

Facility: <u>Wolf Creek</u>		Date of Examination: <u>January 2012</u>
Examination Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>		Operating Test Number: _____
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
A1 Conduct of Operations	D, R	Review completed boration requirement calculation for a downpower evolution. 2.1.37 Knowledge of procedures, guidelines, or limitations associated with reactivity management (CFR 41.1 / 43.6 / 45.6) (SRO: 4.6)
A2 Conduct of Operations	D, R	Using a supplied data (STS SF-002, Core Axial Flux Difference), complete and evaluate the acceptance criteria. 2.1.20 Ability to interpret and execute procedure step. (CFR 41.10 / 43.5 / 45.12) (SRO: 4.6) 2.1.43 Ability to use procedures to determine the effects on reactivity of plant changes, such as reactor coolant system temperature, secondary plant, fuel depletion, etc. (CFR 41.10 / 43.6 / 45.6) (SRO: 4.3)
A3 Equipment Control	N, R	Evaluate plant conditions and determine if a mode change can occur. 2.2.35 Ability to determine Technical Specification Mode of Operation (CFR: 41.7 / 41.10 / 43.2 / 45.13) (SRO: 4.5) 2.2.40 Ability to apply Technical Specifications for a system. (CFR: 41.10 / 43.2 / 43.5 / 45.3) (SRO: 4.7)
A4 Radiation Control	N, R	Evaluate an Emergency Exposure Authorization. 2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions. (CFR 41.12 / 43.4 / 45.10) (SRO: 3.7)
A5 Emergency Procedures/Plan	N, S	Complete an Emergency Notification. 2.4.41 Knowledge of the emergency action level thresholds and classification. (CFR 41.10 / 43.5 / 45.11) (SRO: 4.6)
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected)		

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Control Room Systems [@] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
Alternate Success Path JPM's are Bolded.		
System / JPM Title	Type Code*	Safety Function
S1 Perform a manual makeup to the Volume Control Tank (VCT). 004 CVCS A4 Ability to manually operate and/or monitor in the Control Room: (CFR 41.7 / 45.5 to 45.8) A4.12 Boration/Dilution batch control (SRO: 3.3) A4.13 VCT level control and pressure control (SRO: 2.9) A4.15 Boron concentration (SRO: 3.7)	D, S	2
S2 Depressurize the RCS during Natural Circulation conditions. 010 Pressurizer Pressure Control System (PZR PCS) A1 Ability to predict and /or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PZR PCS controls including: (CFR 41.5 / 45.5) A1.07 RCS pressure (SRO: 3.7) A4 Ability to manually operate and / or monitor in the Control Room: (CFR 41.7 / 45.5 to 45.8) A4.01 PZR spray valve (SRO: 3.5) PSA – Top Risk Significant System by PSA (BB – Reactor Coolant System)	N, S, L	3
S3 Transfer steam load from Turbine to the Steam Dumps. 041 Steam Dump System and Turbine Bypass Control (SDS) A3 Ability to monitor automatic operation of the SDS, including: (CFR 41.7 / 45.5): A3.02 RCS pressure, RCS temperature, and reactor power (SRO: 3.4) A3.03 Steam flow (SRO: 2.8) A4 Ability to manually operate and/ or monitor in the Control Room: (CFR 41.7 / 45.5 to 45.8) A4.08 Steam dump valves (SRO: 3.1)	N, S	4S

