2.4.11 - Knowledge of abnormal condition procedures.                   | 3.4  | 1      |
| 295037  | SCRAM Condition Present and Reactor Power<br>Above APRM Downscale or Unknown / 1 |    |    |    | X  |    |   | EA1.04 - SBLC  | 4.5* | 1      |
| 295037  | SCRAM Condition Present and Reactor Power<br>Above APRM Downscale or Unknown / 1 |    |    |    | X  |    |   | EA1.05 - CRD hydraulics systems  | 3.9  | 1      |

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

Group Point Total: 13

ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 Form ES-401-2

| E/APE # | E/APE Name / Safety Function                                 | K1 | K2 | K3 | A1 | A2 | G | KA Topic   | Imp. | Points |
|---------|--|----|----|----|----|----|---|--|------|--------|
| 295001  | Partial or Complete Loss of Forced Core Flow Circulation / 1 |    |    |    |    |    | X | 2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions. | 3.3  | 1      |
| 295002  | Loss of Main Condenser Vacuum / 3                            |    | X  |    |    |    |   | AK2.07 - Offgas system   | 3.1  | 1      |
| 295003  | Partial or Complete Loss of A.C. Power / 6                   |    |    |    |    | X  |   | AA2.04 - System lineups  | 3.5  | 1      |
| 295003  | Partial or Complete Loss of A.C. Power / 6                   |    |    | X  |    |    |   | AK3.02 - Selective tripping  | 2.9  | 1      |
| 295004  | Partial or Complete Loss of D.C. Power / 6                   | X  |    |    |    |    |   | AK1.04 - Effect of battery discharge rate on capacity  | 2.8  | 1      |
| 295008  | High Reactor Water Level / 2                                 |    |    | X  |    |    |   | AK3.07 - HPCS isolation: Plant-Specific  | 3.2  | 1      |
| 295012  | High Drywell Temperature / 5                                 |    |    |    | X  |    |   | AA1.01 - Drywell ventilation system  | 3.5  | 1      |
| 295012  | High Drywell Temperature / 5                                 |    |    |    |    | X  |   | AA2.01 - Drywell temperature   | 3.8  | 1      |
| 295016  | Control Room Abandonment / 7                                 |    |    |    |    | X  |   | AA2.01 - Reactor power   | 4.1* | 1      |
| 295017  | High Off-Site Release Rate / 9                               |    |    |    | X  |    |   | AA1.07 - Process radiation monitoring system   | 3.4  | 1      |
| 295019  | Partial or Complete Loss of Instrument Air / 8               |    |    |    | X  |    |   | AA1.01 - Backup air supply   | 3.5  | 1      |
| 295020  | Inadvertent Containment Isolation / 5                        | X  |    |    |    |    |   | AK1.05 - Loss of drywell/containment cooling   | 3.3  | 1      |
| 295020  | Inadvertent Containment Isolation / 5                        |    | X  |    |    |    |   | AK2.10 - Drywell equipment/floor drain sumps   | 2.9  | 1      |
| 295026  | Suppression Pool High Water Temperature / 5                  |    |    |    |    |    | X | 2.4.11 - Knowledge of abnormal condition procedures.   | 3.4  | 1      |



ES - 401      Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2      Form ES-401-2

| E/APE # | E/APE Name / Safety Function                                 | K1 | K2 | K3 | A1 | A2 | G | KA Topic  | Imp. | Points |
|---------|--|----|----|----|----|----|---|---|------|--------|
| 295027  | High Containment Temperature (Mark III Containment Only) / 5 |    |    |    |    | X  |   | EA2.04 - Containment radiation levels: Mark-III                             | 3.3  | 1      |
| 295027  | High Containment Temperature (Mark III Containment Only) / 5 | X  |    |    |    |    |   | EK1.02 - Reactor water level measurement: Mark-III                          | 3.0  | 1      |
| 295030  | Low Suppression Pool Water Level / 5                         |    | X  |    |    |    |   | EK2.03 - LPCS   | 3.8  | 1      |
| 295034  | Secondary Containment Ventilation High Radiation / 9         | X  |    |    |    |    |   | EK1.02 - †Radiation releases  | 4.1  | 1      |
| 600000  | Plant Fire On Site / 8                                       |    |    | X  |    |    |   | AK3.04 - Actions contained in the abnormal procedure for plant fire on site | 2.8  | 1      |

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

Group Point Total:    19

Facility: Clinton Power Station

# BWR RO amination Outline

Printed: 05/16/11

ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 3 Form ES-401-2

| E/APE # | E/APE Name / Safety Function                    | K1 | K2 | K3 | A1 | A2 | G | KA Topic                                      | Imp. | Points |
|---------|---|----|----|----|----|----|---|---|------|--------|
| 295021  | Loss of Shutdown Cooling / 4                    |    |    |    | X  |    |   | AA1.01 - Reactor water cleanup system         | 3.4  | 1      |
| 295023  | Refueling Accidents / 8                         |    |    |    | X  |    |   | AA1.02 - Fuel pool cooling and cleanup system | 2.9  | 1      |
| 295023  | Refueling Accidents / 8                         | X  |    |    |    |    |   | AK1.01 - Radiation exposure hazards           | 3.6  | 1      |
| 295032  | High Secondary Containment Area Temperature / 5 |    | X  |    |    |    |   | EK2.04 - PCIS/NSSSS                           | 3.6  | 1      |

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

Group Point Total: 4

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-2

| Sys/Ev # | System / Evolution Name                       | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|---|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 201005   | Rod Control and Information System (RCIS) / 1 |    |    |    | X  |    |    |    |    |    |    |   | K4.02 - Bank position withdrawal sequence (BPWS): BWR-6  | 3.3  | 1      |
| 209002   | High Pressure Core Spray System (HPCS) / 2    |    |    |    |    |    |    |    |    |    |    | X | 2.1.30 - Ability to locate and operate components, including local controls.   | 3.9  | 1      |
| 209002   | High Pressure Core Spray System (HPCS) / 2    | X  |    |    |    |    |    |    |    |    |    |   | K1.12 - Reactor vessel: BWR-5, 6   | 3.4  | 1      |
| 211000   | Standby Liquid Control System / 1             |    |    |    |    |    |    |    |    |    |    | X | 2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. | 3.4  | 1      |
| 211000   | Standby Liquid Control System / 1             |    |    |    |    | X  |    |    |    |    |    |   | K5.04 - Explosive valve operation  | 3.1  | 1      |
| 212000   | Reactor Protection System / 7                 |    |    |    |    |    |    |    |    | X  |    |   | A3.05 - SCRAM instrument volume level  | 3.9  | 1      |
| 215003   | Intermediate Range Monitor (IRM) System / 7   |    |    |    |    |    |    | X  |    |    |    |   | A1.03 - RPS status   | 3.6  | 1      |
| 215003   | Intermediate Range Monitor (IRM) System / 7   |    | X  |    |    |    |    |    |    |    |    |   | K2.01 - IRM channels/detectors   | 2.5* | 1      |
| 215004   | Source Range Monitor (SRM) System / 7         |    |    |    |    |    |    |    |    |    | X  |   | A4.03 - CRT displays: Plant-Specific   | 2.9  | 1      |
| 215004   | Source Range Monitor (SRM) System / 7         | X  |    |    |    |    |    |    |    |    |    |   | K1.01 - Reactor protection system  | 3.6  | 1      |

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-2

| Sys/Ev # | System / Evolution Name  | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 215005   | Average Power Range Monitor/Local Power Range Monitor System / 7       |    |    |    |    |    |    |    | X  |    |    |   | A2.07 - Recirculation flow channels flow mismatch                                       | 3.2  | 1      |
| 215005   | Average Power Range Monitor/Local Power Range Monitor System / 7       |    |    | X  |    |    |    |    |    |    |    |   | K3.08 - †core thermal calculations  | 3.0  | 1      |
| 216000   | Nuclear Boiler Instrumentation / 7                                     | X  |    |    |    |    |    |    |    |    |    |   | K1.21 - SPDS/ERIS/CRIDS/GDS: Plant-Specific   | 2.6* | 1      |
| 216000   | Nuclear Boiler Instrumentation / 7                                     |    |    | X  |    |    |    |    |    |    |    |   | K3.10 - Recirculation flow control system   | 3.2  | 1      |
| 217000   | Reactor Core Isolation Cooling System (RCIC) / 2                       |    |    |    |    |    |    |    |    |    |    | X | 2.1.28 - Knowledge of the purpose and function of major system components and controls. | 3.2  | 1      |
| 217000   | Reactor Core Isolation Cooling System (RCIC) / 2                       |    |    |    |    |    |    |    |    |    | X  |   | A4.03 - System valves   | 3.4  | 1      |
| 218000   | Automatic Depressurization System / 3                                  |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - ADS logic operation   | 3.8  | 1      |
| 223001   | Primary Containment System and Auxiliaries / 5                         |    | X  |    |    |    |    |    |    |    |    |   | K2.09 - Drywell cooling fans: Plant-Specific  | 2.7  | 1      |
| 223001   | Primary Containment System and Auxiliaries / 5                         |    |    |    |    | X  |    |    |    |    |    |   | K5.10 - Hydrogen combustibility versus hydrogen concentration and oxygen concentration  | 2.9  | 1      |
| 223002   | Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5 |    |    |    |    |    |    |    |    | X  |    |   | A3.03 - SPDS/ERIS/CRIDS/GDS: Plant-Specific   | 2.5* | 1      |

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-2

| Sys/Ev # | System / Evolution Name  | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 223002   | Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5 |    |    |    | X  |    |    |    |    |    |    |   | K4.01 - Redundancy  | 3.0  | 1      |
| 239002   | Relief/Safety Valves / 3   |    |    |    |    |    |    | X  |    |    |    |   | A1.04 - Reactor pressure                                  | 3.8  | 1      |
| 239002   | Relief/Safety Valves / 3   |    |    |    |    |    | X  |    |    |    |    |   | K6.04 - D.C. power: Plant-Specific                        | 3.0  | 1      |
| 241000   | Reactor/Turbine Pressure Regulating System / 3                         |    |    |    |    |    |    |    | X  |    |    |   | A2.05 - Failed open/closed main stop valve(s)             | 3.8  | 1      |
| 259002   | Reactor Water Level Control System / 2                                 |    |    |    |    |    |    |    |    |    | X  |   | A4.10 - Setpoint setdown reset controls: Plant-Specific   | 3.1  | 1      |
| 259002   | Reactor Water Level Control System / 2                                 |    |    | X  |    |    |    |    |    |    |    |   | K3.01 - Reactor water level                               | 3.8  | 1      |
| 261000   | Standby Gas Treatment System / 9                                       |    |    |    |    |    | X  |    |    |    |    |   | K6.09 - Primary containment high pressure: Plant-Specific | 3.1  | 1      |
| 264000   | Emergency Generators (Diesel/Jet) / 6                                  |    |    |    |    |    |    |    | X  |    |    |   | A2.09 - Loss of A.C. power                                | 3.7  | 1      |

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

Group Point Total: 28

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 2

Form ES-401-2

| Sys/Ev # | System / Evolution Name                                 | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|---|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 201003   | Control Rod and Drive Mechanism / 1                     |    |    |    |    | X  |    |    |    |    |    |   | K5.01 - Hydraulics   | 2.6  | 1      |
| 204000   | Reactor Water Cleanup System / 2                        |    |    |    |    | X  |    |    |    |    |    |   | K5.07 - Conductivity measurement   | 2.5  | 1      |
| 204000   | Reactor Water Cleanup System / 2                        |    |    |    |    |    | X  |    |    |    |    |   | K6.07 - SBLC logic   | 3.3  | 1      |
| 205000   | Shutdown Cooling System (RHR Shutdown Cooling Mode) / 4 | X  |    |    |    |    |    |    |    |    |    |   | K1.02 - Reactor water level  | 3.6  | 1      |
| 205000   | Shutdown Cooling System (RHR Shutdown Cooling Mode) / 4 |    |    | X  |    |    |    |    |    |    |    |   | K3.01 - Reactor pressure   | 3.3  | 1      |
| 214000   | Rod Position Information System / 7                     |    |    |    |    |    |    |    |    | X  |    |   | A3.04 - RCIS: Plant-Specific   | 3.5  | 1      |
| 219000   | RHR/LPCI: Torus/Suppression Pool Cooling Mode / 5       | X  |    |    |    |    |    |    |    |    |    |   | K1.03 - LPCI/RHR piping  | 3.7  | 1      |
| 226001   | RHR/LPCI: Containment Spray System Mode / 5             |    | X  |    |    |    |    |    |    |    |    |   | K2.02 - Pumps  | 2.9* | 1      |
| 239001   | Main and Reheat Steam System / 3                        |    |    |    |    |    |    | X  |    |    |    |   | A1.10 - Reactor power  | 3.8  | 1      |
| 239001   | Main and Reheat Steam System / 3                        |    |    | X  |    |    |    |    |    |    |    |   | K3.08 - Decay heat removal   | 3.4  | 1      |
| 245000   | Main Turbine Generator and Auxiliary Systems / 4        |    |    |    |    |    |    |    |    |    |    | X | 2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. | 3.4  | 1      |

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 2

Form ES-401-2

| Sys/Ev # | System / Evolution Name                      | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic   | Imp. | Points |
|----------|--|----|----|----|----|----|----|----|----|----|----|---|--|------|--------|
| 256000   | Reactor Condensate System / 2                |    |    |    |    |    |    |    | X  |    |    |   | A2.04 - A.C. power failures                                  | 2.9  | 1      |
| 262002   | Uninterruptable Power Supply (A.C./D.C.) / 6 |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - Transfer from preferred to alternate source          | 2.8  | 1      |
| 272000   | Radiation Monitoring System / 7              |    |    |    |    |    |    |    |    |    |    | X | 2.4.10 - Knowledge of annunciator response procedures.       | 3.0  | 1      |
| 286000   | Fire Protection System / 8                   |    |    |    |    |    |    |    |    |    | X  |   | A4.04 - Fire main pressure: Plant-Specific                   | 2.8  | 1      |
| 286000   | Fire Protection System / 8                   |    |    |    | X  |    |    |    |    |    |    |   | K4.07 - Diesel engine protection                             | 3.3  | 1      |
| 290001   | Secondary Containment / 5                    |    |    |    |    |    |    | X  |    |    |    |   | A1.01 - System lineups                                       | 3.1  | 1      |
| 290001   | Secondary Containment / 5                    |    |    |    | X  |    |    |    |    |    |    |   | K4.02 - Protection against over pressurization: Plant-System | 3.4  | 1      |
| 290003   | Control Room HVAC / 9                        |    |    |    |    |    | X  |    |    |    |    |   | K6.01 - Electrical power                                     | 2.7  | 1      |

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

Group Point Total: 19

Facility: Clinton Power Station

ES - 401

Plant Systems - Tier 2 / Group 3

Form ES-401-2

| Sys/Ev # | System / Evolution Name            | K1 | K2 | K3 | K4 | K5 | K6 | A1 | A2 | A3 | A4 | G | KA Topic  | Imp. | Points |
|----------|------------------------------------|----|----|----|----|----|----|----|----|----|----|---|---|------|--------|
| 233000   | Fuel Pool Cooling and Clean-up / 9 |    |    |    | X  |    |    |    |    |    |    |   | K4.06 - Maintenance of adequate pool level                | 2.9  | 1      |
| 239003   | MSIV Leakage Control System / 9    |    |    |    |    |    | X  |    |    |    |    |   | K6.01 - A.C. electrical distribution: BWR-4, 5, 6(P-Spec) | 2.8  | 1      |
| 268000   | Radwaste / 9                       |    |    |    |    |    |    |    | X  |    |    |   | A2.01 - System rupture                                    | 2.9  | 1      |
| 288000   | Plant Ventilation Systems / 9      |    |    |    |    |    |    |    |    | X  |    |   | A3.01 - Isolation/initiation signals                      | 3.8  | 1      |

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

Group Point Total: 4



## BWR RO Examination Outline

Form ES-401-5

Facility: Clinton Power Station

| Generic Category      | KA     | KA Topic  | Imp. | Points |
|-----------------------|--------|---|------|--------|
| Conduct of Operations | 2.1.8  | Ability to coordinate personnel activities outside the control room.  | 3.8  | 1      |
|                       | 2.1.11 | Knowledge of less than one hour technical specification action statements for systems.  | 3.0  | 1      |
|                       | 2.1.14 | Knowledge of system status criteria which require the notification of plant personnel.  | 2.5  | 1      |
| Category Total:       |        |   |      | 3      |
| Equipment Control     | 2.2.11 | Knowledge of the process for controlling temporary changes.   | 2.5  | 1      |
|                       | 2.2.28 | Knowledge of new and spent fuel movement procedures.  | 2.6  | 1      |
|                       | 2.2.33 | Knowledge of control rod programming.   | 2.5  | 1      |
| Category Total:       |        |   |      | 3      |
| Radiation Control     | 2.3.10 | Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.                   | 2.9  | 1      |
|                       | 2.3.2  | Knowledge of facility ALARA program.  | 2.5  | 1      |
|                       | 2.3.11 | Ability to control radiation releases.  | 2.7  | 1      |
|                       | 2.3.4  | Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized. | 2.5  | 1      |
| Category Total:       |        |   |      | 4      |
| Emergency Plan        | 2.4.25 | Knowledge of fire protection procedures.  | 2.9  | 1      |
|                       | 2.4.12 | Knowledge of general operating crew responsibilities during emergency operations.   | 3.4  | 1      |
|                       | 2.4.18 | Knowledge of the specific bases for EOPs.   | 2.7  | 1      |
| Category Total:       |        |   |      | 3      |
| Generic Total:        |        |   |      | 13     |

**Facility:** Clinton Power Station

Form ES-401-2

**Exam Date:** 07/16/2001**Exam Level:** RO

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

**Note:**

1. Attempt to distribute topics among all K/A Categories; select at least one topic from every K/A category within each tier.
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.

