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Omaha Public Power District

444 South 16th Street Mall
Omaha NE 68102-2247

July 15, 2005
LIC-05-0086

Mr. Tom McKernon, Chief Examiner
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76001

Reference: Docket No. 50-285

Subject: Technical Review of the Reactor Operator (RO) and Senior Reactor Operator (SRO) Licensing Written Examinations

The Omaha Public Power District (OPPD) has evaluated the RO and SRO licensing examinations that OPPD administered at Fort Calhoun Station on July 8, 2005. In accordance with NUREG-1021 (Operator Licensing Examination Standards for Power Reactors), OPPD's comments justifying changes made to the examination answer keys are attached. A review of all questions missed by 50% or more of the license candidates revealed no weaknesses that require changes to the licensed operator initial training program.

The following items were provided to you prior to the exit meeting:

- The graded written examinations and clean copies
- The master examinations and answer keys
- Question asked by and answers given to the applicants during the written examinations
- The written examination seating chart
- A completed form ES-403-1
- An analysis of the preliminary and final examination results
- A copy of the examination security agreement with signatures obtained thus far (the original will be sent when we have obtained all of the required signatures)

If you should have any questions, please contact myself or Mr. Dave Weaver at 402-533-6056.

Sincerely,

H. J. Faulhaber
Division Manager
Nuclear Engineering

Attachment

c: B. S. Mallett, NRC Regional Administrator, Region IV (w/o Enclosures)
A. B. Wang, NRC Project Manager (w/o Enclosures)
John Hanna, NRC Senior Resident Inspector (w/o Enclosures)
Document Control Desk (w/o Enclosures)

Attachment

Justification for changes made to the exam keys for the RO and SRO written exams conducted at Fort Calhoun Station on 7/8/05

Comment on NRC Written Exam Administered July 8, 2005 at Fort Calhoun Station

Question Number 002

The question concerns the steps for restoration of letdown, per EOP-AOP Attachment 23, when RCS pressure is 1650 psia and rising following a small break LOCA that resulted in PPLS actuation. Step 3 of Attachment 23 states, "**IF** Engineered Safeguards has **NOT** been reset, **THEN** reset Engineered Safeguards PER the applicable EOP/AOP Floating Step." Answer A, "Reset Engineered Safeguards relays," is correct as indicated on the answer key.

EOP-03, Floating Step H provides is applicable for resetting Engineered Safeguards. In this situation, the following steps of Floating Step H require manipulation of control devices in order to restore letdown:

Step 3.c. Block PPLS-A and PPLS-B.

Step 3.e. Reset **BOTH** of the following relays:

- 86A/PPLS
- 86B/PPLS

Step 3.f. Reset **BOTH** of the following relays:

- 86A1/PPLS
- 86B1/PPLS

Step 7. Reset **ALL** of the following relays:

- 86A/CIAS
- 86B1/CIAS
- 86B/CIAS
- 86A1/CIAS

Other steps in Floating Step H are not applicable in this situation, do not require manipulation of control devices under the conditions established by the question, or are not directly necessary for the restoration of letdown. This means that answer B, "Block PPLS, Reset PPLS and CIAS lockout relays," is also a correct answer.

Therefore, we request that two responses, A or B, be accepted as correct answers for question number 002.

QUESTION NUMBER: 002

A small break LOCA resulted in PPLS actuation. The break has been isolated by closing a PORV block valve and pressurizer level has returned to 60% and is continuing to rise. RCS pressure is at 1650 psia and rising. Containment pressure is 0.5 psig. What action should be taken to allow the letdown isolation valves, HCV-204 and TCV-202 to be opened in this situation per EOP-AOP Attachment 23, "Restoration of Letdown"?

A. Reset Engineered Safeguards relays.

B. Block PPLS, Reset PPLS and CIAS lockout relays

C. Place the CIAS override switches for the valves in override.

D. Place the Defeat switch for HCV-204 in the defeat position.

Question 2 K/A # 000009 EA2.08

Ability to determine or interpret the following as they apply to a small break LOCA:Letdown isolation valve position indication

RO Importance 2.9* SRO Importance 2.9* 10 CFR 55 Section 43.5 / 45.13

FCS Lesson Plan / Objective 0711-02 01.02

EXPLAIN, the manual and automatic functions of control valves in the CVCS.

KA#:	000009 EA2.08	Bank Ref #:	
LP# / Objective:	0711-02 01.02	Exam Level:	RO
Cognitive Level:	HIGH	Source:	NEW
Reference:	EOP-03	Handout:	NONE

Attachment 23

Restoration of Letdown

INSTRUCTIONS	CONTINGENCY ACTIONS

****

CAUTION

Restoring letdown can result in adverse radiological conditions in the Auxiliary Building.

