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1CAN061705

June 15, 2017

Mr. Brian Larson  
Chief Examiner  
U. S. Nuclear Regulatory Commission  
1600 E. Lamar Blvd.  
Arlington, TX 76011-4125

Subject: Initial Retake Examination Completion of Post-Examination Analysis  
Arkansas Nuclear One Unit 1 (B&W)  
Docket No. 50-313

Dear Mr. Larson,

Contained in this submittal are the post examination materials as required per NUREG 1021, Revision 10 for the ANO Unit One initial retake written examination administered on June 15, 2017. The examination security agreement which is enclosed has not been finalized and the completed ES-201-3 form will be sent when all required signatures are obtained.

We also request that all examination materials related to the ANO Unit One 2017 NRC Operator License Examination be withheld from public disclosure for a period of two years from this date.

If you have any questions regarding this submittal, please contact Randal Martin at (479) 858-6844.

Sincerely,

A handwritten signature in black ink, appearing to be "DGK", written over a horizontal line.

DGK/rkm

Enclosures

cc w/o enclosures: Licensing, ANO-DCC

ANO-1 2017 NRC Initial License  
Written Exam Analysis

	RO		SRO →		Fraction				
					Incorrect	A	B	C	D
1		D			0.333333	0	0	0	1
2					0	0	0	0	0
3					0	0	0	0	0
4					0	0	0	0	0
5					0	0	0	0	0
6		B			0.333333	0	1	0	0
7	C				0.333333	0	0	1	0
8					0	0	0	0	0
9					0	0	0	0	0
10					0	0	0	0	0
11					0	0	0	0	0
12					0	0	0	0	0
13					0	0	0	0	0
14					0	0	0	0	0
15					0	0	0	0	0
16					0	0	0	0	0
17					0	0	0	0	0
18					0	0	0	0	0
19	A		A		0.666667	2	0	0	0
20					0	0	0	0	0
21					0	0	0	0	0
22					0	0	0	0	0
23	C				0.333333	0	0	1	0
24					0	0	0	0	0
25					0	0	0	0	0
26		A			0.333333	1	0	0	0
27					0	0	0	0	0
28	C				0.333333	0	0	1	0
29					0	0	0	0	0
30					0	0	0	0	0
31					0	0	0	0	0
32					0	0	0	0	0
33					0	0	0	0	0
34					0	0	0	0	0
35					0	0	0	0	0
36					0	0	0	0	0
37	D				0.333333	0	0	0	1
38					0	0	0	0	0
39		D			0.333333	0	0	0	1
40					0	0	0	0	0
41					0	0	0	0	0
42					0	0	0	0	0
43					0	0	0	0	0
44	C				0.333333	0	0	1	0
45					0	0	0	0	0
46	C	C			0.666667	0	0	2	0
47					0	0	0	0	0
48					0	0	0	0	0
49					0	0	0	0	0
50					0	0	0	0	0
51					0	0	0	0	0
52					0	0	0	0	0
53					0	0	0	0	0
54					0	0	0	0	0
55					0	0	0	0	0

ANO-1 2017 NRC Initial License  
Written Exam Analysis

56					0	0	0	0	0
57	A	D	A		1	2	0	0	1
58					0	0	0	0	0
59					0	0	0	0	0
60					0	0	0	0	0
61	D	D			0.666667	0	0	0	2
62					0	0	0	0	0
63			B		0.333333	0	1	0	0
64					0	0	0	0	0
65		B			0.333333	0	1	0	0
66					0	0	0	0	0
67	B	D	D		1	0	1	0	2
68					0	0	0	0	0
69					0	0	0	0	0
70					0	0	0	0	0
71					0	0	0	0	0
72					0	0	0	0	0
73					0	0	0	0	0
74		D			0.333333	0	0	0	1
75					0	0	0	0	0
76					0	0	0	0	0
77					0	0	0	0	0
78					0	0	0	0	0
79					0	0	0	0	0
80					0	0	0	0	0
81					0	0	0	0	0
82					0	0	0	0	0
83					0	0	0	0	0
84					0	0	0	0	0
85					0	0	0	0	0
86					0	0	0	0	0
87					0	0	0	0	0
88					0	0	0	0	0
89					0	0	0	0	0
90					0	0	0	0	0
91					0	0	0	0	0
92					0	0	0	0	0
93					0	0	0	0	0
94					0	0	0	0	0
95			A		1	1	0	0	0
96					0	0	0	0	0
97					0	0	0	0	0
98					0	0	0	0	0
99					0	0	0	0	0
100					0	0	0	0	0
	10	10	5						
<b>RO</b>	86.67%	86.67%							
		<b>Over-All</b>	95.00%						
			1						
		<b>SRO Only</b>	96.00%						

