Candidate	RO1	RO2	RO3	SRO1	SRO2	SRO3	SRO4	SRO5	SRO6	SRO7	SRO8	SRO9	Correct Answer
Question1	C	A	A	C	A	B	D	C	A	C	A	C	A
Question2	B	B	B	B	B	B	B	B	D	B	B	B	B
Question3	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted
Question4	B	B	B	D	B	B	A	B	A	B	A	B	A
Question5	D	B	D	D	D	D	D	D	D	D	D	D	D
Question6	A	B	A	B	A	A	B	A	B	A	A	A	A
Question7	A	A	A	A	A	B	A	A	D	A	A	A	A
Question8	D	D	D	B	B	D	B	D	D	D	B	D	D
Question9	B	C	C	C	C	C	D	C	C	C	B	A	C
Question10	B	B	B	B	B	B	B	B	B	B	B	B	B
Question11	D	B	A	B	D	D	A	B	A	A	A	D	D
Question12	C	C	C	C	C	C	C	C	C	C	C	C	C
Question13	C	C	C	C	C	C	C	C	C	C	C	C	C
Question14	C	C	C	C	C	C	C	C	C	C	C	C	C
Question15	D	D	D	D	D	D	D	D	D	D	D	D	D
Question16	B	B	B	B	B	B	B	B	B	B	B	B	B
Question17	B	B	B	B	B	B	B	B	B	B	B	B	B
Question18	D	D	D	D	D	D	D	D	D	D	D	D	D
Question19	B	B	B	B	B	B	B	B	B	B	B	B	B
Question20	B	B	B	B	B	B	B	B	B	B	B	B	B
Question21	D	D	D	D	D	D	D	D	D	D	D	B	D
Question22	D	D	D	B	A	D	D	D	D	D	D	D	D
Question23	D	D	D	D	D	D	D	D	D	D	D	D	D
Question24	B	A	C	D	B	D	D	B	C	D	C	D	B
Question25	A	A	A	A	A	A	A	A	A	A	A	A	A
Question26	C	B	C	B	C	C	C	C	C	C	C	C	C
Question27	D	D	D	A	D	D	B	D	D	D	D	D	D
Question28	A	A	A	A	A	A	A	A	A	A	A	A	A
Question29	D	D	D	D	D	D	D	D	B	D	D	D	D
Question30	C	B	C	C	C	C	C	C	C	C	A	C	C
Question31	B	D	D	D	D	D	D	D	D	D	D	D	D
Question32	A	A	D	D	A	A	A	A	A	A	A	A	A
Question33	B	B	B	B	B	B	B	B	B	B	B	B	B
Question34	A	A	A	A	A	A	A	A	A	A	A	A	A

Candidate	RO1	RO2	RO3	SRO1	SRO2	SRO3	SRO4	SRO5	SRO6	SRO7	SRO8	SRO9	Correct Answer
Question35	A	B	A	A	A	A	A	A	A	A	A	A	A
Question36	D	D	D	D	D	D	D	D	D	D	D	D	D
Question37	D	D	D	D	D	D	D	D	D	D	D	D	D
Question38	D	D	D	C	D	D	D	D	D	D	D	D	D
Question39	B	B	B	B	A	C	A	B	B	B	B	B	B
Question40	A	A	A	A	A	A	A	A	A	A	A	A	A
Question41	C	D	D	D	D	D	B	D	D	D	D	D	D
Question42	D	D	D	B	C	B	D	D	D	D	D	D	D
Question43	A	A	A	A	A	A	A	A	A	A	A	A	A
Question44	D	D	D	D	D	D	D	D	D	D	D	D	D
Question45	B	B	B	B	B	B	B	B	B	B	B	B	B
Question46	C	C	C	C	C	C	C	C	C	C	C	C	C
Question47	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted	Deleted
Question48	A	A	A	A	A	A	C	A	A	A	A	A	A
Question49	D	D	D	D	D	D	D	D	D	D	D	D	D
Question50	C	C	C	C	C	C	A	C	A	C	C	C	C
Question51	A	A	A	A	D	A	A	D	A	A	A	A	A
Question52	B	B	B	B	B	B	B	B	C	B	B	B	B
Question53	A	A	D	A	D	A	A	A	A	A	A	A	A
Question54	A	B	B	A	C	A	A	B	A	B	B	D	B
Question55	D	D	D	D	D	D	D	D	D	D	D	D	D
Question56	C	C	C	C	C	B	C	C	C	C	D	C	C
Question57	B	C	B	B	B	B	B	B	B	B	B	B	B
Question58	D	C	A	C	B	B	C	C	C	D	C	B	C
Question59	D	D	D	D	D	D	D	D	D	D	C	D	D
Question60	D	B	B	C	A	D	D	A	D	B	D	A	B
Question61	B	B	B	B	B	B	B	B	B	B	B	B	B
Question62	A	D	A	A	A	A	A	A	A	C	A	A	A
Question63	D	D	D	D	D	D	D	D	D	D	D	D	D
Question64	B	B	B	B	B	B	B	B	B	B	B	B	B
Question65	D	D	D	D	D	D	D	D	D	D	D	D	D
Question66	B	A	A	B	B	B	B	B	A	B	B	B	B
Question67	A	A	A	A	A	D	A	A	A	A	A	A	A
Question68	D	D	D	A	A	D	D	A	C	D	A	A	D

