

Facility: <u>Quad Cities</u>		Date of Examination: <u>4/18/16</u>
Examination Level: RO <input checked="" type="checkbox"/> SRO <input type="checkbox"/>		Operating Test Number: <u>ILT 14-1</u>
Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	S, N	Enter Substitute Value for RWCU Pump Flow K/A: 2.1.19 Rating: 3.9 Ability to use plant computers to evaluate system or component status.
Conduct of Operations	S, D	Verification of SBGTS Lineup K/A: 2.1.31 Rating: 4.6 Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.
Equipment Control	S, D, P	Print Reading Exercise K/A: 2.2.41 Rating: 3.5 Ability to obtain and interpret station electrical and mechanical drawings.
Radiation Control	S, N	ARM Trip Unit Set Point Check K/A: 2.3.5 Rating: 2.9 Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable instruments, personnel monitoring equipment, etc.
Emergency Procedures/Plan	N/A	N/A
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 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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Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	S, D	Shift Staffing (SRO 26-I) K/A: 2.1.5 Rating: 3.9 Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.
Conduct of Operations	S, D	Pre Refueling Activities K/A: 2.1.36 Rating: 4.1 Knowledge of procedures and limitations involved in core alterations.
Equipment Control	S, M	Fire Impairment K/A: 2.2.14 Rating: 4.3 Knowledge of the process for controlling equipment configuration or status.
Radiation Control	S, P	Compensatory Measures for Inoperable Service Water Rad Monitor K/A: 2.3.15 Rating: 3.1 Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.
Emergency Procedures/Plan	S, N	Determine Protective Action Recommendations (PARS) K/A: 2.4.44 Rating: 4.4 Knowledge of emergency plan protective action recommendations.

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Control Room Systems: * 8 for RO; 7 for SRO-I; 2 or 3 for SRO-U		
System / JPM Title	Type Code*	Safety Function
a. RMCS, SG 2.1.44 3.9/3.8 Perform One-Rod-Out Interlock Surveillance	S, D, L, P	1
b. Reactor Condensate System, 256000 A2.06 3.2/3.2 Injecting Standby Coolant	S, EN, N, A	2
c. Main and Reheat Steam System, 239001 A4.02 3.2/3.2 Control Reactor Pressure using the Main Steam Line Drains	S, N	3
d. Reactor Core Isolation Cooling System, 217000 A4.03 3.4/3.3 RCIC Manual Initiation (Hard Card) with an Inadvertent Isolation	S, D, A	4
e. High Drywell Pressure, 295024 EA1.14 3.4/3.5 Vent Containment Irrespective of Release Rates with APCV (Failure of Torus Valve to Open, Requiring Venting Through the Drywell)	S, D, EN, P, A	5
f. Instrumentation, 216000 K1.01 3.9/4.1 Install OPRM Jumpers on RPS B	S, N	7
g. Component Cooling Water System, 400000 A4.01 3.1/3.0 Reverse RHRSW Heat Exchanger Flow	S, N	8
h. A.C. Electrical Distribution, 262001 A4.01 3.4/3.7 Energize 480 VAC Bus 15 with a Failure of the Normal Feed	S, D, A	6

In-Plant Systems* (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Partial or Complete Loss of D.C. Power, 295004 AA1.01 3.3/3.4 Flex 125/250 VDC Operation	N, E, R	6
j. Control Room HVAC, 290003 SG 2.1.20 4.6/4.6 Start the Control Room B Train HVAC with a Failure of the FCV	N, A, R	9
k. Fire Protection System, 286000 SG 2.1.30 4.4/4.0 Locally Start Up the ½ A Fire Diesel	D	8

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

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

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b. Reactor Condensate System, 256000 A2.06 3.2/3.2 Injecting Standby Coolant	S, EN, N, A	2
c. Main and Reheat Steam System, 239001 A4.02 3.2/3.2 Control Reactor Pressure using the Main Steam Line Drains	S, N	3
d. Reactor Core Isolation Cooling System, 217000 A4.03 3.4/3.3 RCIC Manual Initiation (Hard Card) with an Inadvertent Isolation	S, D, A	4
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(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	