****

1. Verify letdown restoration criteria are satisfied:

   - HPSI Stop and Throttle criteria are satisfied
   - Letdown is needed or desired
   - No LOCA exists in the CVCS

1.1 **IF** letdown restoration criteria are **NOT** satisfied,
THEN letdown can **NOT** be restored.

2. **IF** a UHE is the only event in progress,
THEN Letdown may be restored by performing the following steps:

   a. Place HIC-101, Letdown Flow Controller, in MANUAL.

   b. Close HIC-101.

(continue)

Attachment 23

Restoration of Letdown

INSTRUCTIONS

CONTINGENCY ACTIONS

2. (continued)

   c. Place PIC-210, Letdown Pressure Controller, in MANUAL.

   d. Throttle PCV-210 to approximately 10% OPEN.

   e. Place **BOTH** of the following CIAS override switches to override:

      - "HCV-204 CIAS OVERRIDE"
      - "TCV-202 CIAS OVERRIDE"

   f. GO TO Step 8.

3. **IF** Engineered Safeguards have **NOT** been reset,
   THEN reset Engineered Safeguards PER the applicable EOP/AOP Floating Step.

Attachment 23

Restoration of Letdown

INSTRUCTIONS	CONTINGENCY ACTIONS
4. Place HIC-101, Letdown Flow Controller, in MANUAL.	
5. Close HIC-101.	
6. Place PIC-210, Letdown Pressure Controller, in MANUAL.	
7. Throttle PCV-210 to approximately 10% OPEN.	
8. Open **BOTH** of the following Letdown Isolation Valves: • HCV-204 • TCV-202	
9. Initiate letdown using HIC-101 while adjusting PCV-210 to maintain letdown pressure approximately 300 psig.	
10. Balance charging and letdown to maintain desired pressurizer level.	

End of Attachment 23

8.0 FLOATING STEPS

H. RESET OF ENGINEERED SAFEGUARDS

INSTRUCTIONS CONTINGENCY ACTIONS

****

CAUTION

Do not perform this floating step if CSAS relays are tripped to prevent damage to VIAS relays.

****

1. **IF** CPHS has actuated
   AND Containment pressure is less than
   or equal to 3.0 psig,
   THEN reset CPHS by performing the
   following steps:

NOTE

Resetting CPHS Lockout Relays may reset SGIS. HCV-1105 and HCV-1106 may reopen.

a. Reset **BOTH** of the following relays:

- 86A/CPHS
- 86B/CPHS

b. Reset **BOTH** of the following relays:

- 86A1/CPHS
- 86B1/CPHS

8.0 FLOATING STEPS

H. RESET OF ENGINEERED SAFEGUARDS

INSTRUCTIONS	CONTINGENCY ACTIONS
2. **IF** PPLS has **NOT** actuated, **THEN** GO TO Step 4.	
3. Reset PPLS by performing the following steps:	
a. **IF** RCS pressure is greater than 1700 psia, **THEN** GO TO Step 3.e.	
b. Verify **BOTH** of the following RCS Temperature instruments are operable: • T-113 • T-123	b.1 **IF** either RCS Temperature instrument is inoperable, **THEN** disable the PORVs by closing **BOTH** PORV Block Valves: • HCV-150 • HCV-151
c. Block PPLS-A and PPLS-B.	

(continue)

8.0 FLOATING STEPS

H. RESET OF ENGINEERED SAFEGUARDS

INSTRUCTIONS	CONTINGENCY ACTIONS
3. (continued)	
d. Verify **ALL** of the PPLS Blocked alarms annunciate: • "PPLS "A" BLOCKED" (CB-1,2,3; A4) • "PPLS "B" BLOCKED" (CB-1,2,3; A4) • "PPLS-B BLOCKED" (AI-30B; A34-1) • "PPLS-A1 BLOCKED" (AI-30B; A34-2) • "PPLS-B1 BLOCKED" (AI-30A; A33-2) • "PPLS-A BLOCKED" (AI-30A; A33-1)	d.1 **IF** any of the PPLS Blocked alarms do **NOT** annunciate, **THEN** continue attempts to block PPLS until all alarms annunciate.
e. Reset **BOTH** of the following relays: • 86A/PPLS • 86B/PPLS	
f. Reset **BOTH** of the following relays: • 86A1/PPLS • 86B1/PPLS	

