

Facility: <u>Farley</u>		Date of Examination: <u>Aug 2020</u>
Examination Level: RO <input checked="" type="checkbox"/> SRO <input type="checkbox"/>		Operating Test Number: <u>FA2020-301</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
A.1.a Conduct of Operations	N, R	Determine Active License Status. G2.1.5 – 2.9 / 3.9
A.1.b Conduct of Operations	D, R	Calculate Required Turbine Load Reduction. G2.1.20 – 4.6 / 4.6
A.2 Equipment Control	D, S	Perform A Quadrant Power Tilt Ratio Calculation G2.2.12 – 3.7 / 4.1
A.3 Radiation Control	D, R	Calculate the Maximum Permissible Stay Time within Emergency Dose Limits. G2.3.4 – 3.2/3.7
A.4 Emergency Plan		None selected
NOTE: All items (five total) are required for SROs. RO applicants require only four items unless they are retaking only the administrative topics (which would require all five items).		
* Type Codes and Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs and RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 , randomly selected)		

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Examination Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>		Operating Test Number: <u>FA2020-301</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
A.1.a Conduct of Operations	N, R	Determine Shift Manning Technical Specification Requirements. G2.1.5 – 2.9 / 3.9
A.1.b Conduct of Operations	N, R	Determine if outage Defense in Depth Assessment is impacted by evolutions. G2.1.23 – 4.3 / 4.4
A.2 Equipment Control	N, R	Review a completed STP-7.0, Quadrant Power Tilt Ratio Calculation G2.2.12 – 3.7 / 4.1
A.3 Radiation Control	N, R	Determine LHRA Access Controls and Evaluate Administrative Dose Limit Requirements. G2.3.13 – 3.4 / 3.8
A.4 Emergency Plan	N, R	Prepare an initial notification using form NMP-EP-142-F01 Emergency Notification Form (ENF) G.2.4.44 – 2.4 / 4.4
NOTE: All items (five total) are required for SROs. RO applicants require only four items unless they are retaking only the administrative topics (which would require all five items).		
* Type Codes and Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs and RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 , randomly selected)		

Facility: <u>FARLEY</u>	Date of Examination: <u>Aug 2020</u>	
Exam Level: RO <input checked="" type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input checked="" type="checkbox"/>	Operating Test Number: <u>FA2020-301</u>	
Control Room Systems: * 8 for RO, 7 for SRO-I, and 2 or 3 for SRO-U		
System/JPM Title	Type Code*	Safety Function
a. CRO-NEW: Reduce RCS Pressure IAW EEP-3 038EA1.05 – 4.1 / 4.3	A, L, N, S	3 (SRO-U)
b. CRO-NEW: Retrieve a dropped rod 003AA1.02 – 3.6 / 3.4	A, N, S	1 (SRO-U)
c. CRO-406B: Perform EEP-0 and Attachment 5 to Verify Phase B and Containment Spray WE14EA1.1 – 3.7 / 3.7	A, EN, L, D, S	5 (SRO-U)
d. CRO-343B: Place Letdown in Service following spurious SI 004A4.06 – 3.6 / 3.1	D, L, S	2
e. CRO-359F: Start and load an Emergency Diesel Generator 064A4.06 – 3.9 / 3.9	A, D, S	6
f. CRO-NEW: Raise RCS Flow and respond to RHR Pump Cavitation 005A2.03 – 2.9 / 3.1	A, L, M, S	4P
g. CRO-126A: Perform Intermediate Range NI functional check. 015A.3.03 3.9 / 3.9	D, S	7
h. CRO-277: Perform Control Room Operations for Liquid Radwaste Release. 068A4.02 – 3.2 / 3.1	D, S	9 (RO ONLY)

In-Plant Systems: * 3 for RO, 3 for SRO-I, and 3 or 2 for SRO-U		
i. SO-314A: Locally reset the TDAFWP trip throttle valve 061A2.03 – 3.1 / 3.4	D, E, L	4S (SRO-U)
j. SO-605: Align Firewater to Charging Pumps as alternate cooling 026AA1.06 – 2.9 / 2.9	D, E, R	8 (SRO-U)
k. SO-090: Place A BAT on Service and B BAT on recirc 004K1.16 - 3.3 / 3.5	D, R	1
* 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, and in-plant systems and functions may overlap those tested in the control room.		
* Type Codes	Criteria for R /SRO-I/SRO-U	
(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	4-6/4-6 /2-3 ≤ 9/≤ 8/≤ 4 ≥ 1/≥ 1/≥ 1 ≥ 1/≥ 1/≥ 1 (control room system) ≥ 1/≥ 1/≥ 1 ≥ 2/≥ 2/≥ 1 ≤ 3/≤ 3/≤ 2 (randomly selected) ≥ 1/≥ 1/≥ 1	

Operating Test Review Worksheet (ES-301-7) not completed for NRC-authored operating test.