# Clinton Power Station 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 1       | <b>BOTH</b> | <b>201003</b> | <b>K5.01</b> |

The plant has been at End-Of-Cycle coastdown and 96% power when a scram occurred. The inlet scram valve for rod 28-41 failed to open

Which of the following describes rod 28-41's final position following the scram?

Control rod 28-41 will be \_\_\_\_\_ inserted due to the \_\_\_\_\_ pressure on the bottom of the CRD piston.

- |   |
|---|
| A. partially;      cooling water supply |
| B. partially;      reactor              |
| C. fully;          cooling water supply |
| D. fully;          reactor              |

Explanation:

A & C    Cooling water flow will be zero until scram is reset

B        With reactor pressure > 600 psig there is enough differential pressure to drive the rod completely in even though the scram inlet valve fails to open.

Answer

**D**

Objective:

LP85201 .1.1.14

Reference:

LP85201-03

Cognitive Level:

**2**

Question Pedigree:

New

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 2       | RO   | 201005 | K4.02 |

The following plant conditions exist:

- Reactor startup is in progress.
- Group 1 & 2 rods are at position 48.
- The reactor operator is completing the step to move group 3 rods from position 04 to position 08.
- Verification of step completion shows that group 3 rod 52-41 is still at position 04.

If the operator selected any other rod in group 3, would the operator expect a "Rod Block" related to "Banked Position" compliance, and why?

- A. No, after the first 2 groups of rods are at position 48 "Banked Position" is not in effect because individual rod worths are too low to cause fuel damage.
- B. No, group 3 & 4 rods "Banked Position" is not enforced until rods are at position 12 because this is the region of greatest rod worth.
- C. Yes, "Banked Position" is being enforced which will require the other rods in the same gang to be returned to position 04 and then the entire gang moved to position 08.
- D. Yes, "Banked Position" is being enforced which will require rod 52-41 to be withdrawn to position 08 before any other group 3 rod can be withdrawn.

Explanation:

Control Rod groups 1 & 2 are at position 48 so that places groups 3 & 4 in the banked position mode. This means that all the rods in a group must be moved first to position 04 then to 08 then to 12 and finally to 48. If a rod is selected that does not meet that criteria a "Rod Block" occurs. Since rod 52-41 is not at position 08 like the other rods in group 3, if another rod is selected the "Rod Block" would occur.

Answer  
**D**

Reference:  
LP87401-02

Question Pedigree:  
**CPS Exam Bank Question #10585**  
**modified**  
Difficulty:  
**3.8**

Objective:  
LP87401 .1.4.1

Cognitive Level:  
**2**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 3       | <b>BOTH</b> | 204000 | <b>K5.07</b> |

The plant is operating near rated conditions.

Annunciator 5000-1C, F-D INLET TEMP HI 140°F CAME IN AND HAS BEEN IN ONE MINUTE.

Under these conditions what is the preferred method of verifying reactor coolant conductivity is maintained within specification of ORM 2.3.1, Reactor Coolant System Chemistry?

A. RT Outlet Continuous Conductivity Recorder on P678.

B. RT Inlet Continuous Conductivity Recorder on P678.

C. RR Continuous Conductivity Recorder on P678.

D. Chemistry must obtain samples and analyze.

Explanation:

When the annunciator came in RT isolated. In accordance with CPS 3303.01 RR Continuous Conductivity Monitor would act as backup.

Answer

**C**

Objective:

LP85204 .1.2

Reference:

CPS 3303.01 Rev. 23a Limitation 6.2

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 4       | RO   | 204000 | K6.07 |

An operator initiated Standby Liquid Control 15 seconds ago, using both keylock switches, and the following plant conditions are observed:

- Reactor Power is 35% and stable.
- Amber lights for both SLC Pumps are on.
- Suction valves 1C41-F001A & B indicate intermediate.
- RT isolation valves 1G33-F001 & F004 indicate open.
- SLC storage tank level indicates approximately 4000 gallons.

From these plant conditions what would be the operator's next response:

- A. Notify the Control Room Supervisor that SLC has been initiated.
- B. Notify the Control Room Supervisor that SLC is not operating because the SLC pumps have tripped.
- C. Attempt to manually open SLC suction valves 1C41-F001A & B.
- D. Attempt to manually close RT isolation valves 1G33-F001 & F004.

Explanation:

SLC is in a normal sequence for starting. During the startup SLC sends a signal to isolate Reactor Water Cleanup (RT) 1G33-F001 & 004. Since this did not automatically happen the operator should take manual action to isolate cleanup.

Answer

**D**

Objective:

LP85204 .1.5.1

Reference:

LP85204-07

Cognitive Level:

**2**

Question Pedigree:

New

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 5       | <b>BOTH</b> | 205000 | <b>K1.02</b> |

|   |
|---|
| When placing RHR Loop B in SDC, CPS 3312.03 RHR – SHUTDOWN COOLING (SDC) & FUEL POOL COOLING ASSIST (FPC&A) has the 1E12-F064B, RHR Pump 1B Minimum Flow Valve, shut/verified shut and the breaker turned off. What is the reason for performing this action? |
|---|

- |  |
|--|
| A. To ensure that an inadvertent loss of RPV level does not occur.             |
| B. To prevent hydraulic instability with potential for increased pump wear.    |
| C. To minimize the possibility of thermal binding of 1E12-F064B.               |
| D. To ensure the discharge piping does not drain down if 1E12-F064B is opened. |

**Explanation:**

Step 8.1.2.16 of CPS 3312.03 supports answer A. B would be true if the valve were opened for a long period of time. C would be true if the valve was opened and then closed with temperatures >200°F. D is not true because 1E12-F064B is upstream of the discharge check valve and the discharge check valve will prevent drain down even if 1E12-F064B is open.

|   |   |  |
|---|---|--|
| <b>Answer</b><br><b>A</b><br><b>Objective:</b><br>LP85205 .1.5.13 | <b>Reference:</b><br>CPS 3312.03 Rev. 3c<br><b>Cognitive Level:</b><br><b>1</b> | <b>Question Pedigree:</b><br>New<br><b>Difficulty:</b><br><b>2.8</b> |
|---|---|--|

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 6       | <b>BOTH</b> | <b>205000</b> | <b>K3.01</b> |

|   |
|---|
| <ul style="list-style-type: none"> <li>• Shutdown Cooling is in service with RHR B loop.</li> <li>• Reactor Pressure is 102 psig and stable.</li> <li>• WS is supplying the cooling water.</li> <li>• The B RHR heat exchanger service water outlet valve 1E12-F068B fails closed.</li> </ul> |
| Which annunciator would be the first indication of the problem:   |
| A. AUTO START SSW PUMP 1B   |
| B. LOW SERVICE WATER PRESSURE   |
| C. RHR PUMP B AUTO TRIP   |
| D. WATER LEG PUMP AUTO TRIP   |

### Explanation:

Isolation of SX flow to B RHR Heat Exchanger will cause reactor coolant temperature to rise and thus reactor pressure to rise. When reactor pressure rises to 104 psig. The shutdown cooling suction valves will close initiating the RHR B Pump trip logic and annunciator.

Answer

**C**

Objective:

LP85205 .1.5.1

Reference:

CPS 5065.03 Rev. 33

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.5**



# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 7       | RO   | 209002 | 2.1.30 |

The following conditions exist:

- Mode Switch in Shutdown
- Reactor Power = 10%
- Reactor Water Level = 10 inches and lowering at 1 inch/minute.
- Drywell pressure = 0.75 psig and stable

Which of the following would prevent HPCS injection during these conditions:

| <u>What</u>   | <u>Where</u> |
|---|--------------|
| A. Initiate HPCS while holding discharge valve control switch in 'close'. | P601 Only    |
| B. Close HPCS discharge valve.  | P601 Only    |
| C. Close HPCS discharge valve.  | P601 or RSP  |
| D. Initiate HPCS while holding discharge valve control switch in 'close'. | P601 or RSP  |

Explanation:

There is no HPCS initiation signal present at this time and in accordance with CPS 4411.02 under these conditions to prevent HPCS initiation

- While holding control switch in CLOSE for 1E22-F004, HPCS To CNMT Outbd Isln Valve:
- Arm and Depress HPCS MANUAL INITIATION push-button.

This can only be done from P601.

|                |                               |                    |
|----------------|-------------------------------|--------------------|
| Answer         | Reference: CPS 4411.02 Rev. 6 | Question Pedigree: |
| <b>A</b>       |                               | New                |
| Objective:     | Cognitive Level:              | Difficulty:        |
| SE87554 .1.5.1 | 2                             | 3.0                |

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 8       | SRO  | 209002 | 2.4.49 |

The following conditions exist:

- Mode Switch in Shutdown
- Reactor Power = 10%
- Reactor Water Level = 40 inches and raising at 1 inch/minute.
- Drywell pressure = 0.75 psig and stable

Which of the following actions should the operator be directed to perform and why?

- |   |
|---|
| A. Close HPCS discharge valve; prevent cold unborated water from causing power spikes.  |
| B. Initiate HPCS while holding discharge valve control switch in 'Close'; prevent high water level from causing turbine trip.     |
| C. Close HPCS discharge valve; prevent high water level from causing turbine trip.  |
| D. Initiate HPCS while holding discharge valve control switch in 'Close'; prevent cold unborated water from causing power spikes. |

Explanation: There is no HPCS initiation signal present at this time and in accordance with CPS 4411.02 under these conditions to prevent HPCS initiation

- While holding control switch in CLOSE for 1E22-F004, HPCS To CNMT Outbd Isln Valve:
- Arm and Depress HPCS MANUAL INITIATION push-button.

This is performed to prevent cold unborated water from causing power spikes.

|                 |                  |                    |
|-----------------|------------------|--------------------|
| Answer          | Reference:       | Question Pedigree: |
| <b>D</b>        | EOP Tech Bases   | <b>New</b>         |
| Objective:      | Cognitive Level: | Difficulty:        |
| LP87553 .1.13.1 | <b>2</b>         | <b>3.0</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 9       | RO   | 209002 | K1.12 |

|  |
|--|
| The HPCS injection piping integrity is monitored by comparing HPCS injection line pressure to the RPV pressure sensed: |
| A. above the reactor core bottom plate.  |
| B. Below the reactor core bottom plate.  |
| C. Above the steam separator.  |
| D. Below the steam separator   |

**Explanation:**

The HPCS line break leak setction monitors the d/p between the HPCS injection line and the area above the reactor core bottom plate.

Answer

**A**

Objective:

LP85380 .1.1.6

Reference:

LP85380-02

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**2.9**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 10      | SRO  | 211000 | 2.1.32 |

|   |
|---|
| Technical Specification 3.7.1, "Standby Liquid Control" requires the temperature of the sodium pentaborate solution be maintained above a certain temperature. The basis for this requirement is to maintain: |
| A. accurate level indication by preventing significant changes in water density.  |
| B. accurate level indication by preventing sodium pentaborate precipitate in the level indication tube.   |
| C. system operability by preventing pump seal damage from cold pump starts.   |
| D. system operability by preventing sodium pentaborate precipitate from forming in the suction piping.  |

Explanation: Technical Specification SR 3.1.7.2 requires verification of the sodium pentaborate solution. The bases associated with SR 3.1.7.2 discusses verifying borated solution temperature thereby ensuring SLC system operability.

|                |                        |                    |
|----------------|------------------------|--------------------|
| Answer         | Reference:             | Question Pedigree: |
| <b>D</b>       | T. S. SR 3.1.7.2 Bases | <b>New</b>         |
| Objective:     | Cognitive Level:       | Difficulty:        |
| LP85211 .1.6.2 | <b>1</b>               | <b>3.0</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 11      | RO   | 211000 | K5.04 |

Which of the following describes how flow obstruction is prevented in operation of the SLC Squib Valves?

- A. Once sheared off, a spring above the plug holds it down preventing movement into the flowpath.
- B. The extended plunger prevents the sheared off plug from entering the flowpath.
- C. Pump flow forces the plug into a chamber, holding it there as long as there is flow.
- D. The ceramic plug crumbles when struck by the plunger and falls into the valve body chamber.

**Explanation:**

The sheared end is pushed out of the way in the chamber and the extended plunger prevents the sheared off portion of the valve from obstructing flow.

Answer

**B**

Reference:

LP85211-03

Question Pedigree:

**CPS Exam Bank Question #3886**

**Modified**

Difficulty:

**4.3**

Objective:

LP85211 .1.4.4

Cognitive Level:

**1**

# Clinton Power Station 2001 ILT Exam

|           |             |               |               |
|-----------|-------------|---------------|---------------|
| Question: | Exam        | System        | KA            |
| # 12      | <b>BOTH</b> | <b>211000</b> | <b>2.1.33</b> |

| Which of the following sets of conditions meets the requirements for OPERABILITY of the Standby Liquid Control System in Mode 2? |            |               |             |
|--|------------|---------------|-------------|
| Provide Tech Spec 3.1.7  |            |               |             |
|  | Tank Level | Tank Solution |             |
|  |            | Concentration | Temperature |
| A.   | 3600       | 13.5%         | 65°F        |
| B.   | 4000       | 12.0%         | 75°F        |
| C.   | 3500       | 13.5%         | 82°F        |
| D.   | 3825       | 12.7%         | 76°F        |

**Explanation:**

- A – Temperature is below the minimum 70°F temperature.
- B – Concentration is just below minimum concentration line.
- C – Tank volume is below the low level alarm.

Answer

**D**

Objective:

LP87622 1.6.9,  
.1.6.10

Reference:

Tech Spec 3.1.7

Cognitive Level:

**2**

Question Pedigree:

**CPS Bank Question #18273**

Difficulty:

**3.3**

# Clinton Power Station 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 13      | <b>BOTH</b> | 212000 | <b>A3.05</b> |

- Unit has been in mode 3 for two days
- Reactor pressure is stable at 100 psig

A leaky scram outlet valve has resulted in the following alarms

5006-1D SDV NOT DRAINED

5004-2A DIV 1 OR 4 SDV HI WTR TRIP

5005-2A DIV 2 OR 3 SDV HI WTR TRIP

Which of the following describes the final status of the following annunciators?

|    | 5006-2H ROD OUT<br>BLOCK | 5004-3L SCRAM PLT VLV<br>AIR HDR PRESS LO |
|----|--------------------------|---|
| A. | Cleared                  | Cleared                                   |
| B. | Alarmed                  | Alarmed                                   |
| C. | Cleared                  | Alarmed                                   |
| D. | Alarmed                  | Cleared                                   |

Explanation: ROD OUT BLOCK would already be in solid in mode 3. The SCRAM PILOT VALVE AIR will depressurize when the full scram is received.

|                |                     |                    |
|----------------|---------------------|--------------------|
| Answer         | Reference:          | Question Pedigree: |
| <b>B</b>       | CPS 5004.03 Rev. 26 | <b>New</b>         |
|                | CPS 5006.02 Rev. 26 |                    |
| Objective:     | Cognitive Level:    | Difficulty:        |
| LP85201 .1.1.4 | <b>2</b>            | <b>3.5</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 14      | RO   | 214000 | A3.04 |

- The plant has experienced a Loss of Offsite Power.
- 125 VDC MCC 1A is deenergized.
- Unit has scrammed.
- Scram has NOT been reset.

Which of the following could be used to verify the positions of all control rods?

- A. "All Rods Full In" LEDs on 1H13-P651/652
- B. Full Core Display on P680
- C. GETARS Channel 291
- D. OD-7, Option 2

### Explanation:

- A. Correct, Rod Position Information System automatically initiates indication.
- B. Loss of Offsite Power has deenergized Full Core Display.
- C. GETARS for position indication comes from 125 VDC MCC 1A
- D. Only good if Scram is reset

Answer

**A**

Reference:

CPS 3304.02 Rev. 14b

Question Pedigree:

**CPS Exam Bank Question #6634**

**Modified**

Difficulty:

**3.3**

Objective:

Cognitive Level:

**2**



# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 15      | <b>BOTH</b> | <b>215003</b> | <b>A1.03</b> |

Given the following plant conditions:

- Reactor Startup is in progress.
- IRM channels are on Range 1 indicating between 25 and 75.
- SRM Channel 'A' is bypassed awaiting maintenance.

Which of the following statements correctly describes the response if the **IRM Channel "A"** high voltage power supply de-energized?

- A. There will be NO protective response because the companion SRM for IRM 'A' is bypassed.
- B. There will be a control rod withdrawal block ONLY since IRM 'A' inputs to RPS are bypassed.
- C. There will be a RPS channel 'A' trip ONLY since IRM range 1 bypasses the control rod withdrawal block.
- D. There will be BOTH a RPS channel 'A' trip and control rod withdrawal block.

Explanation:

### Answer

The IRM Hi Voltage power supply failure is an inop trip. This produces a rod block and scram signal which are only bypassed with the Sensor bypass switch in bypass.

### Distractors

Additional bypass conditions for scram and rod block are suggested. While IRM range 1 bypasses downscale rod block it doesn't bypass inop trips.

Answer

**D**

Objective:

.1.3.1 & .1.3.2

Reference:

LP87409-01

Cognitive Level:

**2**

Question Pedigree:

**Question from Hope Creek**

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 16      | <b>BOTH</b> | <b>215003</b> | <b>K2.01</b> |

|   |
|---|
| The IRM equipment drawers are powered from: |
| A. DC MCCs 1A, 1B, 1C, and 1D               |
| B. Aux Bldg MCCs 1A1, 1B1, 1C1, 1D1         |
| C. Division 1, 2, 3, and 4 NSPS busses      |
| D. Unit Subs 1A, 1B, 1C, and 1D             |

Explanation: Neutron monitoring is powered from the NSPS busses.

|              |                  |                              |
|--------------|------------------|------------------------------|
| Answer       | Reference:       | Question Pedigree:           |
| <b>C</b>     | LP87409-01       | CPS Exam Bank Question #7747 |
| Objective:   | Cognitive Level: | Difficulty:                  |
| LP87409 .1.6 | <b>1</b>         | <b>3.8</b>                   |

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 17      | <b>BOTH</b> | <b>215004</b> | <b>A4.03</b> |

|   |
|---|
| Which of the following represents the SRM count rate indication displayed on DCS? |
| A. Only the highest reading SRM   |
| B. Highest of A or C <u>and</u> B or D  |
| C. Highest of A or B <u>and</u> C or D  |
| D. All four are displayed   |

Explanation:

All four SRMs are displayed on DCS.