# 2017 ANO-1 NRC Exam

Administered June 15, 2017

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## RO Final Written Examination Analysis

The threshold for determination of questions to be analyzed was a percentage of 50% incorrect responses. Due to only three applicants taking the exam this means that if two applicants missed a question, then it was analyzed.

### #19

2/3 total applicants incorrect (66.7%)

Both chose "A". The correct answer is "B".

This question involves an approach to criticality where the operator is withdrawing rods when there is outward rod motion without a command and SUR is sustained at 2.5 DPM. The correct response in "B" is to trip the reactor and go to the Reactor Trip EOP. Distractor "A" contains only part of a sequence of commands (not all) which *might* stop outward rod motion without a command. No change to the key was made. The question is technically correct as written, with no construction problems. We will be performing training needs analysis on this question.

### #46

2/3 total applicants incorrect (66.7%)

Two chose "C". The correct answer is "B".

This question involves a Blackout condition and asks the minimum time the vital batteries are designed to power essential loads, and what loads are secured to extend battery capacity. The "C" distractor contains the correct loads which are secured but has the incorrect minimum time. No change to the key was made. The question is technically correct as written, with no construction problems. We will be performing training needs analysis on this question.

### #57

3/3 total applicants incorrect (100.0%)

Two chose "A", one chose "D". The correct answer is "C".

This question asks what feature in the ICS is specifically designed to respond to malfunctions which will have an effect on the nuclear fuel. The correct answer is the Delta Tc Controller whose only purpose is to minimize differences in cold leg temperatures between the loops and thus minimizes the effects those differences could have on quadrant tilt in the reactor core. No change to the key was made. The question is technically correct as written, with no construction problems. We will be performing training needs analysis on this question.

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(RO Final Written Examination Analysis continued)

#61

2/3 total applicants incorrect (66.7%)

Both chose "D". The correct answer is "C".

This question is about commencing a Reactor Building purge. This is an operation performed only during refueling outages and as such, the applicants may not have any experience with this equipment. However, this topic is part of their curriculum and is included in the K/A catalog. No change to the key was made. The question is technically correct as written, with no construction problems. We will be performing training needs analysis on this question.

#67

3/3 total applicants incorrect (100.0%)

Two chose "D" and one chose "B". The correct answer is "C".

This question is about the procedural requirements for manually seating a non-Q MOV inside the Reactor Building. The answer choices are in a "2x2" format and thus one must know two pieces of knowledge: 1) are danger tags used in the Reactor Building during heatup, and 2) do non-Q MOVs require the use of a torque wrench. Both incorrect answers chosen contain the use of danger tags.. No change to the key was made. The question is technically correct as written, with no construction problems. We will be performing training needs analysis on this question.

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## SRO Final Written Examination Analysis

Since there was only one SRO applicant the threshold for determination of questions to be analyzed was simply a miss of the question.

### #95

1/1 total applicants missed (100.0%)

One chose "A". The correct answer is "D".

The question concerns two pieces of knowledge: 1) the maximum Tech Spec limit for dose equivalent I-131, and 2) which accident, besides a Main Steam Line Break, is this specification designed for. The answer chosen did not contain either correct piece of information. No change to the key was made. The question is technically correct as written, with no construction problems. We will be performing training needs analysis on this question.

### NOTE:

The document initiated to perform training needs analysis is WTANO-2017-00233.