NUMBER	ANSWER	K/A
1	B	003G2.4.18
2	A	003K5.04
3	B	004A1.10
4	A	005K5.09
5	D	005K6.03
6	D	006K4.07
7	B	007K5.02
8	D	008K2.02
9	B	008K3.03
10	C	010A4.01
11	C	012K4.02
12	A	012K6.10
13	B	013K2.01
14	C	022A3.01
15	B	026K1.02
16	B	039K4.06
17	B	059K3.03
18	C	061K6.02
19	B	062A1.03
20	A	062A2.05
21	B	063G2.4.31
22	B	064G2.4.45
23	C	064K1.02
24	A	073A2.01
25	D	076K2.04
26	C	078A4.01
27	D	078K1.03
28	B	103A3.01
29	A	001K1.03
30	A	002K6.12
31	A	011K2.02
32	D	014A4.04
33	B	017A1.01
34	C	029K3.02
35	B	033G2.4.20
36	C	034K4.02
37	C	072K5.01
38	B	086A2.01
39	C	007EK1.05
40	A	009EK2.03
41	B	015AG2.4.6
42	A	022AA1.07
43	D	025AA2.02
44	C	027AG2.4.8

This list of K/As, the subsequent list of Rejected K/As, and the original written exam sample plan form the basis for the "Final Written Exam Sample Plan."

NUMBER	ANSWER	K/A
45	B	029EG2.2.44
46	B	038EA1.38
47	B	APE040AK3.01
48	D	054AK1.02
49	C	055EK1.02
50	A	057AK3.01
51	B	058AA2.01
52	C	062AA2.01
53	A	077AA1.04
54	A	WE04EK2.2
55	C	WE05EK2.2
56	B	WE11EK3.4
57	B	001AA2.05
58	D	028AK3.03
59	C	037AA1.06
60	C	051AK3.01
61	D	074EA1.17
62	A	068AK2.07
63	D	076AG2.4.21
64	D	WE08EG2.4.47
65	D	WE09EK1.2
66	B	G2.2.21
67	B	G2.1.23
68	C	G2.1.38
69	C	G2.2.22
70	A	G2.2.43
71	D	G2.3.11
72	D	2.3.12
73	C	G2.4.13
74	B	G2.4.31
75	B	G2.4.46
76	C	007A2.02
77	D	010G2.4.9
78	B	022A2.05
79	B	026A2.08
80	A	073G2.4.6
81	D	015A2.04
82	D	035G2.4.8
83	A	045A2.08
84	D	008AG2.4.20
85	D	011EA2.01
86	A	026AG2.1.27
87	A	056AA2.37
88	B	065AA2.02
89	B	WE05EA2.1

NUMBER	ANSWER	K/A
90	C	024AA2.04
91	B	036AG2.4.45
92	A	WE03 EA2.2
93	A	WE14EG2.2.37
94	A/B	G 2.1.32
95	B	G2.1.4
96	B	G2.2.36
97	A	G 2.3.14
98	B	G2.3.4
99	C	G2.4.16
100	C	G2.4.30