Answer

**D**

Objective:

LP87215 .1.3.2

Reference:

LP87215-01

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**2.8**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 18      | <b>BOTH</b> | 215004 | <b>K1.01</b> |

|   |                                    |
|---|------------------------------------|
| Which set of conditions within the Source Range Monitoring system, would generate a Reactor Protection system scram signal? |                                    |
| A. Shorting links REMOVED   | upscale trip in<br>1 channel       |
| B. Shorting links REMOVED   | short period trip<br>in 2 channels |
| C. Shorting links INSTALLED   | upscale trip in<br>2 channels      |
| D. Shorting links INSTALLED   | short period trip<br>in 1 channel  |

Explanation: With the shorting links removed RPS is placed in non-coincidence logic and any 1 SRM upscale trip or INOP signal will initiate a full scram.

Answer

**A**

Reference:

LP87215-01

Question Pedigree:

**CPS Exam Bank Question #3530**

**Modified**

Difficulty:

**3.0**

Objective:

LP87215 .1.3.4

Cognitive Level:

**2**

Clinton Power Station  
2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 19      | RO   | 215005 | A2.07 |

With the plant at 100% power:

'A' APRM Flow Reference Unit Fails to 5%

Which of the following would describe the expected response, and the appropriate procedure to control the situation?

- |   |
|---|
| A. APRM UPSCL Alarm; Enter Scram Off-Normal                     |
| B. APRM UPSCL Alarm; Enter Annunciator Procedure for ROD BLOCK  |
| C. APRM DWNSCL Alarm; Enter Scram Off-Normal                    |
| D. APRM DWNSCL Alarm; Enter Annunciator Procedure for ROD BLOCK |

Explanation:

Initiating event was a loss of flow signal which caused the two annunciators.

A. APRM UPSCL alarm on one channel will not cause a scram.

B. Correct Answer, Annunciator procedures states this.

C & D APRM DWNSCL alarm does not come in.

|                |                                 |                    |
|----------------|---------------------------------|--------------------|
| Answer         | Reference:                      | Question Pedigree: |
| <b>B</b>       | CPS 5004.02 Rev. 27, LP87411-01 | <b>New</b>         |
| Objective:     | Cognitive Level:                | Difficulty:        |
| LP87411 .1.6.7 | <b>2</b>                        | <b>3.0</b>         |

# Clinton Power Station 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 20      | <b>BOTH</b> | <b>215005</b> | <b>K3.08</b> |

|   |
|---|
| How would a LPRM Failure Downscale affect core thermal power limits?  |
| A. Conservative; Indicated power would lower, moving the plant further from the thermal limits.                                       |
| B. Non-Conservative; Indicated power would rise, moving the plant closer to the thermal limits.                                       |
| C. Conservative, Indicated power would rise, creating the possibility that a core thermal limit may be exceeded when it really isn't. |
| D. Non-Conservative; Indicated power would lower, creating the possibility of a core thermal limit being exceeded without detection.  |

Explanation: A downscale LPRM will cause indicated power to be less than actual power. A thermal limit could then be exceeded without being detected.

|                |                  |                    |
|----------------|------------------|--------------------|
| Answer         | Reference:       | Question Pedigree: |
| <b>D</b>       | LP87411-01       | <b>New</b>         |
| Objective:     | Cognitive Level: | Difficulty:        |
| LP87411 .1.6.3 | <b>1</b>         | <b>3.0</b>         |

# Clinton Power Station 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 21      | <b>BOTH</b> | 216000 | <b>K1.21</b> |

|   |
|---|
| One of the Wide Range Reactor Pressure Vessel Instruments that inputs to SPDS has failed. How would SPDS indicate this failure? |
| A. Bar graph will turn white and associated number will turn inverse (reverse video) white.                                     |
| B. Bar graph will turn white and associated number will turn inverse (reverse video) red.                                       |
| C. Bar graph will turn red and associated number will turn inverse (reverse video) white.                                       |
| D. Bar graph will turn red and associated number will turn inverse (reverse video) red.   |

Explanation:

When there are two or more sensors for a parameter and the readings do not agree the parameter is displayed in white on the SPDS display and the number turns inverse white.

|                |                  |                    |
|----------------|------------------|--------------------|
| Answer         | Reference:       | Question Pedigree: |
| <b>A</b>       | LP87283-01       | <b>New</b>         |
| Objective:     | Cognitive Level: | Difficulty:        |
| LP87283 .1.7.1 | <b>1</b>         | <b>2.5</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 22      | <b>BOTH</b> | 216000 | <b>K3.10</b> |

The following conditions exist:

- The plant is operating at 60% power.
- RPV level is 35" and stable on 3 Element Feed Water Level Control.
- B TDRFP has been removed from service.
- Narrow Range Level Transmitter 'A' is selected for input to the Feed Water Level Control system.

An electronic failure causes the 'A' level channel to instantaneously track 6 inches less than actual level.

Which of the following is the first expected plant response?

A. The A TDRFP will lock up due to a control signal failure.

B. A Level 3 scram will occur.

C. The Reactor Recirc system will run back.

D. The Reactor Recirc pumps will trip to off.

Explanation: A RR runback is initiated by RPV level < lvl 4 on the selected level channel and less than 2 TDRFPs running.

Answer

**C**

Objective:

LP87402-01 . 1.4.1

Reference:

CPS 3302.01 Rev. 25a

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.75**



# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 23      | RO   | 217000 | 2.1.28 |

Which component prevents drawing water into the RCIC system turbine exhaust line thereby preventing mechanical damage to the piping.

- A. Steam Exhaust Drain Pot, 1RI45C
- B. Turbine Exhaust Check Valve, 1E51-F040
- C. Exhaust Line Rupture Discs, 1E51-D001 & 1E51-D002
- D. Exhaust Vacuum Breakers, 1E51-F079 & 1E51-F081

Explanation:

- A Drain Pot removes moisture from the condensed steam.
- B 1E51-F040 is a containment isolation valve.
- C Rupture Discs protect the exhaust piping from overpressure.

Answer  
**D**

Reference:  
LP85217-03

Question Pedigree:  
**CPS Exam Bank Question #7444**  
**Modified**

Objective:  
LP85217 1.2.2

Cognitive Level:  
**1**

Difficulty:  
**2.3**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 24      | RO   | 217000 | A4.03 |

Given that CPS is in Mode 1, which one of the RCIC valves is NOT in a normal standby lineup?

- A. Turbine Steam Shutoff Valve (F045) indicates open.
- B. Turbine Governor Valve (F610) indicates open.
- C. Pump Min Flow Recirc to Suppression Pool (F019) indicates closed.
- D. Pump Supply to Turbine Lube Oil Cooler (F046) indicates closed.

Explanation: With the Turbine Steam Shutoff Valve open, steam would be supplied to the RCIC turbine and the turbine would be running and not in standby.

Answer

**A**

Objective:

LP85217 .1.4

Reference:

LP85217-03

Cognitive Level:

**1**

Question Pedigree:

**INPO Bank Question #11261 (LaSalle)**

Difficulty:

**2.5**

# Clinton Power Station 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 25      | <b>BOTH</b> | <b>218000</b> | <b>K5.01</b> |

A plant transient is in progress with current plant conditions as follows:

- Drywell Pressure is 3.6 psig and rising at 0.2 psi/min.
- Reactor Level is -35" and lowering at 1.5 in./min.
- Reactor Pressure is 810 psig and lowering at 10 psi/min.
- HPCS Pump is OOS
- All other ECCS systems have performed as expected.

ADS will initiate immediately after:

- |  |
|--|
| A. Level 1 is reached.   |
| B. Level 1 is reached and the 105 second timer times out.                  |
| C. Top of Active Fuel (TAF) is reached.                                    |
| D. Top of Active Fuel (TAF) is reached and the 105 second timer times out. |

Explanation: ADS initiation requires a high drywell pressure, a low pressure ECCS pump running, a level 1 and the 105 sec timer timed out.

Answer  
**B**  
Objective:  
LP87218 .1.11.2

Reference:  
LP87218-01  
Cognitive Level:  
**2**

Question Pedigree:  
**New**  
Difficulty:  
**2.3**

# Clinton Power Station

## 2001 ILT Exam

| Question: | Exam | System | KA     |
|-----------|------|--------|--------|
| # 26      | SRO  | 219000 | 2.4.45 |

- A transient has occurred
- "B" RHR is in Suppression Pool Cooling

The following annunciators have been received:

- RHR HX B OUTLET CONDUCTIVITY HIGH
- SX SERVICE WATER EFFLUENT B – IRIX-PR039 –HIGH ALARM

Which of these annunciators should receive the highest priority and why?

- |  |
|--|
| A. RHR HX B OUTLET CONDUCTIVITY HIGH; indicates fuel damage              |
| B. RHR HX B OUTLET CONDUCTIVITY HIGH; indicates radiation release        |
| C. SX SERVICE WATER EFFLUENT B – IRIX-PR039; indicates fuel damage       |
| D. SX SERVICE WATER EFFLUENT B – IRIX-PR039; indicates radiation release |

Explanation:

Incorrect

- A. & B. Alarm is expected anytime Suppression Pool Cooling is in service  
C. Alarm would not be expected unless there is a RHR H/X tube leak.

Correct

- D. Alarm would be high priority and would be indicative of a radiation release due to a RHR H/X tube leak.

Answer

**D**

Objective:

Reference:

CPS 4979.05 Rev. 7

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**2.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 27      | RO   | 219000 | K1.03 |

The LPCI mode of RHR loop A is degraded due to suction strainer fouling.

Which of the following describes another mode that will be affected?

A. Shutdown Cooling

B. Fuel Pool Cooling Assist

C. Suppression Pool Cooling

D. Feedwater Leakage Control for 1B21-F032A/B

Explanation:

Shutdown Cooling and Fuel Pool Cooling Assist do not utilize the suppression pool as a source of water. RHR loop B provides Feedwater Leakage control for 1B21-F032A/B.

Suppression Pool Cooling and LPCI modes share the same suction path.

Answer

**C**

Objective:

LP85205 .1.3.2

Reference:

LP85205-05

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station 2001 ILT Exam

Question:

Exam

System

KA

# 28

**BOTH**

**223001**

**K2.09**

- Unit was at rated conditions
- All four DW Cooling System fans were running to facilitate a swap of chillers.
- The normal feed breaker to 4160V 1A1 bus tripped.
- DG restored power to 4160V 1A1 bus as designed.

Which of the following describes the DW Cooling Fans status following the transient?

| DW Cooling Fan | A       | B       | C       | D       |
|----------------|---------|---------|---------|---------|
| A.             | Tripped | Tripped | Tripped | Tripped |
| B.             | Tripped | Running | Tripped | Running |
| C.             | Tripped | Running | Running | Tripped |
| D.             | Running | Running | Running | Running |

Explanation:

A & C are powered from Division 1

B & D are powered from Division 2

A & C tripped on undervoltage when power was lost and do not restart when power is restored.

B & D remained running

Answer

Reference:

Question Pedigree:

**B**

LP85222-02, CPS 3320.01 Rev. 11b

**New**

Objective:

Cognitive Level:

Difficulty:

**2**

**4.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 29      | <b>BOTH</b> | <b>223001</b> | <b>K5.10</b> |

A LOCA has occurred, current plant conditions are as follows:

- Containment Pressure is – 10 psig.
- Containment Hydrogen Concentration is – 8.3%

Which of the following actions would be required under these conditions?

- A. Start the Hydrogen Igniters.
- B. Start the Mixing Compressors.
- C. Start the Hydrogen Recombiners.
- D. Vent and Purge the Containment.

Explanation:

A – Igniters are required to be prevented from restarting if not already on.

B – Mixers are required to be stopped if igniters are not on and conditions are greater than figure R.

C – Recombiners are required to be stopped if hydrogen is greater than 5%.

Answer

Reference:

Question Pedigree:

**D**

EOP Tech Bases

**New**

Objective:

Cognitive Level:

Difficulty:

LP87600 .1.3.3

**1**

**3.25**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 30      | BOTH | 223002 | A3.03 |

A plant transient has occurred. The following containment isolation groups have received a valid isolation signal and the applicable valves have responded as indicated:

Group 5      All valves have shut.

Group 4      All valves have shut except 1G33-F053, RWCU Disch Inbd Isol, which indicates intermediate.

How will the above conditions be displayed on DCS?

- A. A green '5' only.
- B. A red inverse (reverse video) '4' only
- C. A green '5' and a red inverse (reverse video) '4'
- D. A green '5' and a green '4'.

Explanation:

DCS shows only isolation group numbers that have all their isolation valves fully shut, so only the "5" would be displayed.

Answer

A

Objective:

LP87407 .1.2.1

Reference:

LP87407-01 & CPS 3512.01 Rev.9

Cognitive Level:

1

Question Pedigree:

New

Difficulty:

3.5



# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 31      | BOTH | 223002 | K4.01 |

Which of the following describes CRVICS design features utilized at CPS to ensure redundancy?

To ensure closure of penetrations that have two:

- A. MOVs in series, each will have two power supplies.
- B. AOVs in series, each will share two accumulators.
- C. MOVs in series, each will have a different power supply.
- D. AOVs in series, each has two accumulators.

Explanation:

A – Each MOV only has one power supply.

B – Each AOV has an accumulator but does not share.

C – Correct answer each will have a different power supply to ensure that if one power supply is lost the other power supply will allow closure of one of the valves and isolation of the line.

D – AOVs only have one accumulator each.

Answer

C

Objective:

Reference:

LP87407-01

Cognitive Level:

1

Question Pedigree:

New

Difficulty:

2.8

# Clinton Power Station 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 32      | <b>BOTH</b> | 226001 | <b>K2.02</b> |

A loss of Off Site Power has occurred:

- Division I Diesel Generator could NOT be started.
- Division II Diesel Generator auto started and loaded.
- Division III Diesel Generator auto started and loaded.

At this time, with no operator action, the pump(s) available for **Containment Spray** is/are:

A. RHR Pump A

B. RHR Pump B

C. RHR Pumps A & B

D. RHR Pumps B & C

Explanation:

A & D RHR Pump "A" does not have power.

C RHR B & C have power but only B supplies containment spray.

Answer

**B**

Objective:

LP85205 .1.3.4

Reference:

LP85205-05

Cognitive Level:

**2**

Question Pedigree:

**Dresden 2000 NRC Exam, Modified**

Difficulty:

**2.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 33      | RO   | 233000 | K4.06 |

The following conditions exist:

- The plant is in Mode 5.
- Core Alterations are in progress with fuel being moved to and from containment.

The SRO in charge of performing LLRTs requests permission to perform CPS 9861.02D026, LLRT DATA SHEET FOR IMC053, FC SUPPLY TO THE CONTAINMENT.

What would be the operator's expected response, and why?

- A. Allow performance of the test, there is no affect on current plant conditions.
- B. Allow performance of the test after Fuel Pool Cooling is secured, condition will have no affect on current plant conditions.
- C. Do NOT allow performance of the test, Fuel Pool Cooling is required during this phase of plant operations.
- D. Do NOT allow performance of the test, Fuel Pool Cooling is required anytime in Mode 5.

Explanation: The LLRT would require the FC supply to the upper containment pools. FC is required to supply the upper pools for makeup during IFTS operations.

|                |   |                    |
|----------------|---|--------------------|
| Answer         | Reference:  | Question Pedigree: |
| C              | CPS 3702.01 Precaution 4.3 Rev. 14a<br>LP85233-03 | New                |
| Objective:     | Cognitive Level:                                  | Difficulty:        |
| LP85233 .1.2.9 | 2   | 3.0                |

# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 34

RO

239001

A1.10

The plant is at 75% power when a total loss of MSR Reheating Steam occurs. The effect on core power and generator output is seen as:

|    | Core Power | Gen. Output |
|----|------------|-------------|
| A. | Rise       | Rise        |
| B. | Rise       | Lower       |
| C. | Lower      | Rise        |
| D. | Lower      | Lower       |

Explanation:

Core Power goes up with the loss of feedwater heating. Generator output would rise as steam normally going to the MSR would pass through the turbine.

Answer

Reference:

Question Pedigree:

A

LP86203-00

NEW

Objective:

Cognitive Level:

Difficulty:

LP86203 .1.9.2

2

3.3

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 35      | <b>BOTH</b> | 239001 | <b>K3.08</b> |

|  |
|--|
| The plant has experienced a complete loss of Instrument Air, due to an unisolable rupture in the Turbine Building. Which of the following is the preferred method of decay heat removal? |
| A. Turbine Bypass Valves   |
| B. Reactor Feed Pump Turbine   |
| C. Steam Jet Air Ejectors  |
| D. Reactor Core Isolation Cooling  |

Explanation:

A, B, & C Loss of Instrument Air shuts the MSIVs preventing the use of any of these methods.

Answer

**D**

Objective:

LP85239 .1.8.2

Reference:

LP85239-05

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**2.5**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 36      | <b>BOTH</b> | <b>239002</b> | <b>A1.04</b> |

A Group I Isolation occurred at 25% power. SRVs opened to control a reactor pressure spike and subsequently reclosed. Maximum reactor pressure was 1110 psig.

At what pressure will the next Safety-Relief Valve open and why?

- A. 1033 psig; to prevent reaching the high pressure scram setpoint.
- B. 1033 psig; to minimize cycling of the other SRVs.
- C. 1103 psig; to prevent reaching the high pressure scram setpoint.
- D. 1103 psig; to minimize cycling of the other SRVs.