<p>S4 Respond to high RCP seal flow.</p> <p>003 Reactor Coolant Pumps (RCP)</p> <p>A2 Ability to (a) predict the impacts of the following malfunctions or operations on the RCPs; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR 41.5 / 43.5 / 45.3 / 45.13)</p> <p>A2.01 Problems with RCP seals, especially rates of seal leak-off (SRO: 3.9)</p> <p>A2.02 Conditions which exist for an abnormal shutdown of an RCP in comparison to a normal shutdown of an RCP (SRO: 3.9)</p> <p>PSA – Top Risk Significant System by PSA (BB – Reactor Coolant System)</p>	<p>N, A, S</p>	<p>4P</p>
<p>S5 Perform EMG E-0, Attachment F Automatic Signal Verification.</p> <p>103 Containment System</p> <p>A2 Ability to (a) predict the impacts of the following malfunctions or operations on the Containment Systems; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR 41.5 / 43.5 / 45.3 / 45.13)</p> <p>A2.03 Phase A and Phase B isolation (SRO: 3.8)</p> <p>PSA – Top Risk Significant System by PSA (SA – Engineered Safeguards Features Actuation System)</p>	<p>M, A, S, L</p>	<p>5</p>
<p>S6 Align Safeguards Bus to Alternate Power Source.</p> <p>062 A.C. Electrical Distribution</p> <p>A2 Ability to (a) predict the impacts of the following malfunctions or operations on the AC distribution system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR 41.5 / 43.5 / 45.3 / 45.13)</p> <p>A2.05 Methods for energizing a dead bus (SRO: 3.3)</p> <p>055 Loss of Offsite and Onsite Power (Station Blackout)</p> <p>EA2 Ability to determine or interpret the following as they apply to a Station Blackout (CFR 43.5 / 45.13)</p> <p>EA2.03 Actions necessary to restore power (SRO: 4.7)</p> <p>PSA – Station Blackout – Core Damage Frequency by Initiating Event & Event tree</p>	<p>M, A, S, L</p>	<p>6</p>

<p>S7 Determine IR Instrumentation Malfunction.</p> <p>015 Nuclear Instrumentation System (NIS)</p> <p>K6. Knowledge of the effect of a loss or malfunction on the following will have on the NIS: (CFR 41.7 / 45.7)</p> <p>K6.02 Discriminator / compensation circuits (SRO: 2.9)</p> <p>A2 Ability to (a) predict the impacts of the following malfunctions or operations on the NIS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR 41.5 / 43.5 / 45.3 / 45.13)</p> <p>A2.02 Faulty or erratic operation of detectors or compensating components (SRO: 3.5)</p> <p>LER 2009-011, Intermediate Range detector NI36 inoperable</p>	<p>N, A, L, S</p>	<p>7</p>
<p>h. NA</p>		
<p>In-Plant Systems[@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)</p>		
<p>P1 Start a Rod Drive Motor Generator Set.</p> <p>001 Control Rod Drive System (CRDM)</p> <p>2.2.1 Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity. (CFR 41.5 / 41.10 / 43.5 / 45.1) (SRO: 4.4)</p> <p>LER 2003-001, Manipulation of component outside of procedural guidance causes reactor trip</p>	<p>D, R</p>	<p>1</p>
<p>P2 Align Auxiliary Feedwater alternate suction from Fire Protection Standpipe.</p> <p>061 Auxiliary Feedwater System (AFW)</p> <p>A2 Ability to (a) predict the impacts of the following malfunctions or operations on the AFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR 41.5 / 43.5 / 45.3 / 45.13)</p> <p>A2.04 Pump failure or improper operation (SRO: 3.8)</p> <p>PSA – Top Risk Significant System by PSA (AL – Auxiliary Feedwater System)</p>	<p>D, L, E</p>	<p>4S</p>

<p>P3 Increasing Spent Fuel Pool level.</p> <p>033 Spent Fuel Pool Cooling System (SFPCS)</p> <p>A2 Ability to (a) predict the impacts of the following malfunctions or operations on the Spent Fuel Pool Cooling System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR 41.5 / 43.5 / 45.3 / 45.13)</p> <p>A2.03 Abnormal spent fuel pool water level or loss of water level (SRO: 3.5)</p>	<p>N, A, R</p>	<p>8</p>
<p>@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p>		
<p>* Type Codes</p>	<p>Criteria for RO / SRO-I / SRO-U</p>	
<p>(A)lternate path (C)ontrol room (D)irect from bank (E)mergency or abnormal in-plant (EN)gineered safety feature (L)ow-Power / Shutdown (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams (R)CA (S)imulator</p>	<p>4-6 / 4-6 / 2-3</p> <p>$\leq 9 / \leq 8 / \leq 4$</p> <p>$\geq 1 / \geq 1 / \geq 1$</p> <p>- / - / ≥ 1 (control room system)</p> <p>$\geq 1 / \geq 1 / \geq 1$</p> <p>$\geq 2 / \geq 2 / \geq 1$</p> <p>$\leq 3 / \leq 3 / \leq 2$ (randomly selected)</p> <p>$\geq 1 / \geq 1 / \geq 1$</p>	