Candidate	RO1	RO2	RO3	SRO1	SRO2	SRO3	SRO4	SRO5	SRO6	SRO7	SRO8	SRO9	Correct Answer
Question69	C	B	D	C	D	C	C	C	C	B	C	B	C
Question70	C	C	C	C	C	C	C	C	A	C	C	C	C
Question71	B	B	B	B	B	B	B	B	B	B	B	B	B
Question72	C	C	C	C	C	C	C	C	C	C	C	C	C
Question73	C	A	C	C	C	C	C	C	C	C	C	C	C
Question74	A	A	A	A	A	B	A	A	A	A	A	A	A
Question75	C	C	C	C	C	C	C	C	C	C	C	C	C
Question76	SRO ONLY QUESTIONS			B	B	B	C	A	A	B	B	B	C
Question77				C	C	C	C	C	B	C	C	C	C
Question78				C	D	D	D	D	D	B	D	D	D
Question79				A	A	A	A	A	A	A	A	A	A
Question80				D	D	A	A	A	A	A	A	A	A
Question81				C	C	C	C	C	C	C	C	C	C
Question82				B	B	A	B	B	B	B	B	B	B
Question83				B	B	B	B	B	B	B	B	B	B
Question84				C	C	C	C	C	C	C	C	C	C
Question85				D	D	D	D	D	D	C	D	D	D
Question86				D	A	D	D	D	D	D	D	D	D
Question87				B	B	B	B	B	B	B	B	B	B
Question88				A	A	A	C	A	D	A	A	A	A
Question89				D	D	D	D	D	D	D	D	D	D
Question90				C	B	B	B	B	B	B	B	C	B
Question91				C	C	C	C	C	D	C	C	C	C
Question92				C	C	C	C	C	C	C	C	C	C
Question93				B	B	A	B	B	C	B	B	A	B
Question94				B	B	B	B	B	B	B	B	B	B
Question95				D	B	A	A	B	B	B	B	B	B
Question96				A	A	A	A	A	A	A	A	B	A
Question97				D	D	D	D	C	D	D	D	D	D
Question98				A	A	A	A	A	A	A	A	A	A
Question99				D	D	A	A	D	C	D	D	C	C
Question 100				B	B	D	B	B	B	B	B	B	B

Response to Diablo Canyon Written Exam Question Challenges

1. Reactor Operator Exam Question 3 -

PLANT CONDITIONS:
A RCS (Reactor Coolant System) cold leg break has occurred on Unit 1.
RCS pressure is 800 psig and decreasing slowly.
RCS level is beginning to drop below the top of the steam generator U- tubes.
Steam generator pressures are approximately 1000 psig and decreasing slowly.

Which of the following describes the heat removal mechanism currently occurring?

A. Break flow only.
B. Break flow and reflux cooling.
C. Break flow and natural circulation.
D. Break flow and radiative heat transfer.

Proposed Answer:

A. Break flow only.

Technical Reference(s): LMCDFRC - MITIGATING CORE DAMAGE -CORE COOLING page 16

Learning Objective: E598 - Describe the following concepts or conditions as they apply to a LOCA: a. Mechanisms for removing decay heat from the core during a LOCA.

10 CFR Part 55 Content: 55.41 41.14
K/A: EPE 011 EK1.01 - Knowledge of the operational implications of the following concepts as they apply to the Large Break LOCA : Natural circulation and cooling, including reflux boiling

Licensee Challenge:

The licensee proposed making answer “D”, “Break flow and radiative heat transfer” vice “A”, “Break flow only”, since the stem of the question did not specifically state that the heat removal mechanism of the core was the focus of the question.

NRC Review:

A review of the licensee's challenge revealed that the stem of the question did not specifically state that the heat removal mechanism was for the core, therefore, depending on the interpretation of question, multiple answers (A, C, and D) could be correct, since multiple answers could be correct, the question was deleted from the exam.

Conclusion - The question was deleted from the exam.