Explanation:

When SRVs are actuated due to high pressure the Low-Low Set relief function is actuated. This resets the reopen pressure to a lower value. The close pressure of the lowest valve is 926#. The lowest pressure that a valve reopens is 1033#. The reason this is done is to reduce the number of SRVs cycling for a given condition.

Answer

**B**

Objective:

LP85239 .1.6.2

Reference:

LP85239-05

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.3**

# Clinton Power Station 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 37      | <b>BOTH</b> | 239002 | <b>K6.04</b> |

|   |     |        |                             |
|---|-----|--------|-----------------------------|
| DC MCC 1A power is lost to the SRVs.                                |     |        |                             |
| Which of the following functions are still available for SRV F051G? |     |        |                             |
|   | LLS | Relief | Manually Open from H13-P601 |
| A.  | X   | X      |                             |
| B.  |     | X      | X                           |
| C.  | X   |        | X                           |
| D.  | X   | X      | X                           |

Explanation: LLS and Relief modes energize both solenoids (Div 1 & 2). The manual switches on 1H13-P601 energize only the Div 1 solenoids

|                 |                  |                    |
|-----------------|------------------|--------------------|
| Answer          | Reference:       | Question Pedigree: |
| <b>A</b>        | LP85239-05       | <b>New</b>         |
| Objective:      | Cognitive Level: | Difficulty:        |
| LP85239 .1.10.1 | <b>2</b>         | <b>2.5</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 38      | BOTH | 239003 | K6.01 |

What is the potential impact of a loss of AC power to the pipe heater on its respective MSIV Leakage Control System inboard subsystem?

- |   |
|---|
| A. Subsystem air blower capacity would rise.  |
| B. Condensate formed by vapor leakage would not be evaporated, creating a water seal on the process line. |
| C. The in-service Drywell Purge Filter Train charcoal filter's efficiency would lower.                    |
| D. The in-service Standby Gas Treatment Train charcoal filter's efficiency would rise.                    |

Explanation:

- A. Moisture would decrease the blower capacity.  
 C. Drywell Purge Filter Trains are not used with MSIV leakage control.  
 D. Moisture would decrease the charcoal efficiency

Answer

**B**

Objective:

LP85431 .1.6.2

Reference:

LP85431-01

Cognitive Level:

**1**

Question Pedigree:

**CPS EB #12564**

Difficulty:

**2.8**



# Clinton Power Station

## 2001 ILT Exam

| Question: | Exam | System | KA     |
|-----------|------|--------|--------|
| # 39      | SRO  | 261000 | 2.4.10 |

Current plant conditions are:

LOCA signal Fuel Building Rad present >10mr.

'B' Reactor Operator reports that both VG trains are running.

A train flow is 4800 scfm.

B train flow is 3800 scfm.

Which of the following describes the direction that should be given to the ROs?

A. Secure train A only.

B. Secure train B only.

C. Leave both trains running.

D. Secure both trains and restart VF.

Explanation:

A train flow is excessive. Rad is >10 mr so VF cannot be restarted.

Answer

**A**

Objective:

LP85261 .1.9.1 &

.1.10.1

Reference:

5050.03 Rev. 30a

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 40      | <b>BOTH</b> | 241000 | <b>A2.05</b> |

Current plant conditions are as follows:

- Reactor Power 30% power.
- CPS 9031.06 MAIN TURBINE STOP VALVE AND COMBINED INTERMEDIATE VALVE TESTS is in progress.

When the first Main Stop Valve is tested, ALL MAIN STOP VALVES FAIL SHUT.

What is the initial expected plant response, and operator actions?

- |  |
|--|
| A. The Bypass Valves will control pressure; enter Loss of Feedwater Heating.     |
| B. The Bypass Valves will control pressure; enter Reactor Scram.                 |
| C. The Bypass Valves will NOT control pressure; enter Loss of Feedwater Heating. |
| D. The Bypass Valves will NOT control pressure; enter Reactor Scram.             |

Explanation: The scram is bypassed at <40% power, the bypass valves can pass ~35% steam flow and the loss of turbine steam flow will cause a loss of feedwater heating.

|                |                            |                    |
|----------------|----------------------------|--------------------|
| Answer         | Reference:                 | Question Pedigree: |
| <b>A</b>       | 5007-01 Rev 25, LP85239-05 | <b>New</b>         |
| Objective:     | Cognitive Level:           | Difficulty:        |
| LP85239 .1.4.1 | <b>2</b>                   | <b>3.3</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 41      | RO   | 245000 | 2.1.33 |

The number one bypass valve has failed open. Which of the following conditions would require entry into Tech. Spec. 3.3.2.1 Control Rod block instrumentation?

- A. Reactor power 75% and the hi power setpoint LED is lit.
- B. Reactor power 65% and the hi power setpoint LED is lit.
- C. Reactor power 75% and the lo power alarm point LED is lit.
- D. Reactor power 50% and the lo power alarm point LED is lit.

Explanation:

A, B, & D – RWL is considered operable.

Answer

C

Objective:

Reference:

CPS 3304.02 Rev. 14b

Cognitive Level:

1

Question Pedigree:

New

Difficulty:

3.5

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 42      | RO   | 256000 | A2.04 |

A loss of power to the non-vital AC buses has occurred and power has subsequently been restored.

Which of the following describes:

1. the impact of the above conditions on 1CD039, SJAE Minimum Flow Valve?
  2. The action necessary to correct the condition?
- |    |   |
|----|---|
| A. | 1. 1CD039 will fail open causing the condensate system to drain to the condenser.<br>2. Place 1B21-F304A and 304B, MS to SJAE 1A(1B) in NEUTRAL/AFTER CLOSED. |
| B. | 1. 1CD039 will fail open causing the condensate system to drain to the condenser.<br>2. Place 1CD039, SJAE Minimum Flow Valve in AUTO.                        |
| C. | 1. 1CD039 will failed closed causing overheating of the SJAE Condenser.<br>2. Place 1B21-F304A and 304B, MS to SJAE 1A(1B) in NEUTRAL/AFTER CLOSED.           |
| D. | 1. 1CD039 will failed closed causing overheating of the SJAE Condenser.<br>2. Place 1CD039, SJAE Minimum Flow Valve in AUTO.                                  |

Explanation:

Closing 1B21-F304A and 304B will cause 1CD039 to close.

Answer

**A**

Objective:

Reference:

CPS 4200.01 Rev. 14

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

| Question: | Exam | System | KA     |
|-----------|------|--------|--------|
| # 43      | SRO  | 259001 | 2.1.32 |

- Unit is Shutdown.
- Shutdown Cooling is in service.
- Reactor Pressure is 52 psig and stable.
- Main Steam lines are isolated.

Which of the following describes the expected position of the 1B21-F065A & B, Feedwater Shutoff Valve, and the USAR basis for their position?

- A. Open; to reduce thermal cycling of the feedwater nozzles.
- B. Open; to provide a Shutdown Cooling path to the vessel.
- C. Closed; to prevent damage to the inboard Feedwater Check Valves.
- D. Closed; to provide long term leakage protection.

Explanation:

- A. Feedwater makeup is not needed.
- B. Shutdown cooling returns downstream of the F065s
- C. Shutdown cooling flow is sufficient to prevent check valve damage.

Answer

**D**

Objective:

LP85259 .1.15

Reference:

USAR 6.2.4.3.2.1.1.1, LP85259-06

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.5**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 44      | RO   | 259002 | A4.10 |

Feedwater Level Control Setpoint Setdown (SPSD) has been initiated.

Which of the following describes the initiation and reset logic of SPSP?

- A. Initiated immediately when RPV level drops below Level 3; reset manually when level rises above Level 3.
- B. Initiated when RPV level drops below Level 3 for 10 seconds; reset manually when level rises above Level 3.
- C. Initiated immediately when RPV level drops below Level 3; reset automatically when level rises above Level 3.
- D. Initiated when RPV level drops below Level 3 for 10 seconds; reset automatically when level rises above Level 3.

Explanation:

B. There is no time delay in the initiation of SPSP.

C. & D. SPSP does not automatically reset when level rises above Level 3.

Answer

**A**

Reference:

LP87570-01

Question Pedigree:

**CPS Exam Bank Question #6226**

**modified**

Difficulty:

**3.0**

Objective:

LP87570 .1.7.1

Cognitive Level:

**1**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 45      | RO   | 259002 | K3.01 |

The plant is operating at 100% reactor power with 2 Turbine Driven Reactor Feed Pumps (TDRFPs) running in automatic on the Master Level Controller with the level set tape at 35 inches.

The reactor water level transmitter selected for input to the Feedwater Level Control System fails to an indicated level of 33 inches.

Assuming no operator action, which of the following best describes the initial plant response?

- A. RCIC initiates as reactor water level lowers to Level 2.
- B. Reactor water level will remain at 35 inches.
- C. MDRFP auto starts as reactor water level lowers to Level 3.
- D. Reactor Scrams as reactor water level rises to Level 8.

Explanation:

The indicated level will be < programmed level so the feed pumps will raise flow to try and bring indicated back up to programmed level. Even though indicated level will not rise, actual level will rise until it hits Level 8 and the Scram occurs.

Answer

**D**

Objective:

LP87570 .1.8.2

Reference:

LP87570-01

Cognitive Level:

**2**

Question Pedigree:

**CPS Exam Bank Question #4043**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 46      | <b>BOTH</b> | <b>261000</b> | <b>K6.09</b> |

A LOCA has occurred. Drywell pressure is 4.4 psig and rising at + 0.1 psig/10 min. Containment pressure is 2.8 psig and rising at + 0.05 psig/20 min.

With respect to containment purge, SGTS train 'A' is:

- |  |
|--|
| A. Available; currently running due to high drywell pressure but must be manually aligned to containment purge by opening the SGTS Train 'A' Drywell Purge Inlet Damper (1VG01YA).                       |
| B. Available; currently in standby but the SGTS, Exhaust Fan 'A' (0VG02CA) must be manually started and aligned to containment purge by opening the SGTS Train 'A' Drywell Purge Inlet Damper (1VG01YA). |
| C. Unavailable, currently running due to high drywell pressure, but the SGTS Train 'A' Drywell Purge Inlet Damper (1VG01YA) isolated on high containment pressure.                                       |
| D. Unavailable, the SGTS, Exhaust Fan 'A' (0VG02CA) trips on high containment pressure.  |

Explanation: 1VG01YA isolates at 2.56 psid containment pressure.

|                |                  |                    |
|----------------|------------------|--------------------|
| Answer         | Reference:       | Question Pedigree: |
| <b>C</b>       | LP85455-02       | <b>New</b>         |
| Objective:     | Cognitive Level: | Difficulty:        |
| LP85455 .1.5.1 | <b>2</b>         | <b>3.0</b>         |



# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 47      | <b>BOTH</b> | <b>262002</b> | <b>A3.01</b> |

Annunciator 5012-5A, TROUBLE COMPUTER UPS 1A is received in the Main Control Room due to an inverter failure.

Which of the following indicates that the transfer to the alternate source was unsuccessful?

- A. Main Turbine Trips
- B. Reactor Recirc Flow Control Valves runback
- C. MSIV Position Indication is lost
- D. SDV Vent & Drain Valve Position Indication is lost

Explanation:

- A. Main Turbine trips are powered from UPS 1B
- C. MSIV Indication is powered from NSPS
- D. SDV Vent & Drain Valve position is powered from NSPS

|            |  |                    |
|------------|--|--------------------|
| Answer     | Reference:                                   | Question Pedigree: |
| <b>B</b>   | CPS 3509.01 Appendix A, B, C, & D<br>Rev. 14 | <b>New</b>         |
| Objective: | Cognitive Level:                             | Difficulty:        |
|            | <b>1</b>                                     | <b>4.5</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 48      | <b>BOTH</b> | 264000 | <b>A2.09</b> |

- Unit at rated conditions
- Surveillance CPS 9080.02, DG 1C OPERABILITY – MANUAL AND QUICK START OPERABILITY being performed.
- Parallel with O/S power source (RAT)

RAT breaker trips due to faulty trip coil.

Which of the following 1) identifies expected response; 2) is the required actions per CPS 9080.02, DG 1C OPERABILITY – MANUAL AND QUICK START OPERABILITY?

- |   |
|---|
| A. Offsite power source will auto transfer; DG output breaker will trip; reset the speed droop to zero. |
| B. DG will remain on bus; push off-site source permissive button.                                       |
| C. ERAT Breaker will close and DG will remain in parallel; adjust frequency and voltage.                |
| D. DG will remain on bus; reset speed droop to zero and adjust frequency and voltage.                   |

Explanation:

Answer  
**D**  
Objective:

Reference:  
CPS 9080.02 Rev. 44e  
Cognitive Level:  
**2**

Question Pedigree:  
**New**  
Difficulty:  
**3.5**

# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 49      | SRO  | 233000 | 2.4.11 |

- Plant is in Mode 5.
- Reactor Cavity Pool Level is normal.
- FC is supplying Upper and Lower Fuel Pools .
- Lake temperature is 54°F and stable.
- Fuel Pool Cooling (FC) is being cooled by Shutdown Service Water (SX) using 'A' FC Heat Exchanger.
- Spent Fuel Pool temperature is 72°F as indicated on MCR recorder and dropping at 4°F/hr.
- Manually throttling Fuel Pool HX 1A Outlet Valve (1SX062A) does NOT have any affect.

Would operator action to re-align FC allow continued operation?

If Yes, what action would be required? If No, why not?

- |  |
|--|
| A. No; there is no FC low temperature limit.                   |
| B. No; lake temperature is above the low FC temperature limit. |
| C. Yes; slowly isolate flow to 'A' FC heat exchanger.          |
| D. Yes; route partial flow through 'B' FC heat exchanger.      |

Explanation:

Flow is routed through the out-of-service heat exchanger MCR recorder lower limit is 70°F. Values less than or equal to 70° must be determined locally.

Answer

**D**

Objective:

LP86233 .1.6.12

Reference:

CPS 3317.01, 8.2.2 Rev. 20d

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**4.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 50      | <b>BOTH</b> | 268000 | <b>A2.01</b> |

A rupture has occurred on the Main EHC system on the supply line to the Turbine Stop Valve #3.

Which collection tank would be impacted if oil were to drain to Radwaste, and what actions should be taken to mitigate the consequences?

A. WF Collection Tank; prevent the oil from entering the floor drains.

B. WE Collection Tank; prevent the oil from entering the floor drains.

C. WF Collection Tank; direct the oil to the closest floor drain.

D. WE Collection Tank; direct the oil to the closest floor drain.

Explanation:

B. & D. Oil would flow to floor drains which would flow to the WF Collection Tanks not the WE Collection Tanks

C. Need to prevent the oil from getting into the floor drains.

Answer

**A**

Objective:

LP85248 .1.6

Reference:

CPS 3105.04 Rev. 7a

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.7**

# Clinton Power Station

## 2001 ILT Exam

| Question: | Exam        | System | KA           |
|-----------|-------------|--------|--------------|
| # 51      | <b>BOTH</b> | 271000 | <b>A2.07</b> |

|  |
|--|
| Which of the following indicates an ALERT alarm on IRIX-PR039 'B' SX Effluent PRM?<br>Channel value backlit: |
| A. Red   |
| B. Yellow  |
| C. White   |
| D. Gray  |

**Explanation:**

Red Hi Alarm

Yellow Alert

White Trouble/Status

Gray Normal

Answer

**B**

Objective:

LP85273 .1.11.7

Reference:

5140.51 Rev. 0, LP85273-02

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 52      | BOTH | 286000 | A4.04 |

|  |
|--|
| Which of the following would be the first indication of a degrading fire protection jockey pump? |
| A. Fire header pressure indication on 1H13-P840 panel would lower.                               |
| B. 1H13-P841 (XL3) panel alarm for Low Fire Protection System Pressure.                          |
| C. Automatic start of diesel fire pump 'A' (0FP01PA).  |
| D. Automatic start of horizontal fire pump (0FP03P).   |

Explanation:

- A. Fire header pressure is not indicated on 1H13-P840.
- B. Low Fire Protection system pressure is not alarmed.
- D. The horizontal Fire Pump does not auto start.

Answer

C

Objective:

Reference:

CPS 3213.02M001 Rev. 1

Cognitive Level:

1

Question Pedigree:

New

Difficulty:

2.0

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |              |
|-----------|-------------|--------|--------------|
| Question: | Exam        | System | KA           |
| # 53      | <b>BOTH</b> | 286000 | <b>K4.07</b> |

|  |
|--|
| Which of the following describes the expected response to a decreasing oil pressure condition of a running Diesel Fire Pump? |
| A. Alarm locally and in the MCR; pump trip.  |
| B. Alarm locally and in the MCR; run until failure.  |
| C. Alarm locally only; pump trip.  |
| D. Alarm locally only; run until failure.  |

**Explanation:**

A, B, & C - 'Low Lube Oil Pressure' does not stop the Diesel Fire Pump engine. It sounds a local 'Engine Failure' alarm and is annunciated in the Main Control Room.

Answer

**B**

Objective:

LP85286 .1.5.4

Reference:

LP85286-03

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**2.6**

# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 54

RO

288000

A3.01

Which of the following will result in automatic closure of the Control Room Train 'A' Maximum Outside Air Dampers (0VC48YA and 49YA)?

- A. High Radiation levels at the east OR west intake.
- B. High Radiation level at the east AND west intake.
- C. High smoke concentrations at the east OR west intake.
- D. High smoke concentrations at the east AND west intake.

Explanation:

Both outside air intakes must have High Radiation to cause this to occur.

Answer

**B**

Objective:

85447.1.4.1

Reference:

LP85447-03

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.8**



# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 55

**BOTH**

290001

**A1.01**

- Fuel building pressure is  $-0.25$  inwc
- SBTG is in standby
- An operator has been assigned to start fuel building HVAC.

