ARKANSAS POWER & LIGHT COMPANY
Reeves E. Ritchie Nuclear Training Center
Arkansas Nuclear One
Rt. 3, Box 137G
Russellville, Arkansas 72801
April 22, 1988

ANO-88-04314

Mr. John Whittemore
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive
Suite 1000
Arlington, TX 76011

SUBJECT: Arkansas Nuclear One
Docket No. 50313
Comments on NRC SRO
Exam of April 18, 1988

Dear Mr. Whittemore:

I have attached the Training and Operations Departments' comments on the SRO examination for your review and consideration. If you have any questions, please contact me.

Sincerely,

E. A. Force
Superintendent,
Operations Training

EAF:EDW:sjc

Attachments

cc: ANO-DCC

Question 5.04: Answer does not consider effects of doppler during heatup. Credit should be awarded if trainees indicate doppler will add negative reactivity as temperature increases.

Question 5.10.a: Part a. Of this question assumes a fact that is not present in large, low enrichment commercial reactors. Credit should be given if candidates respond to the question by stating that Beta effective is always smaller than Beta in a large, low enrichment core.

Question 5.11: Answers addressing the question using a decreasing pump speed should also be given credit if proper NPSH response to the decreasing speed is addressed.

Question 6.01.a: Low level limit looks at a ΔP signal produced by an OTSG level transmitter. This ΔP we say corresponds to a water level. Thus, an explanation describing low level limits as maintaining a minimum water level should also be acceptable.

Question 6.01.b: High level limit as per this STM" ... prevents water level from increasing high enough to flood the nozzles." An answer of "limit OTSG level" should also be acceptable along with OTSG LOAD.

Question 6.05.c: There are two smoke detectors. There is a supply duct and an exhaust duct. The question did not specify which smoke detector initiated the ventilation system action. Since the correct answer depends upon which smoke detector sensed the smoke, and the actions are different for each detector, either set of answers below should be acceptable.

	Supply		Exhaust (Return)
1.	Prevents from auto starting	1.	Can be running or stopped.
2.	Can be open or closed*	2.	Open
3.	Can be open or closed*	3.	Closed
4.	Can be open or closed*	4.	Open
5.	Stop	5.	Can be running or stopped.*
6.	Closed	6.	Can be open or closed.*

*Does not affect these components.

The key answer assumes an exhaust smoke detector sensing smoke with a normal CR ventilation lineup and VSF 8A running.

Question 6.06.a: This questions states ... "loss of instument air to the component." and then lists the ADV. An answer that assumes the ADV actually lost air should also be accepted if answered and explained that way.

ADV control valve will go shut, RCS temperature and pressure will increase.

Question 6.12: Instrument rack and panel numbers are not generally used to describe instrument location. Answers should be given full credit if locations are expressed as follows.
C116: Dasey or Daisy panel or Unit 1 Computer Room.
R33: Orange door/E1 heater deck.
R08: M/U Tank Room.

Question 6.12.b: There are no uncompensated pressurize level (See DCP training summary attached) instruments on any of the remote shut down panels. Therefore, an answer of none should be accepted for Part B. Also the correct answer to part C (compensated pressurizer level) should be all three locations:

Daisey panel
Orange Door/E1 heater deck
U tank room

Question 6.13.b: Credit should be given for a "No" response if answer indicates reactor will not remain at power (Rx Trip) if 2 channels are placed in S/D bypass.

Question 7.01.b: Should also give full credit for responses of 2.5 REM; (ANO Administrative Quarterly Limit) since neither the procedure nor the question specify which quarterly limit applies.

Question 7.01.c: Using guidelines in OP1000.31 (Radiation Protection Manual), OP1642.006 (Exposure Limits and Monitoring Techniques), and OP1903.33 (Protective Action Guidelines for Rescue/Repair and Damage Control Teams), the person responsible for emergency direction and control would be authorized to make approvals if an EAL is declared. This would include the E.C. (OP1000.31), the E.O.F.D (OP1642.006) and the Shift Supervisor (OP1903.33). An emergency job or task where an EAL is not declared would require approval of the Vice President for Nuclear Operations. Therefore, since no number of persons was identified, we feel full credit should be awarded if any one of those 4 job titles is identified as being the person to authorize the exposure.