K/A listed in column 2 is the rejected K/A

Tier / Group	Randomly Selected K/A	Reason for Rejection
T2G1 SRO Q#79	026A2.05	<p>NRC exam writer was unable to generate an acceptable discriminatory level question because there is no chemical addition tank injection related to Containment Spray.</p> <p>NRC Chief Examiner concurred with randomly selected 026A2.08 as the replacement.</p> <p><i>Containment Spray System (CSS). Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Safe securing of containment spray when it can be done. (IR: 3.2, 3.7)</i></p>
T1G1 SRO Q#84	008AG2.2.4 008AG2.2.40	<p>NRC exam writer was unable to generate an acceptable discriminatory level question because of a lack of unit differences in control room indications related to a pressurizer vapor space accident.</p> <p>NRC Chief Examiner concurred with randomly selected 008AG2.2.40 as the replacement.</p> <p><i>Pressurizer Vapor Space Accident. Ability to apply Technical Specifications for a system. (IR: 3.4, 4.7)</i></p> <p>(Change 2). Due to conflicts with the generic topic during EOP usage another KA generic topic was randomly selected.</p> <p>NRC Chief Examiner concurred with randomly selected 008AG2.4.20 as the replacement.</p> <p><i>Pressurizer Vapor Space Accident. Knowledge of the operational implications of EOP warnings, cautions, and notes.</i></p>
T1G1 SRO Q#88	065AA2.02	<p>10/1/19. Original K/A is on Farley's Master Rejected K/A list with the reason stated: "The facility cannot develop a valid question because there are no flow indicators in the plant's Instrument Air system".</p> <p>NRC Chief Examiner concurred with randomly selected 065AA2.01 as the replacement.</p> <p>Loss of Instrument Air. Cause and effect of low-pressure instrument air alarm.</p>

Tier / Group	Randomly Selected K/A	Reason for Rejection
T1G2 RO Q#59	037AA1.09	<p>10/14/19. Unable to generate an acceptable discriminatory level question.</p> <p>NRC Chief Examiner concurred with randomly selected 037AA1.06 as the replacement.</p> <p>Steam Generator Tube Leak. Main steam line rad monitor meters.</p>
T1G1 SRO Q#86	026AG2.4.3	<p>11/18/19. Unable to generate an acceptable discriminatory level question.</p> <p>NRC Chief Examiner concurred with randomly selected 026AG2.1.27 as the replacement.</p> <p>Loss of Component Cooling Water. Knowledge of system purpose and/or function.</p>
T1G2 RO Q#61	060AA1.01	<p>11/18/19. Unable to generate an acceptable discriminatory level question.</p> <p>NRC Chief Examiner concurred with randomly selected 074EA1.17 as the replacement.</p> <p>Inadequate Core Cooling. Ability to operate and monitor the following as they apply to Inadequate Core Cooling: S/G pressure and level indicators.</p>
T3 RO Q#66	G2.1.21	<p>2/26/2020. Improve overall exam balance for generic Conduct of Ops and Equipment control topics.</p> <p>NRC Chief Examiner concurred with randomly selected G2.2.21 as the replacement.</p> <p>G2.2.21: Knowledge of pre- and post-maintenance operability requirements.</p>

K/A listed in column 2 is the rejected K/A

Tier / Group	Randomly Selected K/A	Reason for Rejection
T2G1 SRO Q#79	026A2.05	<p>NRC exam writer was unable to generate an acceptable discriminatory level question because there is no chemical addition tank injection related to Containment Spray.</p> <p>NRC Chief Examiner concurred with randomly selected 026A2.08 as the replacement.</p> <p><i>Containment Spray System (CSS). Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Safe securing of containment spray when it can be done. (IR: 3.2, 3.7)</i></p>
T1G1 SRO Q#84	008AG2.2.4 008AG2.2.40	<p>NRC exam writer was unable to generate an acceptable discriminatory level question because of a lack of unit differences in control room indications related to a pressurizer vapor space accident.</p> <p>NRC Chief Examiner concurred with randomly selected 008AG2.2.40 as the replacement.</p> <p><i>Pressurizer Vapor Space Accident. Ability to apply Technical Specifications for a system. (IR: 3.4, 4.7)</i></p> <p>(Change 2). Due to conflicts with the generic topic during EOP usage another KA generic topic was randomly selected.</p> <p>NRC Chief Examiner concurred with randomly selected 008AG2.4.20 as the replacement.</p> <p><i>Pressurizer Vapor Space Accident. Knowledge of the operational implications of EOP warnings, cautions, and notes.</i></p>
T1G1 SRO Q#88	065AA2.02	<p>10/1/19. Original K/A is on Farley's Master Rejected K/A list with the reason stated: "The facility cannot develop a valid question because there are no flow indicators in the plant's Instrument Air system".</p> <p>NRC Chief Examiner concurred with randomly selected 065AA2.01 as the replacement.</p> <p>Loss of Instrument Air. Cause and effect of low-pressure instrument air alarm.</p>