The operator correctly aligned the dampers and started the first fan. Which of the following describes the response of fuel building and running fan if no additional operator action is taken?

Fuel building pressure will \_\_\_\_\_ (1) \_\_\_\_\_ until the running fan trips at \_\_\_\_\_ (2) \_\_\_\_\_.

|    | (1)   | (2)        |
|----|-------|------------|
| A. | Rise  | + 1.0 inwc |
| B. | Rise  | 0.0 inwc   |
| C. | Lower | -0.75 inwc |
| D. | Lower | -1.75 inwc |

Explanation:

The exhaust fan is always started first. Without a supply fan running, pressure will decrease until fan trips at  $-1.75$  inwc.

Answer

**D**

Objective:

1.6.4

Reference:

LP85449-01

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 56      | <b>BOTH</b> | <b>290001</b> | <b>K4.02</b> |

Fuel Building Exhaust fan 1A (1VF04CA) trips due to motor fault, what prevents excessive building pressure?

- A. Fuel Building Supply Fan 1A (1VF03CA) trips immediately
- B. Fuel Building Supply Fan 1A (1VF03CA) trips on high building pressure
- C. Exhaust Flow Control Damper (1VF11YA) opens immediately.
- D. Exhaust Flow Control Damper (1VF11YA) opens on high building pressure.

**Explanation:**

The Supply Fan does not trip if the Exhaust Fan trips, instead it will cause pressure in the building to rise until the Supply Fan trips on high building pressure.

Answer

**B**

Objective:

LP85449 .1.4.1

Reference:

LP85449-01

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 57      | <b>BOTH</b> | <b>290003</b> | <b>K6.01</b> |

Main Control Room Ventilation (VC) Train "A" was running in the NORMAL mode when Offsite Power was temporarily lost to the Division I 4160 kV bus 1A1. Vital bus power was promptly restored by the Emergency Diesel Generators.

Which of the following describes the Control Room HVAC system response to the Loss of Power?

- A. Train 'A' will automatically re-start in the NORMAL mode.
- B. Train 'B' will automatically start in the NORMAL mode.
- C. Train 'B' will automatically start immediately and Train "A" will automatically start when Bus 1A1 is re-energized.
- D. Neither train will automatically start. The operator will have to manually start a VC train.

Explanation:

VC does not have an auto start.

Answer

**D**

Objective:

Reference:

LP85447-03

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #7191**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 58      | SRO  | 294001 | 2.1.4 |

The plant is at rated conditions.

Which of the following describes the minimum Tech Spec manning requirements for the position listed?

- A. One Chemistry Technician present on site.
- B. One Radiation Protection Technician present on site.
- C. Two Reactor Operators present in the Main Control Room.
- D. Two Non-Licensed Operators present in the Power Block.

Explanation:

- A. Chemistry Technician not required
- C. Only one Reactor Operator required in the Control Room
- D. Non-Licensed Operators are required to be on-site.

Answer

**B**

Objective:

LP87592 .1.1

Reference:

Tech. Spec. Section 5.2.2

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**2.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 59      | BOTH | 294001 | 2.1.8 |

Performance of 9813.01, Control Rod Scram Timing, requires:

- A. Notification and approval of the RO "at the controls".
- B. The approval of the Control Room Supervisor and notification of the RO "at the controls".
- C. The approval of the Work Coordination Supervisor and notification of the RO "at the controls".
- D. Notification and approval of the Work Week Manager.

Explanation:

CRS approval and RO notification is required.

Answer

**B**

Reference:

CPS 1001.05 Rev. 8

Question Pedigree:

**CPS Exam Bank Question #3764**

**Modified**

Objective:

Cognitive Level:

**1**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 60      | RO   | 294001 | 2.1.11 |

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>The plant is at rated conditions.</li> <li>RCIC is running per scheduled surveillances.</li> <li>Suppression pool temperature is 104.5 °F.</li> <li>RHR A loop is running in Suppression Pool cooling.</li> </ul> | Ensure that T.S. Reference is NOT given out. |
|--|--|

Which of the following actions should be taken first?

- |                                   |
|-----------------------------------|
| A. Start RHR B loop in SP cooling |
| B. Secure RCIC                    |
| C. Scram the reactor              |
| D. Start "A" SX pump              |

**Explanation:**

Action required immediately by T.S. if SP temp > 103.7°F and thermal power > 1% and test that adds heat to pool.

**Answer**

**B**

**Objective:**

**Reference:**

TS 3.6.2.1

**Cognitive Level:**

**2**

**Question Pedigree:**

**New**

**Difficulty:**

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |        |
|-----------|-------------|--------|--------|
| Question: | Exam        | System | KA     |
| # 61      | <b>BOTH</b> | 294001 | 2.1.14 |

|   |
|---|
| What is the minimum required power change within 1 hour requiring Chemistry notification? |
| A. 5%   |
| B. 10%  |
| C. 15%  |
| D. 20%  |

**Explanation:**

When power is changed by more than 15% in 1 hour, notify Chemistry to perform applicable sections of CPS 9940.01, Weekly Chemistry Surveillance Log.

|            |                      |                    |
|------------|----------------------|--------------------|
| Answer     | Reference:           | Question Pedigree: |
| C          | CPS 3005.01 Rev. 23a | New                |
|            | CPS 3006.01 Rev. 29  |                    |
| Objective: | Cognitive Level:     | Difficulty:        |
|            | 1                    | 2.5                |

# Clinton Power Station

## 2001 ILT Exam

| Question: | Exam | System | KA     |
|-----------|------|--------|--------|
| # 62      | SRO  | 294001 | 2.1.22 |

- A scram condition is present.
- Immediate operator actions for scram have been performed.
- Reactor Power is 30%.

What mode is the plant in and what procedure is directing crew response?

- A. Mode 1, EOP1, RPV Level Control
- B. Mode 1, EOP1A, ATWS RPV Control
- C. Mode 3, EOP1, RPV Level Control
- D. Mode 3, EOP1A, ATWS RPV Control

Explanation:

Immediate operator actions for scram require mode switch to be placed in Shutdown.

Mode 3 Mode Switch in Shutdown and Temperature greater than 200°F

EOP-1A Scram required and reactor power greater than 5% and Shutdown criteria not met.

Answer

**D**

Reference:

CPS 4100.01 Rev. 17

T.S. Definitions 1.1

Cognitive Level:

**2**

Question Pedigree:

**New**

Objective:

LP87553 .1.1

LP87620 .1.2

Difficulty:

**3.5**



# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 63      | SRO  | 294001 | 2.2.5 |

Which of the following procedure changes requires a 50.59 evaluation?

- A. Correcting step numbers in a procedure note.
- B. Adding a new valve stroke time to check.
- C. Adding a drawing or figure for clarification.
- D. Correcting organizational titles.

Explanation:

A, C, & D are administrative changes.

Answer

**B**

Objective:

Reference:

CPS 1005.06 F001 Rev. 4

Cognitive Level:

1

Question Pedigree:

New

Difficulty:

2.5

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 64      | RO   | 294001 | 2.2.11 |

A Temporary Modification is being removed by it's implementing Work Order. Who has final responsibility for ensuring plant configuration is restored to normal?

- A. Work Week Manager or Shift Manager
- B. Shift Manager or System Manager
- C. Work Week Manager or Work Coordination Supervisor
- D. Shift Manager or Work Coordination Supervisor

**Explanation:**

A, B, & C, SM or WCS SRO has final responsibility for ensuring configuration returned to normal as part of Temporary Modification removal.

Answer

**D**

Objective:

Reference:

1014.03 Rev. 20

Cognitive Level:

**1**

Question Pedigree:

**Cooper 98 RO Exam Question #98**

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 65      | SRO  | 294001 | 2.2.25 |

During certain conditions, RTP is required to be less than 25%.

1) What are the conditions when this limit is applicable and, 2) what is the basis for the limit?

A. 1) Reactor pressure < 785 psig OR < 10% core flow;  
 2) Full scale ATLAS test data indicates that damage would not occur unless thermal power was > 50% RTP for these conditions.

B. 1) Reactor pressure < 785 psig AND < 10% core flow  
 2) Full scale ATLAS test data indicates that damage would not occur unless thermal power was > 50% RTP for these conditions.

C. 1) Reactor pressure < 785 psig OR < 10% core flow;  
 2) GE critical power correlations indicate that onset of transition boiling would not occur unless thermal power was > 50% RTP for these conditions.

D. 1) Reactor pressure < 785 psig AND < 10% core flow  
 2) GE critical power correlations indicate that onset of transition boiling would not occur unless thermal power was > 50% RTP for these conditions.

Explanation:

- 1) T.S. 2.1.1.1 states "with reactor steam domw pressure < 785 psig or core flow < 10% rated core THERMAL POWER shall be  $\leq$  25% RTP."
- 2) T.S. 2.1.1.1. bases states "For operation at low pressures or low flows the full scale ATLAS test is used."

Answer

**A**

Objective:

LP87621 .3.1

Reference:

TS 2.1.1 and bases

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**4.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |        |
|-----------|-------------|--------|--------|
| Question: | Exam        | System | KA     |
| # 66      | <b>BOTH</b> | 294001 | 2.2.28 |

- Plans are underway to withdraw the rod with the highest reactivity worth for SDM verification.
- Personnel are working on the bridge above the core.

Which of the following describes the lowest permissible water level to permit the personnel to continue work on the bridge during the rod withdrawal?

- A. Above the main steam lines
- B. At the RPV flange
- C. 22 ft. 8 in. above the RPV flange
- D. 23 ft. above the RPV flange

### Explanation:

In accordance with CPS 3703.01 Precaution 4.15 "Whenever a control rod surrounded by fuel is being withdrawn, all personnel shall be at least out of line-of-sight of the core unless: Reactor Cavity is flooded to 22' 8" above the RPV flange.

|            |                     |                    |
|------------|---------------------|--------------------|
| Answer     | Reference:          | Question Pedigree: |
| <b>C</b>   | CPS 3703.01 Rev.22b | <b>New</b>         |
| Objective: | Cognitive Level:    | Difficulty:        |
|            | <b>1</b>            | <b>3.0</b>         |

# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 67      | RO   | 294001 | 2.2.33 |

|  |      |     |
|--|------|-----|
| The Banked Position Withdrawal Sequence (BPWS) applies from ____ (1) ____ control rod density to at least ____ (2) ____ power. |      |     |
|  | (1)  | (2) |
| A.   | 0%   | 20% |
| B.   | 0%   | 30% |
| C.   | 100% | 20% |
| D.   | 100% | 30% |

**Explanation:**

CPS 2202.01 states “ Between 0% (100% control rod density) and 20% the control rod sequence must meet the requirements of the Banked Position Withdrawal Sequence (BPWS) rules...”

Answer

**C**

Reference:

CPS 2202.01 Rev. 15

Question Pedigree:

**Dresden 2001 NRC Exam**

**Question # 115**

Objective:

LP87401 .1.1.1

Cognitive Level:

**2**

Difficulty:

**3.5**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 68      | SRO  | 294001 | 2.3.1 |

Given that a 22 year old operator is working in a radiation field under the following conditions:

- The operator's cumulative dose for the year is 940 mrem.
- Job is in a 20 mrem/hr radiation area
- No dose extension has been authorized.

Select the number of hours the operator may work in the radiation area without exceeding the administrative limit for the year?

- A. 3
- B. 28
- C. 53
- D. 103

Explanation:

Administrative limit is 2000 mrem/yr. This leaves the operator with 1060 mrem available,  
 $1060\text{mrem} / 20\text{mrem/hr} = 53 \text{ hrs.}$

Answer

C

Reference:

1024.15 Rev. 14

Question Pedigree:

**CPS Exam Database Question #6984**

**Modified**

Difficulty:

**3.5**

Objective:

LP85757 .1.14

Cognitive Level:

**2**

# Clinton Power Station 2001 ILT Exam

|           |             |               |              |
|-----------|-------------|---------------|--------------|
| Question: | Exam        | System        | KA           |
| # 69      | <b>BOTH</b> | <b>294001</b> | <b>2.3.2</b> |

An operator has a clearance that requires second or independent verification.

For which of the following conditions can the Tagging Authority waive independent verification?

- |   |
|---|
| A. A Danger tag to be hung on the 1E12-F006B shutdown cooling suction valve handwheel                           |
| B. A Danger tag to be hung on the 1CP-MV1A condensate polisher A inlet valve control switch at 1PL03J, TB 712'. |
| C. A Special Condition tag to be hung on the 1CO01T CO2 compressor disconnect switch                            |
| D. A Special Condition tag to be hung on the breaker for 1WS002A at Screenhouse MCC 1A.                         |

Explanation:

The Tagging Authority may waive verification requirements when verification may incur radiation exposure in excess of 10 mRem.

Answer

**A**

Objective:

Reference:

1014.01, 8.5.3 Rev. 31a

Cognitive Level:

**2**

Question Pedigree:

**NEW**

Difficulty:

**2.8**

# Clinton Power Station

## 2001 ILT Exam

| Question: | Exam | System | KA    |
|-----------|------|--------|-------|
| # 70      | RO   | 294001 | 2.3.4 |

|  |
|--|
| Which one of the following is the once in a lifetime exposure limit for saving a life? |
| A. 35 rem  |
| B. 25 rem  |
| C. 15 rem  |
| D. 5 rem   |

**Explanation:**

In accordance with RA-03 section 4.2.1.2, "The dose resulting from such emergency exposure should be limited as follows: 25 rem for the performance of lifesaving operations."

Answer

**B**

Objective:

LP88501 .1.3

Reference:

RA-03 Rev. 5

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #8429**

Difficulty:

**2.8**



# Clinton Power Station

## 2001 ILT Exam

|           |      |        |       |
|-----------|------|--------|-------|
| Question: | Exam | System | KA    |
| # 71      | SRO  | 294001 | 2.3.9 |

|   |
|---|
| In accordance with the Caution in the EOP Support Procedure, what is the maximum area temperature at which SGTS may be used in Containment Purge mode to avoid igniting the charcoal bed? |
| A. 451°F  |
| B. 330°F  |
| C. 212°F  |
| D. 140°F  |

**Explanation:**

Caution in CPS 4411.06 states "Do not use SGTS if evacuated area is >212°F due to potential to ignite the charcoal beds.

Answer

**C**

Reference:

4411.06 section 2.8 Rev. 4

Question Pedigree:

**CPS Exam Bank Question #4151**

**Modified**

Difficulty:

**2.0**

Objective:

LP87558.1.3.6

Cognitive Level:

**1**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |               |
|-----------|-------------|---------------|---------------|
| Question: | Exam        | System        | KA            |
| # 72      | <b>BOTH</b> | <b>294001</b> | <b>2.3.10</b> |

Annunciator 5050-7M HI RADIATION CONT RM HVAC SYS DIV 1 has alarmed.

Associated monitors are reading.

|        |          |
|--------|----------|
| PR009A | 10mR/hr  |
| PR009B | 11 mR/hr |
| PR009C | 5 mR/hr  |
| PR009D | 3 mR/hr  |

From the information listed above, and the attached page from CPS 3402.01 determine the correct lineup the minimum air dampers should be placed in.

A. 0VC01YA open; 0VC01YB closed

B. 0VC01YA open; 0VC01YB open

C. 0VC01YA closed; 0VC01YB open

D. 0VC01YA closed; 0VC01YB closed

Explanation:

In accordance with CPS 3402.01, the minimum air damper with the lowest radiation level should be the damper that is opened.

Answer

**A**

Reference:

3402.01 section 8.3.3.7 and 8 Rev.  
18c

Question Pedigree:

**New**

Objective:

LP85447 .1.4.1

Cognitive Level:

**2**

Difficulty:

**3.0**

# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 73      | RO   | 294001 | 2.3.11 |

- Plant is at 100% power
- Condenser vacuum is 27.9" Hg and stable
- IRIX-PR041 OG post treat PRM is in normal
- IRIX-PR035 OG post treat PRM is in standby

Which of the following conditions will automatically stop an excessive radiation release to the HVAC stack?

- |  |
|--|
| A. Loss of sample flow to both Post Treatment PRMs           |
| B. Total loss of service air to isolation valve (1N66-F060). |
| C. Total loss of DC power to isolation valve (1N66-F060).    |
| D. Loss of AC power to either Post Treatment PRM             |

Explanation:

To stop an excessive radiation release 1N66-F060 would close.

- B. 1N66-F060 fails open on a total loss of service air.
- C. 1N66-F060 is an air operated valve
- D. Need loss of AC and DC to either Post Treatment PRM.

Answer

**A**

Objective:

LP85271 .1.4.1

Reference:

LP85271-02

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.5**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 74      | <b>BOTH</b> | 294001 | <b>2.4.12</b> |

|  |
|--|
| Identify the lowest emergency classification for which OSC personnel are to automatically report to the OSC. |
| A. Unusual Event   |
| B. Alert   |
| C. Site Area Emergency   |
| D. General Emergency   |

### Explanation:

In accordance with the E-Plan section 3.1.3.2, "The OSC shall be activated and staffed in a timely manner for an ALERT, SITE AREA EMERGENCY, and GENERAL EMERGENCY.

Answer

**B**

Objective:

LP87536 .1.4.1

Reference:

E-Plan section 3.1.3.2

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #9079**

Difficulty:

**2.8**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 75      | RO   | 294001 | 2.4.18 |

Which of the following explains why EOP-1A ATWS RPV Control lists Low Pressure Core Spray (LPCS) as an alternate rather than a preferred injection source to flood the RPV during an ATWS?

- A. LPCS does not have the required flow rate to assure adequate core cooling during the floodup.
- B. LPCS cannot maintain the required 261 psid with three SRVs opened that is needed to assure adequate core cooling.
- C. The SLC boron concentration requirement of technical specifications assumes that no systems are injecting inside the shroud and diluting the mixture.
- D. LPCS could cause power excursions since it injects inside the shroud.

