January 2012

N, R

N, R

A5 N. S classification, completing an Emergency Notification form (EPF 06-007-01) within fifteen minutes. Emergency Procedures/Plan Time Critical 2.4.41 Knowledge of the emergency action level thresholds

41.10 / 43.5 / 45.12) (SRO: 4.6)

/ 43.6 / 45.6) (SRO: 4.3)

occur.

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

Evaluate plant conditions and determine if a mode change can

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.

2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions. (CFR 41.12 / 43.4 / 45.10) (SRO: 3.7)

Evaluate an Emergency Authorization Exposure (EPF 06-

In the simulator setting, perform an Emergency Plan

and classification. (CFR 41.10 / 43.5 / 45.11) (SRO: 4.6)

(CFR: 41.10 / 43.2 / 43.5 / 45.3) (SRO: 4.7)

013-02) for correctness and approval.

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.

A3

A4

Equipment Control

Radiation Control

* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (\leq 3 for ROs; \leq 4 for SROs & RO retakes)

(N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected)

Facility: Wolf Creek	Date of Examination:	January 2012	
Examination Level: RO SRO SRO	Operating Test Number:		
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 004 CVCS: Perform manual makeup to the Volume Control T	Tank D, S	2	
A4 Ability to manually operate and/or monitor in the Control Roc 41.7 / 45.5 to 45.8)	om: (CFR		
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)			
S2 010 Pressurizer Pressure Control System (PZR PCS): Depressi RCS to 1920 psig	urize the N, S, L	3	
A1 Ability to predict and /or monitor changes in parameters (to prexceeding design limits) associated with operating the PZR PCS clincluding: (CFR 41.5 / 45.5)			
A1.07 RCS pressure (SRO: 3.7)			
A4 Ability to manually operate and / or monitor in the Control Ro 41.7 / 45.5 to 45.8)	oom: (CFR		
A4.01 PZR spray valve (SRO: 3.5)			
PSA – Top Risk Significant System by PSA (BB – Reactor Coola System)	nt .		
S3 041 Steam Dump System and Turbine Bypass Control (SDS): steam load from Turbine to steam dumps	move N, S	48	
A3 Ability to monitor automatic operation of the SDS, including: 41.7 / 45.5):	(CFR		
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 Ro 41.7 / 45.5 to 45.8)	om: (CFR		
A4.08 Steam dump valves (SRO: 3.1)			

S4 003 Reactor Coolant Pumps (RCP): RCP seal injection high: seal injection too high when at 100%, must trip reactor (first) and then trip RCP and close valve etc.	N, A, S	4P
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)		
A2.01 Problems with RCP seals, especially rates of seal leak-off (SRO: 3.9)		
A2.02 Conditions which exist for an abnormal shutdown of an RCP in comparison to a normal shutdown of an RCP (SRO: 3.9)		
PSA – Top Risk Significant System by PSA (BB – Reactor Coolant System)		
S5 103 Containment System: Phase A not completed – must "make it so"	M , A , S , L	5
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)		
A2.03 Phase A and Phase B isolation (SRO: 3.8)		
PSA – Top Risk Significant System by PSA (SA – Engineered Safeguards Features Actuation System)		
S6 062 A.C. Electrical Distribution: align alternate power to bus	M, A, S, L	6
A2 Ability to (a) predict the impacts of the following malfunctions or perations on the AC distribution system; and (b) based on those redictions, use procedures to correct, control, or mitigate the onsequences of those malfunctions or operations: (CFR 41.5 / 43.5 / 5.3 / 45.13)		
A2.05 Methods for energizing a dead bus (SRO: 3.3)		
055 Loss of Offsite and Onsite Power (Station Blackout)		
EA2 Ability to determine or interpret the following as they apply to a Station Blackout (CFR 43.5 / 45.13)		
EA2.03 Actions necessary to restore power (SRO: 4.7)		
PSA – Station Blackout – Core Damage Frequency by Initiating Event & Event tree		

S7 015 Nuclear Instrumentation System (NIS): IR under compensation, correct energize SR NI's	N, A, L, S	7
K6. Knowledge of the effect of a loss or malfunction on the following will have on the NIS: (CFR 41.7 / 45.7)		
K6.02 Discriminator / compensation circuits (SRO: 2.9)		
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 / 45.13)		
A2.02 Faulty or erratic operation of detectors or compensating components (SRO: 3.5)		
LER 2009-011, Intermediate Range detector NI36 inoperable		
h. NA		
In-Plant Systems [@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
P1 001 Control Rod Drive System (CRDM): Start a rod drive motor generator set	D, R	1
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)		
LER 2003-001, Manipulation of component outside of procedural guidance causes reactor trip		
P2 061 Auxiliary Feedwater System (AFW): align AFW alternate suction from fire protection standpipe	D, L, E	4S
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)		
A2.04 Pump failure or improper operation (SRO: 3.8)		
PSA – Top Risk Significant System by PSA (AL – Auxiliary Feedwater System)		

P3 033 Spent Fuel Pool Cooling System (SFPCS)	N, A, R	8
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)		
A2.03 Abnormal spent fuel pool water level or loss of water level (SRO: 3.5		

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

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