2. Reactor Operator Exam Question 4 -

A locked rotor occurs on a running Unit 1 RCP.
Which of the following describes what you would observe from the time the locked rotor
occurs until the RCP trips and the RED light goes out and amps fall to zero?

A. Amp indication pegs high and after a time delay the breaker trips on overcurrent the green and blue lights are lit.
B. Almost immediately, before amp indication can peg high, the breaker trips on overcurrent - the green and blue lights are lit.
C. Amp indication pegs high and after a time delay the breaker trips on overcurrent the green light is lit, the blue light remains out.
D. Almost immediately, before amp indication can peg high, the breaker trips on overcurrent - the green light is lit, the blue light remains out.

Proposed Answer:

A. Amp indication pegs high and after a time delay the breaker trips on overcurrent - the green and blue lights are lit.

Licensee Challenge:

The licensee proposed deleting the question because the lecture stated that the rotor locked instantaneously and no value for the amperage indicated on the ammeter was given. The licensee concluded that this could lead the candidate to the wrong conclusion.

NRC Review:

A review of the licensee challenge was conducted by the examiners. Since the licensee's challenge was predicated on inadequate training and no examination question issue was discussed, the challenge was not accepted.

Conclusion - The question was not deleted from the exam and the correct answer is A.

3. Reactor Operator Question 47 -
With Unit 1 at 100% power, how does the 12 KV Bus D/E protection circuitry interface with the RCPs?

A. If 2 out of 3 relays on bus E sense < 54 Hz, a trip signal is sent to RCP 1-1 and 1-3 breakers.
B. If 2 out of 3 relays on either bus D or E sense < 54 Hz, a trip signal is sent to all 4 RCP breakers.
C. If 1 out of 2 relays on buses D and E sense < 70% voltage, a trip signal is sent to all 4 RCP breakers.
D. If 1 out 2 relays on bus D sense < 70% voltage, a trip signal is sent to RCP 1-2 and 1-4 breakers.

Proposed Answer:

A. If 2 out of 3 relays on bus E sense < 54 Hz, a trip signal is sent to RCP 1-1 and 1-3 breakers.

Technical Reference(s): J5 – 12 KV Electrical System

Learning Objective: 6249 Analyze the logic associated with 12 kV Protection Relay indication lights

Licensee Challenge:

The licensee proposed deleting the question because the stem does not specify relays are tripped. The student handout STG (Student Training Guide) J5, “12 KV (Kilovolt) Electrical System states that if 1 of 2 27 VD(E)R1 or 27 VD(E)R2 relays drop to 70%, an Undervoltage (UV) signal is developed which will result in a reactor trip if both D and E bus sense an UV condition. An UV signal from 27VD(E) T1 and 27VD(E)T2 trips the Circ Water pump and RCP’s on that bus. Therefore A, C, and D are correct.

NRC Review:

A review of the licensee’s challenge revealed that the licensee’s argument was valid. The examination question stem as developed resulted in some ambiguity as to which relays were tripped. The licensee’s challenge was accepted as submitted.

Conclusion - The question was deleted from the exam.

4. Reactor Operator Question 68 -

Which of the following is the proper method for independently verifying the position of a normally SEALED CLOSED manual valve?

A. Visually check the position of the valve stem to verify the valve position.

B. Remove the seal and attempt to move the valve in the open direction without using excessive force, then close and reseal.
C. Check the sealed component checklist binder to determine if the valve has been opened.
D. Remove the seal, attempt to move the valve in the closed direction without using excessive force then reseal.

Proposed Answer:

D. Remove the seal, attempt to move the valve in the closed direction without using excessive force then reseal.

Technical Reference(s): OP1.DC2 page 6 of 9
10 CFR Part 55 Content: 55.41 41.10

Comments: K/A: G2.1.29 - Knowledge of how to conduct and verify valve lineups.

Licensee Challenge:

The licensee proposed deleting this question based on OP1.DC20 Revision 13, “Sealed components”, Section 4, General Requirements, step 4.1.5 which states in part that, “Component positions shall be independently verified in accordance with OP1.DC2, “Verification of Operating Activities”. Using the verification techniques described in that procedure, component seals shall be installed following the independent verification of the valve position. According to OP1.DC20, the sequence for installing seals is after the independent verification. The licensee argued that if candidates performed independent verification of valve position while on shift, this may be the procedure that they were familiar with and therefore no answer would be completely correct.

NRC Review:

Licensee Procedure, OP1.DC2 Revision 13,”Sealed Components”, Section 4.5 states in part, “Sealed or locked valves shall be verified with the sealing or locking devices removed.” Therefore in order to perform verification of a sealed valve, the seal must first be removed. The question and answer are correct as given.

Conclusion - The question will not be deleted from the exam and “D” remains the correct answer.