**Explanation:**

EOP Technical Bases states that ECCS systems are not included in the "Preferred ATWS Systems" since they inject inside the shroud. The Tech Bases goes on to say that "injecting cold, unborated water inside the core shroud may cause a large power excursion.

Answer

**D**

Objective:

LP87553 .1.3.5

Reference:

EOP Technical bases

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #6831**

Difficulty:

**2.8**

# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 76

**BOTH**

294001

2.4.25

The minimum number of persons that is procedurally required to be available for fire brigade duties at all times is:

A. 4

B. 5

C. 6

D. 7

Explanation:

In accordance with CPS 1001.06 section 2.1.1, "A minimum of five personnel shall be available for fire brigade duties at all times..."

Answer

Reference:

Question Pedigree:

**B**

1001.06 section 2.1.1 Rev. 5

**CPS Exam Bank Question # 6054**

Objective:

Cognitive Level:

Difficulty:

LP87633 .1.7

**1**

**2.0**

# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 77      | SRO  | 294001 | 2.4.36 |

A plant transient has occurred. The following conditions exist:

- RPV level is -55" wide range and lowering at 1"/min.
- HPSC failed to start.
- RPV pressure is being maintained 800-1065 psig with Bypass Valves.
- Drywell pressure is 2.13 psig and rising at 1 psig/5 min.
- Containment pressure is 0.1 psig and stable.
- Immediate actions for Scram Off-Normal are complete.

Which of the following tasks should chemistry be directed to perform?

- |   |
|---|
| A. Obtain reactor coolant sample at Reactor Sample Station, 1G33-Z020.        |
| B. Obtain reactor coolant sample at PASS panel IPS02J/3J.                     |
| C. Obtain Drywell atmosphere sample at IRIX-PR023, Drywell CAM, sample point. |
| D. Obtain Drywell hydrogen sample at PASS panel, IPS02J/3J.                   |

Explanation:

Incorrect

A. & C. Containment is evacuated.

D. DW hydrogen is not sampled @ PASS panel and H2O2 monitors should be available.

Correct

B. Scram/Unit Shutdown requires a coolant sample.

Answer

**B**

Objective:

Reference:

3006.01 Rev. 29

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**4.0**

# Clinton Power Station

## 2001 ILT Exam

| Question: | Exam | System | KA     |
|-----------|------|--------|--------|
| # 78      | RO   | 295001 | 2.4.31 |

A startup is in progress with the following conditions:

- 'B' Reactor Recirc pump is OOS
- Reactor Power is 15%

The following annunciator is received:

RECIRCULATION MOTOR GENERATOR 'A' PROTECTIVE RELAY TRIP (5003-3C)

Which of the following is the first required action?

- A. Scram the reactor.
- B. Immediately attempt a pump restart.
- C. Close the 'A' RR pump discharge valve.
- D. Commence plant shutdown.

Explanation:

Annunciator procedure CPS 5003-3C has as an operator action to "proceed to CPS 4008.01, "Abnormal Reactor Coolant Flow". In accordance with CPS 4008.01, IMMEDIATE OPERATOR ACTIONS, "Scram the reactor if No RR pumps are operating with the mode switch in run.

|              |                     |                    |
|--------------|---------------------|--------------------|
| Answer       | Reference:          | Question Pedigree: |
| A            | CPS 4008.01 Rev. 17 | New                |
| Objective:   | Cognitive Level:    | Difficulty:        |
| LP87508 .1.2 | 2                   | 3.0                |



# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 79      | <b>BOTH</b> | 295002 | <b>AK2.07</b> |

What is the operational impact of high condensate system temperature on the off-gas system?

- A. Rising recombiner condenser drain flow.
- B. Intercondenser chugging and loss of vacuum.
- C. Rising intercondenser drain flow.
- D. Recombiner condenser chugging and loss of condenser vacuum.

**Explanation:**

High condensate system temperature can cause unstable steam condensation in the SJAE intercondenser. This phenomenon is known as chugging. SJAE chugging can cause a loss of the intercondenser loop seal, resulting in a loss of main condenser vacuum.

Answer

**B**

Reference:

LP85271-02

Question Pedigree:

**CPS Exam Bank Question #7417**

**Modified**

Difficulty:

**2.8**

Objective:

LP87271 .1.6.21

Cognitive Level:

**1**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |               |
|-----------|-------------|---------------|---------------|
| Question: | Exam        | System        | KA            |
| # 80      | <b>BOTH</b> | <b>295003</b> | <b>AA2.04</b> |

A Station Blackout has occurred.

Division I Diesel Generator is ready to be started to re-energize a dead ECCS bus.

Which of the following describes the actions that would be taken before starting the Division I DG and the reason for those actions?

- |  |
|--|
| A. Secure the RCIC Gland Seal Compressor; ensures adequate field flashing current is available to the DG when it is started. |
| B. Secure the RCIC Gland Seal Compressor; prevents the compressor from being load shed after the DG is started.              |
| C. Secure the Emergency Bearing Oil Pump; reduces starting load on the DG, which could cause the DG to trip on undervoltage. |
| D. Secure the Emergency Bearing Oil Pump; to prevent it from shunt tripping due to low voltage when the DG is started.       |

Explanation:

In accordance with CPS 4200.01 "For DG 1A start during a SBO: Stop the RCIC Gland Seal Air Compressor to ensure sufficient DG 1A field flashing current on the DG 1A start sequence.

Answer

**A**

Reference:

CPS 4200.01 4.2.4

Question Pedigree:

**CPS Exam Bank Question #8382  
modified.**

Objective:

LP87513 .1.2.4

Cognitive Level:

**2**

Difficulty:

**2.8**

# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 81      | BOTH | 295003 | AK3.02 |

An exciter fault occurs on "A" Circ Water Pump causing an overcurrent condition.

What would be the expected response and why?

- |   |
|---|
| A. The "A" Circ Water Pump Breaker Trips; to isolate the fault to prevent a loss of non-vital AC power. |
| B. The 6.9 Kv bus 1A locks out; to isolate the fault to prevent a loss of non-vital AC power.           |
| C. The "A" Circ Water Pump Breaker Trips; to isolate the fault to prevent a loss of vital AC power.     |
| D. The 6.9 Kv bus 1A locks out; to isolate the fault to prevent a loss of vital AC power.               |

Explanation:

- B. Selective tripping will cause the "A" Circ Water Pump to trip before the 6.9 Kv bus locks out.  
 C. & D. "A" Circ Water Pump & 6.9 Kv bus are non-vital.

Answer

**A**

Objective:

LP85738 .1.7

Reference:

LP85738

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**2.3**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 82      | <b>BOTH</b> | 295004 | <b>AK1.04</b> |

A Station Blackout (SBO) has occurred.

The crew is directed to:

- Reduce Main Generator hydrogen pressure.
- Secure the Emergency Seal Oil Pump.

What are these actions accomplishing and why?

- |   |
|---|
| A. Prevents damaging the Emergency Seal Oil pump due to low voltage on the 125 VDC bus.     |
| B. Prevents damaging the Emergency Seal Oil pump due to cavitation from low seal oil level. |
| C. Reduces load on the 125 VDC bus to extend the battery capability.                        |
| D. Reduces load on the 125 VDC bus to allow starting the Turning Gear Oil Pump.             |

Explanation:

A – pump would be lost before damage would occur.

B – A SBO does not create a low seal oil level.

D – Turning Gear Oil Pump is not on same bus so securing the ESOP would not matter.

Answer

Reference:

Question Pedigree:

**C**

CPS 4200.01

**New**

Objective:

Cognitive Level:

Difficulty:

**1**

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 83      | BOTH | 295006 | AK3.01 |

Which of the following describes the initial reactor water level response to a manual scram from rated conditions, and the reason?

Indicated reactor water level will . . .

- A. lower due to the collapsing voids in the core region.
- B. lower due to the water discharge to the Scram Discharge Volume.
- C. raise due to the lowering steam flow from the vessel.
- D. raise due to the water displaced by the inserting control rods.

Explanation:

B Water discharged to scram discharge volume comes mainly from the hydraulic control units and is insignificant in volume compared the level reduction in the vessel.

C & D Level would initially lower due to voids collapsing.

|                |                  |                    |
|----------------|------------------|--------------------|
| Answer         | Reference:       | Question Pedigree: |
| A              | LP87512-03       | New                |
| Objective:     | Cognitive Level: | Difficulty:        |
| LP87512 .1.4.1 | 2                | 3.0                |

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 84      | <b>BOTH</b> | 295007 | <b>AK1.01</b> |

|  |
|--|
| Which of the following describes the highest pressure where both LPCI and LPCS injection flow is expected following auto initiation? |
| A. 510 psig.   |
| B. 410 psig  |
| C. 310 psig.   |
| D. 210 psig.   |

Explanation:

A, B, & C - LPCI flow begins at 225 psid vessel pressure above drywell pressure.

|            |                  |                    |
|------------|------------------|--------------------|
| Answer     | Reference:       | Question Pedigree: |
| <b>D</b>   | LP85205-05       | <b>New</b>         |
| Objective: | Cognitive Level: | Difficulty:        |
|            | <b>2</b>         | <b>3.5</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 85      | <b>BOTH</b> | 295007 | <b>AK3.03</b> |

The plant was operating at 100% power when a Group 1 isolation occurred. Along with SRVs, which of the following is the preferred method of decay heat removal and why?

- A. HPCS. This minimizes SRV operation.
- B. HPCS. This minimizes moisture carryover.
- C. RCIC. This minimizes SRV operation.
- D. RCIC. This minimizes moisture carryover.

### Explanation:

In accordance with CPS 4100.01 RCIC is a major heat removal source and if it is preferred to keep RCIC running. By running RCIC it will act as pressure control to minimize the SRV lifting.

Answer

**C**

Objective:

LP85217 .1.1

Reference:

CPS 4100.01 Rev. 17

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 86      | SRO  | 295008 | 2.1.14 |

You are the Control Room Supervisor

- Reactor water level transient caused level to spike to 53 inches and then stabilize at 36 inches.
- No automatic action occurred.

What procedure would be required to be entered for these conditions and who would have to be notified?

A. CPS 4100.01, Reactor Scram; All onsite personnel via plant announcement.

B. CPS 3103.01, Feedwater; All onsite personnel via plant announcement.

C. CPS 4100.01, Reactor Scram; Plant Management only.

D. CPS 3103.01, Feedwater; Plant Management only.

Explanation:

Under these conditions a Reactor Scram should have occurred. Entry into CPS 4100.01 would be required. Annunciator CPS 5062-2D, REACTOR VESSEL WATER HIGH LEVEL 8 would have been received which directs the operator into CPS 4100.01, Reactor Scram.

Answer

**A**

Reference:

CPS 4100.01 Rev. 17

CPS 1401.07 Rev. 1

Cognitive Level:

**2**

Question Pedigree:

**New**

Objective:

LP87512 .1.1

Difficulty:

**4.0**



# Clinton Power Station

## 2001 ILT Exam

|           |             |               |               |
|-----------|-------------|---------------|---------------|
| Question: | Exam        | System        | KA            |
| # 87      | <b>BOTH</b> | <b>295008</b> | <b>AK3.07</b> |

HPCS is injecting to the reactor when level rises to 55 inches.

Which of the following is the effect on HPCS and the reason why?

- A. HPCS pump will trip to prevent overpressurizing the reactor vessel.
- B. HPCS Pump will trip to prevent overflow into the steam lines.
- C. HPCS injection valve will shut to prevent overpressurizing the reactor vessel.
- D. HPCS Injection valve will shut to prevent overflow into the steam lines.

Explanation:

A Level 8 signal is reached at 52 inches. In accordance with the Technical Specification bases the Level 8 signal is used to close the HPCS injection valve to prevent overflow into the main steam lines.

Answer

**D**

Reference:

Tech Spec 3.3.5.1 bases  
LP85380-02

Question Pedigree:

**New**

Objective:

LP85380 .1.2.5

Cognitive Level:

**2**

Difficulty:

**2.5**

# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 88      | RO   | 295009 | AA2.01 |

- A Seismic Event has occurred resulting in a DBA LOCA.
- The plant has scrammed.
- The A Recirculation Pump 6.9 kV breakers CB-3, 4 and 5A 125 VDC control power fuses have all blown.

Reactor level quickly lowers and indicates:

|                 |       |
|-----------------|-------|
| Shutdown Range: | 1"    |
| Upset Range:    | 0"    |
| Narrow Range:   | 3"    |
| Wide Range:     | -160" |
| Fuel Zone:      | -178" |

Actual vessel level:

- |   |
|---|
| A. Can ONLY be determined by the Fuel Zone as it is qualified to function under post-LOCA conditions. |
| B. Can be determined. ALL instruments are OPERABLE with the Fuel Zone being the only one on scale.    |
| C. Can be determined. ONLY the Shutdown, Upset, Narrow and Wide Range should be used.                 |
| D. Can NOT be determined at this time.  |

Explanation:

The indicating band for the fuel zone of -112 to -312 is good ONLY if NO recirculation pumps are running. With all other instruments below their lower range of indication, level cannot be determined.

|                     |                  |                                      |
|---------------------|------------------|--------------------------------------|
| Answer              | Reference:       | Question Pedigree:                   |
| <b>D</b>            | LP85423-01       | <b>CPS Exam Bank Question #18270</b> |
| Objective:          | Cognitive Level: | Difficulty:                          |
| LP85423 .1.5 & .1.6 | <b>2</b>         | <b>3.8</b>                           |

# Clinton Power Station

## 2001 ILT Exam

Question:  
# 89

Exam  
**BOTH**

System  
295009

KA  
**AK2.02**

- The plant was at 100% rated power.
- Feedwater Master Level Controller was in AUTOMATIC three element control with the tapeset at 35 inches.

Which of the following describes the Feedwater Level Control system response to a valid Level 3 signal?

The Feedwater Level control system:

- A. will attempt to maintain level at 35 inches as set in by the tapeset on the Master Level Controller.
- B. will automatically shift to the Startup Level Controller and will attempt to maintain level at 18 inches.
- C. level DEMAND will rise initially and then lower after 10 seconds to a demand signal at 25 inches.
- D. level DEMAND will rise initially and then lower after 10 seconds to a demand signal at 18 inches.

Explanation:

FWLC is programmed to offset the initial shrink from the scram and then prevent a high level by changing its setpoint to a final value of 18 inches.

Answer  
**D**

Reference:  
LP87570-01

Question Pedigree:  
**CPS Exam Bank Question #3619**  
**modified**

Objective:  
LP87570 .1.7.1

Cognitive Level:  
**1**

Difficulty:  
**3.0**

# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 90      | SRO  | 295011 | 2.4.11 |

A Station Blackout has occurred.

How do you monitor containment temperature?

A. DC powered temperature indication on Remote Shutdown Panel

B. UPS powered recorders on P601

C. UPS powered DCS displays

D. IMs using RTD bridges

Explanation:

A., B., & C. Power will not be available to read these temperatures.

Answer

**D**

Objective:

LP87513 .1.6

Reference:

4200.01 Rev. 14

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.5**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |               |
|-----------|-------------|---------------|---------------|
| Question: | Exam        | System        | KA            |
| # 91      | <b>BOTH</b> | <b>295012</b> | <b>AA1.01</b> |

- The plant is near rated conditions.
- The "A" VP Chiller tripped due to a motor fault.
- The operator performs the Emergency Startup of the "B" VP Chiller per CPS 3320.01, Drywell Cooling System, but fails to open the 1SX020B, Drywell Chiller 1B Inlet Valve for the associated chiller.

Which of the following describes the expected chiller response when the operator depresses the Chiller START pushbutton?

- |  |
|--|
| A. The Chiller will start and run but will not remove heat from the Drywell. |
| B. The Chiller will start and run until it trips on low chill water flow.    |
| C. The Chiller will not start due to low refrigerent temperature.            |
| D. The chiller will not start due to low condenser inlet pressure.           |

Explanation:

The Chiller has a start interlock that prevents it from starting with a low condenser cooling water inlet pressure.

Answer

**D**

Objective:

LP85222 .1.8.11

Reference:

LP85222-02

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 92      | RO   | 295012 | AA2.01 |

Which of the following is used to determine if the Tech Spec limit on High Drywell Temperature has been exceeded?

- A. Average of all fourteen temperature instruments.
- B. Temperature instrument with the highest temperature.
- C. Average of the highest seven temperature instruments
- D. Average of the highest four instruments.

Explanation:

CPS 9000.01D001, Control Room Surveillance Log has the operator average all the Drywell temperatures.

|            |                          |                    |
|------------|--------------------------|--------------------|
| Answer     | Reference:               | Question Pedigree: |
| A          | Tech Spec B 3.6.5.5      | New                |
|            | CPS 9000.01D001 Rev. 44e |                    |
| Objective: | Cognitive Level:         | Difficulty:        |
|            | 1                        | 3.0                |

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 93      | SRO  | 295005 | AA2.04 |

From 100% power, a scram generated by Scram Discharge Volume High Water Level results in the following:

- Control rods DO NOT insert fully
- Reactor power 100%
- MSIVs remain open; Main Turbine remains on line with a Steam Bypass and Pressure Control setpoint of 944 psig.

Before any operator action is taken, a malfunction of the feedwater system results in RPV level rising to 54 inches.

For the given sequence of events, the Main Turbine will...

- A. Remain on line, and reactor pressure will stabilize at approximately 945 psig.
- B. Remain on line, and reactor pressure will stabilize at approximately 963 psig.
- C. Trip; bypass valves will open fully, and reactor pressure will rise until SRV(s) open.
- D. Trip; bypass valves will open, and reactor pressure will stabilize at approximately 963 psig.

Explanation:

The Main Turbine will trip at 52 inches RPV level and power will remain above the bypass valve capacity causing pressure to rise to the SRV setpoints.