8.0 FLOATING STEPS

H. RESET OF ENGINEERED SAFEGUARDS

INSTRUCTIONS	CONTINGENCY ACTIONS

4. Place **ALL** of the Containment Cooler CCW Valve Hand Controllers in "OPEN":

   - HCV-400C
   - HCV-401C
   - HCV-402C
   - HCV-403C

5. Place **BOTH** of the following EHC Pump control switches in "PULL-TO-LOCK":

   - EHC-3A
   - EHC-3B

6. **IF** OPLS has actuated,
   THEN place **ALL** of the following Condenser Evacuation Pump control switches in "PULL-TO-LOCK":

   - FW-8A
   - FW-8B
   - FW-8C

8.0 FLOATING STEPS

H. RESET OF ENGINEERED SAFEGUARDS

INSTRUCTIONS | CONTINGENCY ACTIONS

NOTE

When SIAS relays are reset, **ALL** of the following equipment may reposition:

- HCV-489A/B, 490A/B, 491A/B, and 492A/B, RW/CCW HX CCW valves - upon reset, valves will return to their pre-SIAS position
- LCV-218-2 - if in AUTO or OPEN, valve will reopen
- CH-4A/B - will stop unless control switch has been red-flagged
- WD-2A/B - RCDT pumps may restart
- WD-3A/B - Containment Sump Pumps may restart
- WD-27A/B, 40A/B, 41A/B Aux Building Sump pumps may restart
- Pressurizer Backup Heater Bank 1, Group 2 and 3; Bank 2, Group 5; Bank 3, Group 9; and Bank 4, Group 11 and 12 will reenergize if previously in service and pressurizer level above the low level cutoff
- VD-7A - Vacuum priming pump will restart if selected
- WD-26A/B, Aux Bldg Sump Tank Pumps may restart

7. Reset **ALL** of the following relays:

- 86A/SIAS
- 86AX/SIAS
- 86A/CIAS
- 86B1/SIAS
- 86B1X/SIAS
- 86B1/CIAS
- 86B/SIAS
- 86BX/SIAS
- 86B/CIAS
- 86A1/SIAS
- 86A1X/SIAS
- 86A1/CIAS