Tier / Group	Randomly Selected K/A	Reason for Rejection
T1G2 RO Q#59	037AA1.09	<p>10/14/19. Unable to generate an acceptable discriminatory level question.</p> <p>NRC Chief Examiner concurred with randomly selected 037AA1.06 as the replacement.</p> <p>Steam Generator Tube Leak. Main steam line rad monitor meters.</p>
T1G1 SRO Q#86	026AG2.4.3	<p>11/18/19. Unable to generate an acceptable discriminatory level question.</p> <p>NRC Chief Examiner concurred with randomly selected 026AG2.1.27 as the replacement.</p> <p>Loss of Component Cooling Water. Knowledge of system purpose and/or function.</p>
T1G2 RO Q#61	060AA1.01	<p>11/18/19. Unable to generate an acceptable discriminatory level question.</p> <p>NRC Chief Examiner concurred with randomly selected 074EA1.17 as the replacement.</p> <p>Inadequate Core Cooling. Ability to operate and monitor the following as they apply to Inadequate Core Cooling: S/G pressure and level indicators.</p>
T3 RO Q#66	G2.1.21	<p>2/26/2020. Improve overall exam balance for generic Conduct of Ops and Equipment control topics.</p> <p>NRC Chief Examiner concurred with randomly selected G2.2.21 as the replacement.</p> <p>G2.2.21: Knowledge of pre- and post-maintenance operability requirements.</p>

Facility: FARLEY		Date of Exam: JULY 31, 2020		Exam Level: RO <input checked="" type="checkbox"/> SRO <input checked="" type="checkbox"/>	
Item Description	Initial				
	a	b*	c*#		
1. Questions and answers are technically accurate and applicable to the facility.	<i>ntl</i>		<i>b/c</i>		
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available. c. Correct answer explanation and distractor analysis provided (ES-401, D.2.g)	<i>ntl</i>		<i>b/c</i>		
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401	<i>ntl</i>		<i>b/c</i>		
4. The sampling process was random and systematic. (If more than four RO or two SRO questions were repeated from the last two NRC licensing exams, consult the NRR/NRO OL program office).	<i>ntl</i>		<i>b/c</i>		
5. Question duplication from the licensee screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate. ___ The audit exam was systematically and randomly developed, or ___ the audit exam was completed before the license exam was started, or <input checked="" type="checkbox"/> the examinations were developed independently, or ___ the licensee certifies that there is no duplication, or ___ other (explain).	<i>ntl</i>		<i>b/c</i>		
6. Bank use meets limits (no more than 75% from the bank, at least 10% new, and the rest new or modified); enter the actual RO/SRO-only question distribution(s) at right.	Bank	Modified	New	<i>ntl</i>	<i>b/c</i>
	13 / 2	18 / 3	44 / 20		
7. Between 38 and 45 questions of the questions on the RO exam and at least 13 questions of the questions on the SRO-only portion of the exam are written at the comprehension/analysis level (see ES-401, D.2.c); enter the actual RO/SRO-only question distribution(s) at right.	Memory		C/A	<i>ntl</i>	<i>b/c</i>
	36 / 9		39 / 16		
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	<i>ntl</i>		<i>b/c</i>		
9. Question content conforms to specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.	<i>ntl</i>		<i>b/c</i>		
10. Question psychometric quality and format meet the guidelines in Appendix B.	<i>ntl</i>		<i>b/c</i>		
11. The exam contains the required number of one-point, multiple-choice items; the total is correct and agrees with the value on the cover sheet.	<i>ntl</i>		<i>b/c</i>		
Printed Name/Signature		Date			
a. Author	Newton T. Lacy	<small>Digitally signed by Newton T. Lacy Date: 2020.07.14 08:25:37 -04'00'</small>		_____	
b. Facility Reviewer (*)	N/A		_____		
c. NRC Chief Examiner (#)	Bruno L. Caballero	<small>Digitally signed by Bruno L. Caballero Date: 2020.07.14 08:20:58 -04'00'</small>		_____	
d. NRC Regional Supervisor	Eugene Guthrie	<small>Digitally signed by Eugene Guthrie Date: 2020.07.16 12:19:58 -04'00'</small>		_____	
Note:	* The facility reviewer's initials or signature are not applicable for NRC-developed examinations.				
	# Independent NRC reviewer initials items in Column "c"; chief examiner concurrence is required.				

Final Written Exam Review Worksheet (ES-401-9) not completed for NRC-authored written exam