Answer  
C

Reference:  
LP85245-01  
LP87241-01  
LP85239-05

Question Pedigree:  
CPS Exam Bank Question #20982

Objective:  
LP87241 .1.5.4  
LP85245 .1.25

Cognitive Level:  
2

Difficulty:  
3.0

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 94      | SRO  | 295014 | AA2.02 |

A RX startup is in progress with the following conditions:

- Below the point of adding heat
- No rod motion is currently being performed
- Annunciator 5005-2K SRM period is received
- DCS indication for SRM 'A' shows a 15 sec. period.
- Operator verifies no rod movement.

From this information determine what procedure should be entered.

- A. CPS 4007.02 Inadvertent Rod Movement
- B. CPS 4007.03 Rod Drop
- C. CPS 3304.02, Rod Control and Information System
- D. CPS 3304.01 Control Rod Hydraulic and Control

Explanation:

From CPS 4007.02 Rod Drop a symptom of rod drop is short period < POAH. No rod drift alarms have been received. CPS 3304.01 and 3304.02 would provide no benefit.

Answer

**B**

Objective:

LP87507 .1.1

Reference:

CPS 4007.03 Rev. 7

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.0**



# Clinton Power Station

## 2001 ILT Exam

|           |             |               |               |
|-----------|-------------|---------------|---------------|
| Question: | Exam        | System        | KA            |
| # 95      | <b>BOTH</b> | <b>295015</b> | <b>AK2.03</b> |

Following a reactor scram reactor power is 25%. The operator presses the "SCRAM VALVES" pushbutton in the Rod Control and Information System.

The resulting GREEN LED's on the full core display indicate:

- A. The scram pilot valve solenoids on each HCU are deenergized.
- B. The scram pilot air header is depressurized.
- C. That each HCU accumulator is pressurized.
- D. The scram inlet and outlet valves on each HCU are open.

Explanation:

The "Scram Valves" function checks the Scram Valve Limit Switches for position determination.

Answer

**D**

Objective:

LP87401 .1.1.5

Reference:

LP87401-02

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #7279**

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 96      | <b>BOTH</b> | 295015 | <b>AK3.01</b> |

An ATWS has occurred. CPS procedure 4411.08 Alternate Control Rod Insertion is being used to perform manual control rod insertion.

Why must the Rod Pattern Controller (RPC) be defeated and how is this accomplished?

- |   |
|---|
| A. ATWS rod positions may not match rod pattern in RCIS. Signal for Turbine First Stage pressure to RCIS is changed to indicate HIGHER power.                   |
| B. ATWS rod positions may not match rod pattern in RCIS. Signal for Turbine First Stage pressure to RCIS is changed to indicate LOWER power.                    |
| C. Position indication to rod pattern controller may be lost due to scram. Signal for Turbine First Stage Pressure to RCIS is changed to indicate HIGHER power. |
| D. Position indication to rod pattern controller may be lost due to scram. Signal for Turbine First Stage Pressure to RCIS is changed to indicate LOWER power.  |

Explanation:

The Control Rod Pattern does not match the pattern restraints of the Pattern Controller at high powers. The Pattern Controller uses Turbine First Stage Pressure to determine power with the Pattern Controller bypassed above 20% power.

|                |                  |                    |
|----------------|------------------|--------------------|
| Answer         | Reference:       | Question Pedigree: |
| <b>A</b>       | LP87401-02       | <b>New</b>         |
|                | LP87553-05       |                    |
| Objective:     | Cognitive Level: | Difficulty:        |
| LP87553 .1.5.3 | <b>2</b>         | <b>3.3</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 97      | <b>BOTH</b> | 295017 | <b>AA1.07</b> |

|   |
|---|
| Which of the following would indicate a need to enter EOP-9, RADIOACTIVE RELEASE CONTROL? |
| A. A high alarm reading on ORIX-PR003, SGTS PRM.  |
| B. A high alarm reading on ORIX-PR001, HVAC PRM.  |
| C. A SPDS SGTS release indicating 5.3 E-3 Ci/sec.   |
| D. A SPDS VENT STACK release indicating 2.3 E-2 Ci/sec.                                   |

### Explanation:

EOP-9 requires entry at ALERT level, summation of all gaseous effluent releases  $>2.2 \text{ E-2 Ci/sec}$ . SPDS calculates this as the sum of HVAC and SGTS release = Vent Stack.

|              |                  |                    |
|--------------|------------------|--------------------|
| Answer       | Reference:       | Question Pedigree: |
| <b>D</b>     | LP87560-05       | <b>New</b>         |
| Objective:   | Cognitive Level: | Difficulty:        |
| LP87560 .1.1 | <b>2</b>         | <b>3.5</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |        |
|-----------|-------------|--------|--------|
| Question: | Exam        | System | KA     |
| # 98      | <b>BOTH</b> | 295019 | AA1.01 |

A plant transient has occurred with a Group 1 Isolation. Current Plant Conditions are:

- Reactor Water Level -50 inches and rising @ 3 inches per minute.
- Reactor Pressure 950 psig and being controlled by SRVs.

Subsequent to that the following annunciator was received:

5040-6F, HIGH/LOW PRESS ADS 1A SUPPLY DIV 1 OR 2

ADS Instrument Air Hdr Pressure Indicators on P601 both read 148 psig and slowly lowering.

From these indications what could be the possible cause of the annunciator?

- |  |
|--|
| A. Compressed Gas Outboard Isolation Valves (1IA012A & 13A) automatically closed on Group 1.   |
| B. ADS Supply Header Inboard Isolation Valves (1IA012B & 13B) automatically closed on Group 1. |
| C. 1IA012A & 013A automatically closed, and 1IA012B & 013B switches were NOT in AUTO.          |
| D. 1IA012B & 013B automatically closed, and 1IA012A & 013A switches were NOT in AUTO.          |

Explanation:

- A These valves do not automatically close.
- B These valves automatically close on Group 2.
- C These valves are reversed – see correct answer D
- D 12B & 13B closed on Level 2, and if the 12A & 13A switches were not in auto they would not open.

|                |                  |                    |
|----------------|------------------|--------------------|
| Answer         | Reference:       | Question Pedigree: |
| <b>D</b>       | LP85301-03       | <b>New</b>         |
| Objective:     | Cognitive Level: | Difficulty:        |
| LP85301 .1.5.1 | <b>2</b>         | <b>3.5</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |               |
|-----------|-------------|---------------|---------------|
| Question: | Exam        | System        | KA            |
| # 99      | <b>BOTH</b> | <b>295020</b> | <b>AK1.05</b> |

Surveillance testing has produced a spurious LOCA initiation logic signal on the LPCS/RHR A initiation logic.

Shortly after the spurious signal annunciator 5050-5G LOW FLOW DW CHILLER 1A CHILLED WTR was received and Drywell Chiller 1VP04CA tripped

If no operator action was taken what would be the expected plant response?

- A. Drywell temperature would rise and stabilize below any trip setpoints because supplemental drywell cooling is still in service.
- B. Drywell temperature and pressure would rise until a valid high drywell pressure signal would be received.
- C. The trip of 1VP04CA would cause an automatic start of 1VP01CB which would prevent the rise of drywell pressure and temperature.
- D. Temperature would initially rise but Mixing Compressors would automatically start and ventilate the drywell holding temperature and pressure down.

Explanation:

A supplemental Drywell cooling is not sufficient to stabilize temperature and pressure.

C & D The Drywell Chillers and the Mixing Compressors do not automatically start.

Answer

**B**

Objective:

LP85222 .1.4.2

Reference:

LP85222-02

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 100     | <b>BOTH</b> | 295020 | <b>AK2.10</b> |

|  |
|--|
| From the following, choose the consequence of an inadvertent containment isolation of Component Cooling Water (CC) on the RE/RF System.                                    |
| A. Loss of cooling water to the sump and drain tank pump bearings, allowing them to overheat with possible bearing and pump damage; without pumps flooding could occur.    |
| B. High water temperature in the Drywell sump with possible flashing to steam resulting in leakage being collected as unidentified leakage when steam is condensed.        |
| C. Loss of cooling water to the sump and drain tank coolers, allowing hot water to be pumped to Radwaste which could cause personnel injury and/or equipment damage.       |
| D. High water temperatures in the Containment Floor Drain Sumps with possible flashing to steam, resulting in rising area airborne activity and rising personnel exposure. |

Explanation:

- A. Component Cooling Water does not cool the pumps.
- C. Hot water can be pumped to Radwaste without problems.
- D. Containment Floor Drain Sumps are not cooled by Component Cooling Water.

|                |                  |                                     |
|----------------|------------------|-------------------------------------|
| Answer         | Reference:       | Question Pedigree:                  |
| <b>B</b>       | LP85304-01       | <b>CPS Exam Bank Question #8299</b> |
| Objective:     | Cognitive Level: | Difficulty:                         |
| LP85304 .1.4.7 | <b>2</b>         | <b>3.5</b>                          |

# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 101

**BOTH**

**295021**

**AA1.01**

Which of the following systems can alone provide an approved, alternate method of Shutdown Cooling if the RHR System is unavailable?

A. Low pressure core spray

B. Shutdown service water system

C. Control rod drive hydraulics

D. Reactor water cleanup

Explanation:

RWCU is the only system listed that by itself will remove heat from the reactor.

Answer

**D**

Objective:

LP87299 .1.5

Reference:

LP87299-01

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #4025**

Difficulty:

**2.6**

# Clinton Power Station 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 102     | <b>BOTH</b> | 295023 | <b>AA1.02</b> |

| Failure of the Reactor Cavity Bellows could first be identified by which of the following indications? |   |                          |
|--|---|--------------------------|
|  | Fuel Pool Cooling<br>Storage Tank Level | Drywell<br>RF Sump Level |
| A.   | Lowering                                | Rising.                  |
| B.   | Lowering                                | Lowering.                |
| C.   | Rising.                                 | Rising.                  |
| D.   | Rising                                  | Lowering.                |

Explanation:

A failure of the reactor cavity bellows will result in FC water leaking into the Drywell.

Answer

**A**

Objective:

LP87298 .1.1

Reference:

4011.01 Rev. 4

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**2.5**



# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 103

**BOTH**

295023

**AK1.01**

Core Alterations are in progress.

What are the restrictions on performing surveillances during core alterations, and why are those restrictions imposed?

- A. No surveillances involving ECCS components may be performed as these systems may be needed to add water to the upper pools. Draining the upper pools may cause possibly lethal radiation levels in the containment and drywell.
- B. No surveillances shall be conducted that might drain the upper containment pools. Draining the upper pools may cause possibly lethal radiation levels in the containment and drywell.
- C. Only surveillances related to the refueling equipment may be performed. This is to minimize the distractions to the Main Control Room.
- D. Only surveillances that will not cause annunciators in the Main Control Room. This is to minimize the distractions to the Main Control Room.

Explanation:

CPS 3703.01, Limitation 6.11 states, "No maintenance or surveillance procedures shall be conducted which might inadvertently drain the upper containment pools during core alterations or irradiated core component movement. Draining the upper pools with irradiated fuel not seated in the core, UCP racks/ or IFTS may result in damage to the fuel assemblies and cause excessive and possibly lethal radiation levels in the containment and drywell.

Answer

**B**

Objective:

EM87781 .1.1.2

Reference:

CPS 3703.01 Rev. 22b

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**2**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 104     | <b>BOTH</b> | 295024 | <b>EK1.02</b> |

|   |
|---|
| What is the limiting component for Containment Pressure $\geq$ 46 psig? |
| A. Containment Vent Valves.   |
| B. Containment Equipment Hatch.   |
| C. Fuel Cladding.   |
| D. ECCS Pumps.  |

Explanation:

With pressure  $>45$  psig the containment vent valves will not open and decay heat could not be removed.

|                |                  |                    |
|----------------|------------------|--------------------|
| Answer         | Reference:       | Question Pedigree: |
| <b>A</b>       | SAG Tech Bases   | <b>New</b>         |
| Objective:     | Cognitive Level: | Difficulty:        |
| LP87558 .1.8.5 | <b>1</b>         | <b>2.7</b>         |

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 105     | SRO  | 295025 | 2.1.33 |

The reactor is in Mode 2 with startup in progress:

Which of the following would require Tech Spec Action Statement entry?

- A. Reactor pressure rises to 1049 psig.
- B. Reactor water level rises to 55 inches.
- C. Reactor pressure lowers to 845 psig.
- D. Reactor water level lowers to 10 inches.

Explanation:

Tech Spec LCO 3.4.12 states "The reactor steam dome pressure shall be  $\leq$  1045 psig. In modes 1 and 2.

Answer

A

Objective:

LP87625 .1.6.12

Reference:

Tech Spec 3.4.12

Cognitive Level:

2

Question Pedigree:

New

Difficulty:

3.5

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 106     | <b>BOTH</b> | 295025 | <b>EK2.08</b> |

The plant is operating at 30% power with the Pressure Regulator operating on Channel A.

A failure in the logic circuitry causes Channel A to fail downscale (zero psi pressure error signal), and also prevents the fault detection logic from placing Channel B in control.

Which one of the following actions is likely to occur?

- A. The RGLTR ERROR light will illuminate and the TCVs will fail As Is. Reactor pressure remains constant.
- B. The TCV's and Bypass Valves will fully open. Reactor pressure goes down.
- C. The TCVs will close and the Bypass Valves remain closed. Reactor pressure goes up.
- D. The TCVs will close and the Bypass Valves will open. Reactor pressure remains constant.

Explanation:

A – would be true for failure of channel B

B – would be true for the signal failing to maximum.

D – would be true for a load limit signal failure.

Answer

**C**

Reference:

LP87241-01

Question Pedigree:

**CPS Exam Bank Question #6599**

**Modified**

Difficulty:

**3.3**

Objective:

LP87241 .1.5.2

Cognitive Level:

**2**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 107     | SRO  | 295026 | 2.1.14 |

The plant is operating at 100% power in the middle of summer.

- Several SRVs are leaking. Provide Tech Spec 3.6.2.1
- Yesterday at 1500 Suppression Pool temperature was 97°F
- Today at 1500 Suppression Pool temperature is 98°F

Which of the following describes the required actions and personnel that must be notified?

- A. CPS 4100.01, Reactor Scram; Plant Management only.
- B. CPS 3006.01, Unit Shutdown; Plant Management only.
- C. CPS 4100.01, Reactor Scram; All onsite personnel via a plant announcement.
- D. CPS 3006.01, Unit Shutdown; All onsite personnel via a plant announcement.

### Explanation:

The LCO completion time for high suppression pool temperature has been exceeded causing entry into CPS 3006.01. Entry into CPS 3006.01 is considered a significant plant evolution which should be announced over the Gaitronics per CPS 1401.07.

|                |                   |                    |
|----------------|-------------------|--------------------|
| Answer         | Reference:        | Question Pedigree: |
| <b>D</b>       | Tech Spec 3.6.2.1 | <b>New</b>         |
| Objective:     | Cognitive Level:  | Difficulty:        |
| LP87627 .1.2.9 | <b>2</b>          | <b>3.0</b>         |

# Clinton Power Station

## 2001 ILT Exam

Question:  
# 108

Exam  
**RO**

System  
**295026**

KA  
**2.4.11**

Main Control Room has been evacuated.

RCIC is running for RPV level and pressure control.

Suppression Pool Temperature is 107°F and rising at 6°F/hr

Which of the following RHR pumps is available for suppression pool cooling per CPS 4003.01, Remote Shutdown.

A. 'A' RHR Pump without automatic minimum flow capability.

B. 'A' RHR Pump with automatic minimum flow capability

C. 'B' RHR Pump without automatic minimum flow capability.

D. 'B' RHR Pump with automatic minimum flow capability.

Explanation:

CPS 4003.01C007, RSP – DIV 1 SUPPRESSION POOL COOLING OPERATION describes manually closing 1E12-F064A, RHR Pump A Min Flow Recirc Valve when flow is > 1100 gpm and opening it when flow is < 1100 gpm.

CPS 4003.01C012, RSP – DIV 2 SUPPRESSION POOL COOLING OPERATION does not have the operator use the Min Flow Recirc Valve at all.

Answer

**A**

Reference:

4003.01C007 Rev. 0a

4003.01C012 Rev. 0

Question Pedigree:

**New**

Objective:

Cognitive Level:

**2**

Difficulty:

**3.0**

# Clinton Power Station 2001 ILT Exam

Question:

Exam

System

KA

# 109

**SRO**

**295026**

**EA2.03**

|  |                                 |                           | Provide copy Figure P |
|--|---------------------------------|---------------------------|-----------------------|
| Which of the following conditions allow exceeding 100 °F/hr cooldown rate? |                                 |                           |                       |
|  | Suppression Pool<br>Temperature | Suppression Pool<br>Level | Reactor<br>Pressure   |
| A.   | 140°F                           | 18 ft                     | 1000 psig             |
| B.   | 150°F                           | 19 ft                     | 700 psig              |
| C.   | 150°F                           | 16 ft                     | 600 psig              |
| D.   | 160°F                           | 19 ft                     | 400 psig              |

Explanation:

- A. 140°F and 1000 psig places the plant below the 17 ft line. (18 ft would use 17 ft line)
- B. 150°F and 700 psig places the plant below the 18 ft 11 in line. (19 ft would use 18 ft 11 in line)
- D. 160°F and 400 psig places the plant below the 18 ft 11 in line. (19 ft would use 18 ft 11 in line)

Answer

Reference:

Question Pedigree:

**C**

CPS 4402.01 Rev. 25 (EOP-6)

**New**

Objective:

Cognitive Level:

Difficulty:

**2**

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 110     | <b>BOTH</b> | 295027 | <b>EA2.04</b> |

A rupture in which of the following components would be indicated by high temperature and radiation levels in containment?

- A. RCIC Rupture Disc
- B. RT Heat Exchanger Relief
- C. Inboard MSIV, 1B21-F022B
- D. CCW Return Line CNMT Inboard Valve, 1CC053

Explanation:

- A. RCIC Rupture Disc is not in Containment
- C. Inboard MSIV, 1B21-F022B is in the Drywell
- D. CCW Return Line CNMT Inboard Valve 1CC053 is a low energy system that would not give an indication of high temperature.