Question 7.02.a: Credit should be given for flow paths that generally follow: BAAT is aligned to the suction of P-40A & P-66 (Spent fuel cooling pump and recirc pump). The purification loop is aligned to the decay heat system. Boric acid would be pumped to the spent fuel pump suction by the boric acid pumps. The spent fuel recirculating pump then pumps the boric acid to the decay heat pump suction via the purification loop.

Question 7.0.2c: OP1502.04 Section 4.2 immediate actions list 6 things which are to be accomplished. The question actions account for 3 of the 6 immediate actions. The answer is based on only 1 of the remaining 3 immediate actions. (with 2 parts) Credit should also be given if the remaining 2 immediate actions are listed.

"4.2.3 Control room personnel will place the plan in a safe condition as the emergency conditions warrant"

"4.2.5 Shift operating personnel not involved with controlling the emergency will report to the control room."

Question 7.08.a: Seal injection would be reestablished first. The term "seal cooling" is loosely applied to ICW cooling flow or seal injection. Seal injection is also a method of seal cooling. OP1203.31, immediate action step 2.2 "Attempt to reestablish seal cooling" (Injection and/or ICW) "as follows". It then goes on to describe how seal cooling is reestablished, and describes steps to take to reestablish seal injection first, then ICW cooling flow.

Question 7.11.b: Although the term "buffer amplifier" is used in the procedure, it should not be required as part of a full correct answer. "NNI x drives the indicators", should be accepted without the buffer amplifier terms.

Question 8.02: The only limit exceeded is 1.0 gpm unknown leakage. there is no "leakage limit" for RCS activity. RCS activity limits of 3.5 micro curies per gram dose equivalent of I131 is based on a dilution ratio that would cause secondary activity to increase to .17 µci/gm under certain accident conditions. If RCS activity is as low as .2 µci/gram, it is unlikely secondary system contamination would ever reach .17 µci/gram I131 dose equivalent.

Question 8.08.b: Memorizing the order in which a list of personnel appears in an administrative procedure is beyond the reasonable scope of required SRO knowledge. The procedure is used during the process of doing temporary modifications therefore memorization of the preferred order is not required. We request part b. be deleted from the test.

SIMULATION FACILITY FIDELITY REPORT

Facility Licensee: Arkansas Power & Light Company

Facility Licensee Docket No.: 50-313

Facility License No.: DPR-51

Operating Tests Administered At: Arkansas Nuclear One, Unit 1

Operating Tests Given On: April 19-22, 1988

During the conduct of the simulator portion of the operating tests identified above, the following apparent performance and/or human factors discrepancies were observed:

1. During the initial scenario, candidates became side tracked by a continuously decreasing Main Condenser Hotwell level. All other related conditions appeared normal and the problem was not a part of the planned scenario. In order to continue the preplanned scenario, it became necessary to override Hotwell Indication and place it at the desired normal level. Continued effort to locate the problem revealed that the simulator had been initialized with a manual condensate dump valve open and this condition was, in fact, undetectable from the control room. It was not determined why the machine initialized as it did.

2. The examiner had requested a 15 percent load rejection with the unit at high power. The instructor agreed that the unit should handle this relatively small change and remain critical. Apparently the simulator operator was not familiar with the correct method of inserting load rejection and the unit was run back to 15 percent, resulting in a reactor trip. A second attempt resulted in the correct amount of load shed, however, a reactor trip still resulted due to high RCS pressure. All NRC and facility personnel agreed that the unit should handle this transient without causing a reactor trip.

3. It is not possible to directly insert an Area or Process Radiation Monitor malfunction or failure. Failing some monitors may require the simulator operator to perform as many as 15 different override functions.

4. The simulator malfunction list provides a Turbine Automatic Trip Failure. However, trip failure was not possible without using extensive I/O override features. This required extra attention by the simulator operator and impacted event realism.

5. After stopping and restarting "B" Reactor Coolant Pump, stator temperature continued to increase above normal for no apparent reason. This continued to the point where candidates had to be told that the condition was due to a simulator malfunction in order to continue the scenario.

6. The inadvertent boron dilution malfunction was ineffective and not noticed by candidates. In order to obtain indication to alert operators it was necessary to continually override "Make Up Tank" boron concentration to 0 PPM.

7. During three different events where Reactor or Secondary Coolant was being lost to the Reactor Building atmosphere, ES actuation due to high Reactor Building pressure occurred nearly simultaneously with event initiation. The building temperature and pressure buildup is modeled more severely than that which would actually occur and depicts conditions that are unrealistic during accident transients.