Draft

Facility: Sequoyah Nuclear Station 1 & 2 Date of Examination: 4/12/2011

Exam Level: RO ☐ SRO-I ☒ SRO-U ☐ Operating Test No: 2011-301

Control Room Systems (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
a. Rod Control Urgent Failure During Reactor Startup K/A 001 A1.06 (4.1/4.4)	D, A, S, L	1
b. Align ECCS Pumps to the Containment Sump K/A 006 A4.07 (4.4/4.4)	M, S, L	2
c. Isolate the Ruptured Steam Generator (With MSIV Failure to Close) K/A EPE 038 EA1.32 (4.6/4.7)	M, A, S, L	3
d. Start a Reactor Coolant Pump K/A APE 015/017 AA1.03 (3.7/3.8)	D, A, S, L	4P
e. Respond to ERCW Pump Trip K/A 076 A2.01 (3.5/3.7)	M, S	4S
f. Transfer 1A-A 6.9KV SD Bd From Alternate to Normal K/A 064 A4.01 (4.0/4.3)	M, A, S	6
g. Respond to a Failure of Power Range Instrument N-44 K/A 015 A3.02 (3.7/3.9)	D, S	7
In-Plant Systems (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
h. Uncontrolled Boron Dilution Flowpath Isolation K/A 004 A2.25 (3.8/4.3)	D, R, L	2
i. Operate the TD AFW Pump Locally K/A 061 A2.04 (3.4/3.8)	M, A, E, R	4S
j. Respond to Decreasing RCS Pressure and Level From the Aux. Control Room K/A APE 068 AA1.12 (4.4/4.4)	D, E	8

@ 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	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 (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	

a. Rod Control Urgent Failure During Reactor Startup

While withdrawing control rods low in the power range, an urgent failure occurs preventing normal control rod movement. The examinee will stop withdrawing control rods and determine a Reactor Trip is required.

b. Transfer to Cold Leg Recirc

The examinee will isolate the ECCS pump suction from the RWST following a LOCA during the performance of ES-1.3 transfer to RHR Containment Sump.

c. Isolate the Steam Generator Tube Rupture (With MSIV Failure to Close)

The examinee will attempt to isolate a ruptured steam generator using the ruptured steam generator MSIV. The ruptured steam generator MSIV will fail to close so the examinee will close all intact MSIV's and the alternate flowpath isolation valves.

d. Start a Reactor Coolant Pump

The examinee will start a Reactor Coolant Pump (RCP) while in MODE 3. Shortly after starting the pump, a high motor winding condition develops requiring a manual trip of the RCP.

e. Respond to ERCW Pump Trip

While responding to an ERCW pump trip, the examinee will manually start an ERCW pump.

f. Transfer 1A-A 6.9KV SD Bd From Alternate to Normal

While restoring from maintenance, the examinee will attempt to transfer the 6.9 kv Shutdown Board from the alternate to the normal source. While transferring, the normal supply breaker will fail to close de-energizing the 1A-A 6.9 kv bus. The examinee will manually start the 1A-A EDG to supply power to the 1A-A 6.9 kv Shutdown Board.

g. Respond to a Failure of Power range Instrument N-44.

The examinee will respond to a failure of Power Range Monitor, N-44, defeat its control functions, and prepare for its removal from service.

h. Uncontrolled Boron Dilution Flowpath Isolation

In preparation for an outage, the examinee will locally isolate a boron dilution flowpath.

i. Operate the TD AFW Pump Locally

While responding to a Loss of All AC condition, the examinee will reset and locally start and control the Unit 1 Turbine Driven Auxiliary Feed pump

j. Respond to Decreasing RCS Pressure and Level From the Aux. Control Room

While responding to lowering RCS pressure during a Control Room abandonment situation, the examinee will take local control of the Pressurizer PORV's at the Auxiliary Control Panel and shut the PORV's.

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Exam Level: RO ☐ SRO ☒ Operating Test No: 2011-301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, M	Calculate Subcooling Margin K/A 2.1.45 (4.3)
Conduct of Operations	R, N	Evaluate Shift Daily Surveillance Log Mode One K/A 2.1.18 (3.8)
Equipment Control	R, D	Evaluate Arc Flash Clothing Requirements and Tag Verification Requirements during a Clearance Placement. K/A 2.2.13 (3.8)
Radiation Control	R, M	Pre Job Analysis for Emergent Work in the RCA. K/A 2.3.13 (3.8)
Emergency Procedures/Plan	R, M	Evaluate Conditions For Emergency Classification K/A 2.4.41 (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)

A.1.a Calculate Subcooling Margin

During a Control Abandonment situation, the examinee will determine actual subcooling margin based on a given set of parameters and calculate results using Steam Tables. Based on the result of the calculation, the examinee will make the decision that RCP's can be stopped based on adequate subcooling.

A.1.b Evaluate Shift Daily Log During Mode One

The examinee will evaluate the data provided in the daily shift log to determine if the data meets the administrative and tech spec acceptance criteria.

A.2 Evaluate Ace Flash Clothing Requirements and Tag Verification Requirements during a Clearance Placement

The examinee will determine the minimum protective clothing requirements for manipulating electrical breakers during placement of a clearance and the verification requirements for the placing of the clearance tags in preparation for pre-job brief.

A.3 Pre Job Analysis for Emergent Work in the RCA

Acting as the Outage Work Control SRO, the examinee will review an emergent task in the RCA by utilizing survey maps. The examinee will determine the anticipated dose and determine which worker to use based on prior accumulated dose.

A.4 Evaluate change in conditions for Emergency Classification upgrade.

Acting as the Site Emergency Director, and given a set of initial conditions, the examinee will classify and complete a state emergency notification form.