Answer

**B**

Objective:

Reference:

LP85204-07 & LP86204-05

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**2.5**



# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 111

**BOTH**

295027

**EK1.02**

The following conditions are observed following a Loss of Coolant Accident:

- Reactor Pressure 50 psig.
- Drywell Temperature 225°F
- Containment Temperature 135°F

Level instruments indicate as follows:

- Narrow Range Level 2 inches
- Shutdown Range Level 22 inches
- Wide Range Level -35 inches
- Fuel Zone Level -142 inches

Which of the following would be the preferred level instrument to monitor?

A. Narrow Range Level

B. Shutdown Range Level

C. Wide Range Level

D. Fuel Zone Level

Explanation:

A & B In accordance with EOP-1 Figure A these instruments are below their usable level for the conditions.

D. Fuel Zone should not be used as long as Wide Range Level is available, and it is.

Answer

**C**

Objective:

LP85423 .1.8.7

Reference:

CPS 4401.01 Rev. 25 (EOP-1)

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 112     | SRO  | 295030 | EA2.02 |

Suppression Pool Level is 11 inches below normal pool level.

Under this condition, where can Suppression Pool Temperature be read accurately?

A. SPDS or P678

B. P678 or P601

C. SPDS Only

D. P678 Only

Explanation:

EOP-6 states that if Suppression Pool Level drops below 18 ft. 6 in. read pool temperature on P678 or SPDS. Normal pool level is 18 ft. 11 in. to 19 ft. 5 in.

Justification for SRO Only: Condition is only addressed by an EOP subsequent step.

Answer

**A**

Objective:

LP87558 .1.4

Reference:

CPS 4402.01 Rev. 25 (EOP-6)

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**2.5**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 113     | <b>BOTH</b> | 295030 | <b>EK2.03</b> |

- The plant was operating at 50% power when a LOCA occurred.
- LPCS is injecting to the reactor.
- Suppression pool level is lowering.

Which of the following is the highest suppression pool level that damage to the LPCS pump would be expected to occur?

- A. 8 feet
- B. 10 feet
- C. 12 feet
- D. 14 feet

Explanation:

In accordance with Detail Z the Minimum Suppression Pool Level for LPCS Pump is 11 ft., therefore:

A & B are below the Minimum level with B being the highest.

C & D are above the minimum level and would not cause damage.

Answer

**B**

Objective:

Reference:

CPS 4402.01 Rev. 25 (EOP-6)

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**2.5**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |        |
|-----------|-------------|--------|--------|
| Question: | Exam        | System | KA     |
| # 114     | <b>BOTH</b> | 295031 | 2.4.11 |

The plant was operating at 100% reactor power when a Feedwater transient occurred.

Upon stabilization of the plant the following conditions exist:

- Reactor Power 63%
- Reactor Water Level 18 inches narrow range
- Reactor Recirc pumps in slow speed

The operator notices the following annunciators have been received:

5002-2Q, RX WTR LEVEL HI-LO

5004-1B, DIV 1 OR 4 RX VESSEL LO LVL TRIP

5004-1B, DIV 2 OR 3 RX VESSEL LO LVL TRIP

Based on the information above, which of the following would be the next action to take?

- |  |
|--|
| A. Lower the Master Level Control Tape Set to 18 inches, and Reset the "Setpoint Setdown" Logic. |
| B. Immediately enter EOP-1A, ATWS RPV CONTROL  |
| C. Place the Mode Switch in SHUTDOWN   |
| D. Trip both Reactor Recirc pumps.   |

Explanation:

The annunciators indicate that a valid Scram signal (Level 3) occurred and the reactor did not automatically scram, so a manual scram should be inserted by placing the mode switch in shutdown.

Answer

**C**

Reference:

CPS 4100.01 Rev. 17

Question Pedigree:

**CPS Exam Bank Question #0045**

**Modified**

Objective:

Cognitive Level:

**1**

Difficulty:

**2.5**

# Clinton Power Station

## 2001 ILT Exam

|           |             |               |               |
|-----------|-------------|---------------|---------------|
| Question: | Exam        | System        | KA            |
| # 115     | <b>BOTH</b> | <b>295032</b> | <b>EK2.04</b> |

- The reactor is operating at 78% reactor power in a normal plant configuration.
- The Main Steam Line Tunnel temperature alarm has initiated and now reads 176 degrees F.

Which of the following systems would immediately isolate in response to this high temperature?

A. Main Steam, RCIC

B. Main Steam, RWCU

C. RCIC, Feedwater

D. RWCU, Feedwater

Explanation:

A. The RCIC isolation has a 28 minute time delay.

C. & D. Feedwater does not isolate on this signal.

Answer

**B**

Objective:

Reference:

Tech. Spec. table 3.3.2-2

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #3746**

Difficulty:

**2.8**

# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 116

SRO

295033

EA2.03

The plant is operating at 100% with the following:

- RP reports that a routine survey has found a 15 mr/hr field in the aux. Bldg. East access aisle el 737'.
- Fuel Building exhaust radiation is reading 5 mr/hr and trending upward.
- RWCU pump room A area temperature alarms and is reading 105°F.

What actions should be taken?

- A. Enter EOP-8 Secondary Containment Control and isolate RWCU.
- B. Enter EOP-8, Secondary Containment Control and start SGTS.
- C. Enter EOP-3, Emergency RPV Depressurization (Blowdown) and evacuate the Containment.
- D. Enter EOP-1, RPV Level Control and turn the Mode Switch to Shutdown.

Explanation:

- B. Fuel Bldg exh rads are not high enough (10 mr/hr) to isolate Fuel Bldg Ventilation and start SGTS.
- C. Need 2 Max Safe Levels to enter EOP-3, currently do not have any.
- D. Need 1 Max Safe Level to enter EOP-1, currently do not have any.

Answer

**A**

Objective:

Reference:

CPS 4406.01 Rev. 25 (EOP-8)

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.5**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 117     | <b>BOTH</b> | 295034 | <b>EK1.02</b> |

Fuel Building exhaust radiation level is currently 6 mr/hr.

What would be the operational implications if the radiation levels were to double?

- A. Primary Containment integrity would be lost.
- B. Secondary Containment integrity would be lost.
- C. Equipment area temperatures would approach design limits.
- D. Ground level radiation release would approach release limits.

**Explanation:**

Fuel Bldg Ventilation trips on a high rad condition of 10 mr/hr. SGTS starts to maintain Secondary Containment Integrity but does not provide the same capacity as the Fuel Bldg Ventilation, so area temperatures could rise.

Answer

**C**

Objective:

LP85449 .1.6.3

Reference:

LP85449-01

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.8**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 118     | SRO  | 295036 | 2.4.10 |

Which of the following "HIGH-HIGH FLR/EQUIP DRAIN SUMP" alarms would indicate primary system leakage from the RCIC Turbine AND which procedure would require entry?

- A. Auxiliary Building; EOP-8, Secondary Containment Control
- B. Fuel Building; EOP-8, Secondary Containment Control
- C. Auxiliary Building; EOP-6, Primary Containment Control
- D. Fuel Building; EOP-6, Primary Containment Control

**Explanation:**

RCIC high sump alarm inputs to HIGH-HIGH FLR/EQUIP DRAIN SUMP AUX BLDG (5013-5D). EOP-8 entry is required if RCIC pump room sump is alarming.

The entire Fuel Bldg is located within the secondary containment. The RCIC suction and test return piping are routed through the Fuel Bldg to the RCIC storage tank.

|            |                     |                    |
|------------|---------------------|--------------------|
| Answer     | Reference:          | Question Pedigree: |
| A          | CPS 5013.05 Rev. 27 | New                |
| Objective: | Cognitive Level:    | Difficulty:        |
|            | 2                   | 3.0                |



# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 119

SRO

295036

EA2.02

The plant is operating at 100 % power.

Prerequisites for RHR "A" Pump Operability have been completed.

When the RHR 'A' Pump is started the 'C' Area operator reports that a water hammer has occurred and there is water spraying from the RHR Pump Discharge Check Valve.

The 'A' Reactor Operator reports that suppression pool level is 18.8 ft and lowering at 0.1 ft/min.

Of the following, what are the appropriate actions?

A. Immediately scram the reactor and BLOWDOWN.

B. Immediately scram the reactor and dump the upper pools.

C. Stop the RHR 'A' Pump, isolate RHR 'A' system from the suppression pool and dump the upper pools.

D. Stop the RHR 'A' Pump, isolate RHR 'A' system from the suppression pool and restore suppression pool level.

Explanation:

In this situation the RHR "A" system can be isolated from the suppression pool and the suppression pool level restored. Therefore the following are incorrect because:

- A. Would only be necessary if pool level could not be held above 15 ft. 1 in.
- B. Would only be necessary if pool level was approaching 15 ft. 1 in.
- C. Do not need to dump the upper pools at this time.

Answer

**D**

Objective:

Reference:

CPS 4402.01 Rev. 25 (EOP-6)

Cognitive Level:

**2**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 120

**BOTH**

**295037**

**EA1.04**

You have been directed to initiate Standby Liquid Control. You turn the keylock switch for the SLC pump 'A' to on. You note that the explosive valve fires, but SLC Pump 'A' did not start.

Why hasn't SLC Pump 'A' started?

- A. RWCU Outboard Isolation Valve has not yet closed.
- B. RWCU Inboard Isolation Valve has not yet closed.
- C. SLC Storage Tank Outlet Valve has not yet fully opened.
- D. The SLC Pump discharge valve is closed.

Explanation:

Incorrect

A, B, D None of these provides input to the SLC Pump start circuitry.

Correct

- C The pump will not start until it has a suction path available, so the Storage Tank Outlet Valve must be fully open before the pump will start.

Answer

**C**

Objective:

LP85211 .1.4.3

Reference:

LP85211-03

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #3132**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 121     | RO   | 295037 | EA1.05 |

Which Alternate Control Rod Insertion method can NOT be performed when the Containment is inaccessible?

- A. Manual Control Rod Insertion
- B. De-energizing RPS Scram Solenoids
- C. Individual Rod Scram
- D. Manual ARI Initiation

Explanation:

Individual Rod Scram requires entry into the containment to operate the A & B HCU Scram Test Switches.

Answer

**C**

Objective:

LP87512 .1.8

Reference:

4411.08 Rev. 5

Cognitive Level:

**1**

Question Pedigree:

**CPS Exam Bank Question #3762**

Difficulty:

**2.8**

# Clinton Power Station 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 122     | SRO  | 295038 | 2.4.10 |

The following high alarm is received on the AR/PR panel

IRIX-PR004, FC HX 1A CLG WTR EFFLUENT 712 FB AL-106

The monitor is reading 2.3 E-3 uCi/cc

Provide copy of EC-02 Section 3.1

No other High Alarms are in.

From this information what would be the correct response?

- |   |
|---|
| A. Enter EOP-9, Radioactive Release Control, and isolate all primary systems discharging outside primary and secondary containment. |
| B. Enter EOP-8, Secondary Containment Control, and verify Fuel Building Exhaust Rad < 10mR/hr.                                      |
| C. Enter EC-02, Emergency Classifications, and declare an 'Unusual Event' due to symptom 3.1 'Radiological Releases-Liquid'.        |
| D. Enter EC-02, Emergency Classifications, and declare an 'Alert' due to symptom 3.1 'Radiological Releases-Liquid'.                |

Explanation:

In accordance with EC-02 an Unusual Event would be declared if IRIX-PR004 were reading greater than or equal to 1.0 E-3  $\mu$ Ci/cc. The current reading is not yet at the "Alert" level.

The alarm IRIX-PR004, FC HX 1A CLG WTR EFFLUENT 712 FB AL-106 would be considered an annunciator response type alarm even though it is occurring on a computer monitor screen.

|            |                                 |                    |
|------------|---------------------------------|--------------------|
| Answer     | Reference:                      | Question Pedigree: |
| C          | EC-02 Rev. 6                    | New                |
|            | CPS 4406.01 Rev. 25 (EOP-8 & 9) |                    |
| Objective: | Cognitive Level:                | Difficulty:        |
|            | 2                               | 3.0                |

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 123     | <b>BOTH</b> | 295014 | <b>AA2.01</b> |

|  |
|--|
| Which of the following would cause reactor power to go up? |
| A. RR Flow Control Valve closing.                          |
| B. Rod Scram Outlet Valve opening.                         |
| C. 6B Extraction Steam Shutoff Valve closing.              |
| D. CD Pump Minimum Flow Valve opening                      |

**Explanation:**

The 6B Extraction Steam Shutoff Valve closing will prevent the heating of the feedwater in the 6B heater, thereby, causing colder feedwater to enter the vessel and drive reactor power up.

|                 |                  |                    |
|-----------------|------------------|--------------------|
| Answer          | Reference:       | Question Pedigree: |
| <b>C</b>        | LP87300-01       | <b>New</b>         |
| Objective:      | Cognitive Level: | Difficulty:        |
| LP87300 .1.7.10 | <b>2</b>         | <b>2.8</b>         |

# Clinton Power Station

## 2001 ILT Exam

Question:

Exam

System

KA

# 124

**BOTH**

295016

AA2.01

The plant was operating at 100% power.

The Main Control Room is being evacuated due to a fire in 1H13-P680. No actions can be performed on P680 due to the fire.

Which of the following could you check to determine that the reactor is shutdown?

A. Scram Solenoid Lights are deenergized.

B. SRVs are not cycling automatically.

C. 'All Rods Full In' LED at either RACS panel.

D. Main Generator MWe indicates zero.

Explanation:

A. & D. Located on P-680

B. Not a true indicator that the reactor is shutdown.

Answer

Reference:

Question Pedigree:

**C**

CPS 4100.01 Rev. 17

**New**

Objective:

Cognitive Level:

Difficulty:

**1**

**3.3**

# Clinton Power Station

## 2001 ILT Exam

|           |             |        |               |
|-----------|-------------|--------|---------------|
| Question: | Exam        | System | KA            |
| # 125     | <b>BOTH</b> | 600000 | <b>AK3.04</b> |

CPS 1893.04 FIRE FIGHTING contains the following:

**IF** a fire alarm occurs in MCR panel H13-P661, or associated subfloor area  
**AND** it cannot be immediately confirmed that a fire does NOT exist,  
**THEN** place the Division 1 SRV handswitches in the Off position.

The reason for this step is to:

- A. Deenergize the wiring to remove the source of the fire.
- B. Prevent energizing the Div 1 SRV Solenoids.
- C. Prevent energizing the Div 1 SRV Solenoids from Div II power.
- D. Maintain operability of the SRVs.

Explanation:

The fire could cause a "Hot Short" and energize the Div. 1 SRV solenoids from Div. 1 power.

Answer

**B**

Objective:

Reference:

CPS 4003.01 Rev 13

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.0**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 126     | SRO  | 294001 | 2.1.11 |

Given the following conditions:

- The plant is in Mode 5 with fuel being moved from the RPV to the spent fuel pool using the Inclined Fuel Transfer System.
- The Division 1 Main Control Room HVAC subsystem is out of service for maintenance.
- The Division 2 Main Control Room HVAC subsystem is in service.

If a malfunction occurred and the Division 2 Main Control Room HVAC subsystem tripped, the TS required IMMEDIATE action is to...

- |  |
|--|
| A. Start at least one train of Standby Gas.                          |
| B. Stop irradiated fuel movement in the Spent Fuel Pool.             |
| C. Verify primary and secondary containment are established.         |
| D. Verify Control Bldg pressure is negative compared to the outside. |

Explanation:

In accordance with T.S. 3.7.4: If two control room AC subsystems are inoperable, then suspend movement of irradiated fuel assemblies in the primary and secondary containment.

|            |                  |                          |
|------------|------------------|--------------------------|
| Answer     | Reference:       | Question Pedigree:       |
| <b>B</b>   | T. S. 3.7.4      | <b>CPS NRC Exam 2000</b> |
| Objective: | Cognitive Level: | Difficulty:              |
|            | <b>2</b>         | <b>3.5</b>               |



# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 127     | SRO  | 294001 | 2.2.11 |

|   |
|---|
| Which of the following Temporary Modifications can be authorized prior to the completion of the associated documentation? |
| A. Installation of jumpers to allow Rod Exercising.   |
| B. Installation of a patch on a WS pipe that has wall thinning.   |
| C. Installation of a Blocking Device to maintain Div I Diesel Generator Ventilation Exhaust Damper open.                  |
| D. Installation of a jumper on a faulty ground overcurrent relay on a RHR pump needed for core cooling.                   |

Explanation:

An Emergency Temporary Modification may be authorized prior to completion of the documentation.

The definition of an Emergency Temporary Modification is:

A modification required to be implemented to correct one of the following conditions:

- Potential damage to important SSCs that support the safe shutdown of the plant.

Answer

**D**

Objective:

Reference:

CPS 1014.03 Rev. 20

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.5**

# Clinton Power Station

## 2001 ILT Exam

|           |      |        |        |
|-----------|------|--------|--------|
| Question: | Exam | System | KA     |
| # 128     | SRO  | 294001 | 2.4.22 |

Within the power leg of EOP-1 there is a shifting of priorities concerning starting Standby Liquid Control (SLC) depending on whether reactor power is greater than 5%.

What is the basis for needing to start SLC immediately if power is >5%?

- A. Preclude power oscillations and ensure the plant remains in a controlled state.
- B. Minimize Suppression Pool Temperature rise.
- C. Complete SLC injection before RWCU is needed for pressure control.
- D. Enables Main Turbine to be tripped earlier.

Explanation:

EOP Technical Bases states: "If reactor power remains above the APRM downscale setpoint following multiple attempts to scram the reactor, Clinton operating practices call for immediate injection of boron to preclude power oscillations and ensure that the plant remains in a controlled state."

Answer

**A**

Objective:

Reference:

EOP Technical Bases Pg 5-45

Cognitive Level:

**1**

Question Pedigree:

**New**

Difficulty:

**3.5**