Facility: Palisades Date of Examination: October 2012

Examination Level: RO ☒ SRO ☐ Operating Test Number: 1

Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, N	(2.1.25) Determine Final PCS Boron Concentration from S/G Backflow Dilution
Conduct of Operations	S, D	(2.1.19) Perform a Heat Balance Calculation
Equipment Control	S, P	(2.2.12) Perform TSST SHO-1
Radiation Control	---	---
Emergency Procedures/ Plan	S, D	(2.4.43) Activate ERDS

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)

Facility: Palisades Date of Examination: October 2012

Examination Level: RO ☐ SRO ☒ Operating Test Number: 1

Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, D, P	(2.1.37) Determine Compensation for a Withdrawn Inoperable Control Rod
Conduct of Operations	R, D	(2.1.25) Review and Approve a PCS Leak Rate
Equipment Control	R, D	(2.2.12) Review and Approve Completed TSST MO-29
Radiation Control	R, N	(2.3.4) Calculate Maximum Permissible Stay Time
Emergency Procedures/Plan	R, N	(2.4.41)(2.4.44) Classify Event and Determine PAR

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)

Facility: Palisades Date of Examination: October 2012

Exam Level: RO ☒ SRO-I ☐ SRO-U ☐ Operating Test Number: 1

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. CVCS / Terminate Emergency Boration	D	1
b. ESFAS / Perform Post RAS Actions	D, EN	2
c. PZR PCS / Open PORV Block Valves	A, D, L	3
d. RCPS / Start a Primary Coolant Pump	A, D, L	4p
e. MRSS / Bypass MSIV Closure	N, A, L	4s
f. CCS / Align Containment Air Coolers	A, D	5
g. PRM / Adjust Liquid Radwaste Discharge Monitor, RIA-1049 Setpoint	D	7
h. CPS / Initiate a Containment Purge While in MODE 5	A, D, L, P	8

In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. SDS / Test an Atmospheric Steam Dump Valve	N, S, L	4s
j. EDG / Isolate and Locally Start Diesel Generator 1-1	D, E	6
k. WGDS / Secure from Waste Gas release	D, R, P	9

@ 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	

Facility: Palisades Date of Examination: October 2012

Exam Level: RO ☐ SRO-I ☒ SRO-U ☐ Operating Test Number: 1

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.		
b. ESFAS / Perform Post RAS Actions	D, EN	2
c. PZR PCS / Open PORV Block Valves	A, D, L	3
d. RCPS / Start a Primary Coolant Pump	A, D, L	4p
e. MRSS / Bypass MSIV Closure	N, A, L	4s
f. CCS / Align Containment Air Coolers	A, D	5
g. PRM / Adjust Liquid Radwaste Discharge Monitor, RIA-1049 Setpoint	D	7
h. CPS / Initiate a Containment Purge While in MODE 5	A, D, L, P	8
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. SDS / Test an Atmospheric Steam Dump Valve	N, S, L	4s
j. EDG / Isolate and Locally Start Diesel Generator 1-1	D, E	6
k. WGDS / Secure from Waste Gas release	D, R, P	9

@ 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	

Facility: Palisades Date of Examination: October 2012

Exam Level: RO ☐ SRO-I ☐ SRO-U ☒ Operating Test Number: 1

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.		
b. ESFAS / Perform Post RAS Actions	D, EN	2
c. PZR PCS / Open PORV Block Valves	A, D, L	3
d.		
e. MRSS / Bypass MSIV Closure	N, A, L	4s
f.		
g.		
h.		

In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i.		
j. EDG / Isolate and Locally Start Diesel Generator 1-1	D, E	6
k. WGDS / Secure from Waste Gas release	D, R, P	9

@ 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	

Facility: **Palisades** Date of Exam: **October 2012** Operating Test No.: **1**

APPLICANT	EVENT TYPE	Scenarios												TOTAL	MINIMUM (*)		
		1			2			3			SPARE (#)						
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U
SRO-U	RX	--			--									0			0
	NOR	--			12									2			1
	I/C	2456			45									6			2
	MAJ	7			6									2			1
	TS	34			34									4			2
RO	RX		4				--							1	1		
	NOR		--				12							2	1		
	I/C		568				457							6	4		
	MAJ		7				6							2	2		
	TS		--				--							0	0		
RO	RX			--		2								1	1		
	NOR			1		--								1	1		
	I/C			24		358								5	4		
	MAJ			7		6								2	2		
	TS			--		--								0	0		
	Notes: (1) The above three candidates will form one operating crew (**Crew 1**).																

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.

2. Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.

3. Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility: **Palisades** Date of Exam: **October 2012** Operating Test No.: **1**

APPLICANT	EVENT TYPE	Scenarios												TOTAL	MINIMUM (*)		
		1			2			3			SPARE (#)						
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION						
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		R	I	U
SRO-U	6	--					--							0			0
	NOR	--					12							2			1
	I/C	2456					457							7			2
	MAJ	7					6							2			1
	TS	34					--							2			2
SRO-I	RX		4		--									1		1	
	NOR		--		12									2		1	
	I/C		568		45									5		4	
	MAJ		7		6									2		2	
	TS		--		34									2		2	
RO	RX			--		2								1	1		
	NOR			1		--								1	1		
	I/C			24		358								5	4		
	MAJ			7		6								2	2		
	TS			--		--								0	0		
	Notes: (1) The above three candidates will form one operating crew (**Crews 2, 3, & 4**).																

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.

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3. Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.