2005 NRC WRITTEN EXAM GRADING and ANALYSIS

QUESTION #	ANSWER KEY	ALT. ANSWER	STUDENT ANSWERS 1	2	3	4	5	6	7	8	9	10	STUDENT SCORING 1	2	3	4	5	6	7	8	9	10	% CORRECT	ANSWER KEY	"a"	"b"	"c"	"d"
POINTS													75	75	75	75	75	75	100	100	100	100						
CORRECT													67	66	71	68	68	67	95	89	92	94						
SCORE													89.33%	88.00%	94.67%	90.67%	90.67%	89.33%	95.00%	89.00%	92.00%	94.00%						
			[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]						
1	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
2	a	b	c	b	b	b	a	c	b	a	a	b	0	1	1	1	1	0	1	1	1	1	80%	a	3	5	2	0
3	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
4	a		a	c	a	a	b	a	a	b	a	b	1	0	1	1	0	1	1	0	1	0	60%	a	6	3	1	0
5	d		d	d	d	d	c	d	d	c	c	d	1	1	1	1	0	1	1	0	0	1	70%	d	0	0	3	7
6	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
7	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
8	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
9	d		d	d	d	c	d	d	d	d	d	d	1	1	1	0	1	1	1	1	1	1	90%	d	0	0	1	9
10	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
11	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
12	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
13	a		d	d	c	a	a	a	a	a	a	a	0	0	0	1	1	1	1	1	1	1	70%	a	7	0	1	2
14	b		c	b	b	b	b	c	c	b	b	b	0	1	1	1	1	0	0	1	1	1	70%	b	0	7	3	0
15	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
16	a		b	a	a	a	a	a	a	a	a	a	0	1	1	1	1	1	1	1	1	1	90%	a	9	1	0	0
17	b		b	b	b	a	b	b	b	b	b	b	1	1	1	0	1	1	1	1	1	1	90%	b	1	9	0	0
18	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
19	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
20	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
21	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
22	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
23	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
24	c		c	c	c	a	c	c	c	c	a	c	1	1	1	0	1	1	1	1	0	1	80%	c	2	0	8	0
25	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
26	a		a	a	a	a	a	a	d	a	a	a	1	1	1	1	1	1	0	1	1	1	90%	a	9	0	0	1
27	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
28	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
29	d		d	c	d	d	d	d	d	d	d	d	1	0	1	1	1	1	1	1	1	1	90%	d	0	0	1	9
30	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
31	d		d	d	c	d	d	d	d	d	d	c	1	1	0	1	1	1	1	1	1	0	80%	d	0	0	2	8
32	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
33	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
34	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
35	a		c	a	d	d	a	d	a	c	a	a	0	1	0	0	1	0	1	0	1	1	50%	a	5	0	2	3
36	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
37	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
38	b		b	d	b	b	d	d	d	d	d	d	1	0	1	1	0	0	0	0	0	0	30%	b	0	3	0	7
39	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
40	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
41	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
42	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
43	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
44	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
45	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
46	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
47	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
48	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
49	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
50	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
51	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
52	c		c	c	c	c	c	b	c	c	c	c	1	1	1	1	1	0	1	1	1	1	90%	c	0	1	9	0
53	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
54	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
55	a		d	a	a	a	a	a	a	a	a	a	0	1	1	1	1	1	1	1	1	1	90%	a	9	0	0	1
56	c		c	b	c	b	a	c	c	c	a	c	1	0	1	0	0	1	1	1	0	1	80%	c	2	2	6	0
57	d		b	d	d	c	d	d	d	b	d	d	0	1	1	0	1	1	1	0	1	1	70%	d	0	2	1	7
58	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
59	d		a	b	d	c	a	b	a	a	c	a	0	0	1	0	0	0	0	0	0	0	10%	d	5	2	2	1
60	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
61	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
62	c		c	a	c	c	c	c	c	c	c	c	1	0	1	1	1	1	1	1	1	1	90%	c	1	0	9	0
63	a		a	b	a	a	d	b	a	a	a	a	1	0	1	1	0	0	1	1	1	1	70%	a	7	2	0	1
64	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
65	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
66	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
67	b		b	a	a	b	a	b	b	c	b	b	1	0	0	1	0	1	1	0	1	1	60%	b	3	6	1	0
68	d		d	d	d	d	d	c	d	d	d	d	1	1	1	1	1	0	1	1	1	1	90%	d	0	0	1	9
69	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
70	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
71	d		d	d	d	d	d	d	d	d	d	d	1	1	1	1	1	1	1	1	1	1	100%	d	0	0	0	10
72	b		b	b	b	b	b	b	b	b	b	b	1	1	1	1	1	1	1	1	1	1	100%	b	0	10	0	0
73	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
74	a		a	a	a	a	a	a	a	a	a	a	1	1	1	1	1	1	1	1	1	1	100%	a	10	0	0	0
75	c		c	c	c	c	c	c	c	c	c	c	1	1	1	1	1	1	1	1	1	1	100%	c	0	0	10	0
76	b								b	b	b	b							1	1	1	1	100%	b	0	4	0	0
77	c								c	c	c	c							1	1	1	1	100%	c	0	0	4	0
78	a								a	a	a	a							1	1	1	1	100%	a	4	0	0	0
79	c								c	b	c	c							1	0	1	1	75%	c	0	1	3	0
80	b								b	b	b	b							1	1	1	1	100%	b	0	4	0	0
81	d								d	d	d	d							1	1	1	1	100%	d	0	0	0	4
82	b								d	b	b	b							0	1	1	1	75%	b	0	3	0	1
83	c								c	c	c	c							1	1	1	1	100%	c	0	0	4	0
84	a								a	a	c	a							1	1	0	1	75%	a	3	0	1	0
85	d								d	d	a	d							1	1	0	1	75%	d	1	0	0	3
86	c								c	c	c	c							1	1	1	1	100%	c	0	0	4	0
87	a								a	b	a	a							1	0	1	1	75%	a	3	1	0	0
88	c								c	c	c	c							1	1	1	1	100%	c	0	0	4	0
89	d								d	c	b	d							1	0	0	1	50%	d	0	1	1	2
90	c								c	c	c	c							1	1	1	1	100%	c	0	0	4	0
91	d								d	d	d	d							1	1	1	1	100%	d	0	0	0	4
92	b								b	b	b	b							1	1	1	1	100%	b	0	4	0	0
93	c								c	c	c	a							1	1	1	0	75%	c	1	0	3	0
94	d								d	d	d	d							1	1	1	1	100%	d	0	0	0	4
95	c								c	c	c	c							1	1	1	1	100%	c	0	0	4	0
96	b								b	b	b	b							1	1	1	1	100%	b	0	4	0	0
97	c								c	c	c	c							1	1	1	1	100%	c	0	0	4	0
98	a								a	a	a	a							1	1	1	1	100%	a	4	0	0	0
99	c								c	c	c	c							1	1	1	1	100%	c	0	0	4	0
100	c								c	a	c	a							1	0	1	0	50%	c	2	0	2	0