



December 22, 2003

Tom Stetka  
Lead Examiner San Onofre, USNRC Region 4  
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Subject:

Enclosed please find the following documents from the Initial License Examinations administered at San Onofre the week of December 15, 2003. Per ES-501 of NUREG 1021, Revision 8:

- The original signed student answer sheets.
- The original signed examination cover sheets.
- The facility graded answer sheets.
  - Copy of the as administered graded answer sheets.
  - Copy of the graded answer sheets if comments accepted.
- The proctor comments with student questions and proctor answers.
- ES-403-1, "Written Examination Grading Quality Checklist".
- The facility generated comments on specific questions.

The original security agreement will be forwarded upon completion of the post examination signature section.

I will be out of the office from 12/23/03 until 1/5/04. Should you have any additional questions before 1/5/04, please call me at home, 760-633-3154. After 1/5/04, I can be reached at my office number of 949-368-8201.

Sincerely,

A handwritten signature in black ink that reads "Kurt Rauch".

Kurt Rauch  
Operations Training Manager  
San Onofre

RO ONLY  
QUESTION 61  
FACILITY  
COMMENT  
AND  
JUSTIFICATION

December 22, 2003

San Onofre Initial License Written Examination Comments:

***RO Question 61***

Given the following conditions:

- A small break Loss of Coolant Accident has occurred.
- High Pressure Safety Injection (HPSI) Pump P017 has tripped on over current.
- The crew aligned and started HPSI Pump P018.
- Two charging pumps are running.
- Pressurizer pressure is 1500 psia and steady.
- HPSI Pumps P018 and P019 were secured upon meeting the requirements of FS-7, HPSI Throttle/Stop Criteria.
- PZR level indicates 20% and DROPPING SLOWLY.

Which ONE (1) of the following describes the action required?

- A. Start HPSI Pump P018 and throttle open enough HPSI Injection valves to raise Pressurizer level to at least 28%.
- B. Start HPSI Pump P018 and P019 and the third Charging Pump and fully open all HPSI Injection valves.
- C. Start HPSI Pumps P018 and/or P019 and fully open enough HPSI Injection valves to raise Pressurizer level to at least 28%.
- D. Start HPSI Pumps P018 and/or P019 and throttle open HPSI Injection valves.

Answer: D

**San Onofre Comment:** Accept two correct answers B & D

Justification: Given the initial condition of Pressurizer Pressure steady at 1500psia, the required actions of Floating Step7, FS-7, of SO23-12-11, EOI Supporting Attachments, would require the operator to "Operate Charging and SI systems as necessary to maintain Throttle/Stop criteria – satisfied. Throttle Loop Injection Valves –as required. Answer B and D essentially state the same thing in that at 1500 psia, the requirement to throttle open as required would cause the operator to fully open the injection valves as level would not increase with pressure greater than the shut off head of the HPSI pumps.

Reference: SO23-12-11, EOI Supporting Attachments, page 20 of 260, Response Not Obtained for FS-7 b.

**RO & SRO**

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**QUESTION 73**

**FACILITY**

**COMMENT**

**AND**

**JUSTIFICATION**

December 22, 2003

San Onofre Initial License Written Examination Comments:

***RO and SRO Question 73***

Given the following conditions:

- A Station Blackout has occurred.
- The diesel generators have both failed to start.
- SO23-12-1 Standard post trip Actions steps 1 through 10 have been completed
- Diagnosis of Station Blackout has been verified
- Actions have been taken to notify the Shift Manager of the situation
- The Emergency plan has been initiated

In accordance with SO23-12-8, Station Blackout, which ONE (1) of the following describes the **FIRST** action taken by the crew?

- A. Initiate SO23-12-11, Attachment 8, Restoration of Offsite Power.
- B. Restore and maintain at least one (1) S/G level between 30% and 80% NR
- C. Bleed steam as necessary to maintain S/G pressure 1100 psia using ADV's
- D. Attempt to energize 1E 4KV bus A04 or A06 from the other unit.

Answer: A

**San Onofre Comment:** Accept two answers: A & D

**Justification:** The Station Blackout Emergency Operating Instruction, SO23-12-8, main body step 2.b, has the operator initiate the foldout page. The operator is then working down two parallel paths, with one path being to continue the main body steps and the second path is working down the foldout page. In main body path, at step 4.a, attachment 6 is initiated. (Answer D) Down the second path, the foldout page, the operators will, in step 3.a) verify 220Kv Switchyard is NOT energized and then directs the initiation of SO23-12-11, EOI Supporting Attachments, Attachment 8, Restoration of Offsite Power. (Answer A)

Both answers should be correct as there is no set expectation as to which step would be reached first by the operator and either attachment could be initiated first without impact to plant safety.

**References:** SO23-12-8, Station Blackout Emergency Operating Instruction  
SO23-12-11, EOI Supporting Attachments  
SO23-14-8, Station Blackout Design Bases and Deviation Justifications

RO & SRO  
QUESTION 82  
FACILITY  
COMMENT  
AND  
JUSTIFICATION

December 22, 2003

San Onofre Initial License Written Examination Comments:

***RO and SRO Question 82***

Given the following conditions:

- The plant is in Mode 1, 100% power
- It has been determined that the Trisodium Phosphate baskets in containment were inadvertently emptied during the last outage.

IF a LOCA were to occur, which ONE (1) of the following describes the consequences of this action?

**INCREASED:**

- A. containment pressure.
- B. formation of oxygen.
- C. containment iodine levels.
- D. formation of hydrogen.

Answer: C

**San Onofre Comment:** Accept two answers: C & D

Justification: The San Onofre Design Bases Document for Plant Level Items, DBD-SO23-TR-PL, section for Long Term Cooling Post Accident, page 105 of 209 states, "Long-term chemistry control of the recirculated sump solution is accomplished by trisodium phosphate (TSP) stored in containment. TSP buffers the solution to  $7.0 < \text{pH} < 8.0$ . This range enhances long-term retention of iodine (Answer C) while sufficiently high to avoid chloride stress corrosion of austenitic stainless steel, yet low enough to avoid excessive generation of hydrogen by the corrosion of non-ferrous Containment metals".(Answer D)

References: DBD-SO23-TR-PL, Design Bases: Plant Level Topical Report