

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-456/OL-90-02

Docket Nos. 50-456; 50-457

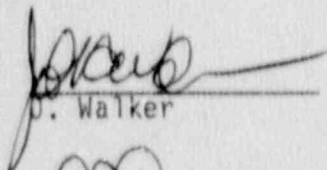
Licenses No. NPF-72; NPF-77

Licensee: Commonwealth Edison Company
Opus West III
1400 Opus Place
Downers Grove, IL 60515

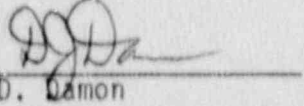
Facility Name: Braidwood Nuclear Power Station

Examination Administered At: Production Training Center; Braidwood Nuclear
Power Station

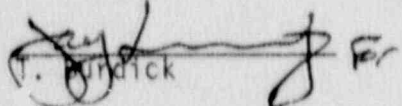
Examination Conducted: October 22-25, 1990

RIII Examiner: 
D. Walker

11-27-90
Date

Chief Examiner: 
D. Damon

11/27/90
Date

Approved By: 
J. Purdick

11/27/90
Date

Examination Summary

Replacement examinations administered during the week of October 22, 1990, to seven Senior Reactor Operator candidates and three Reactor Operator candidates. Requalification retake examinations administered to two Senior Reactor Operators and two Reactor Operators (Report No. 50-456/OL-90-02). All candidates passed the examinations.

The crew taking the requalification examination simulator scenario was not evaluated as a crew; however significant weaknesses in their performance as a crew were noted.

REPORT DETAILS

1. Examiners

N. Jensen
M. Parrish
J. Walker
D. Damon*

*Chief Examiner

2. Exit Meeting

On October 26, 1990, members of the examination team met with members of the facility staff to discuss the examinations. The following persons attended the meeting:

K. L. Kofron, Station Manager, CECo
G. E. Groth, Production Superintendent, CECo
R. Legner, Services Director, CECo
B. McCue, Operating Engineer, CECo
K. Bartes, Onsite Nuclear Safety Administrator, CECo
D. Miller, Regulatory Assurance Supervisor, CECo
G. Vanderheyden, Training Supervisor, CECo
D. Huston, Training Instructor, CECo
K. Gerling, PTC Simulator Supervisor, CECo
T. M. Chasensky, PTC Senior Instructor, CECo
S. G. Dupont, Acting Senior Resident Inspector, NRC
D. J. Damon, Chief Examiner, NRC
J. Walker, Examiner, NRC
R. M. Bailey, Examiner, NRC

The following items were discussed:

Strengths

- a. The candidates made good use of the piping and instrument diagrams and electrical prints.
- b. The candidates showed familiarity with and good use of annunciator response procedures.
- c. The candidates were strong in the use and application of Technical Specification requirements.
- d. Bistable tripping during simulator instrument failures was a very controlled evolution, supervised by control room personnel.
- e. SRO candidates kept cognizant management personnel aware of plant status during simulator scenarios.

- f. Simulator instructors were very cooperative during the exams.
- g. On-shift control room personnel were very cooperative in supporting the examinations.

Weaknesses

- a. Candidates showed difficulty in locating specific items in the station administrative procedures. This was possibly due to the lack of a comprehensive index.
- b. Candidates showed difficulty performing shutdown margin calculations, for a variety of reasons.
- c. SRO candidates had difficulty explaining the use of communications networks after an emergency plan classification had been made.
- d. Knowledge of fuel handling procedures was considered poor.
- e. Candidates were generally unfamiliar with component locations outside of the control room. Some examples include the manual emergency boration valve, and various pieces of equipment in the diesel AFW pump rooms. This is significant in light of findings detailed in the June 1990 Zion Diagnostic Evaluation Team report.
- f. The attention to detail shown by candidates during previous examinations in regard to use of Emergency Operating Procedures was not evident during this examination.
- g. Personnel were observed climbing on one-inch lines and lagged piping in the AFW pump rooms. This is significant in light of a recent AIT finding where operators were required to climb on a cable tray in order to operate an RHR valve.

Procedures

- a. 2BWOA PRI-2 (Emergency Boration) states that emergency boration valve 8439 is painted red. The actual valve does not appear to be red.
- b. Copies of 2BwOS 1.1.1.1.e-2 (Shutdown Margin Surveillance During Operation) in the control room did not have a Temporary Procedure Change entered. The candidate immediately corrected this discrepancy.
- c. BWOP AF-5 (Motor Driven Auxiliary Feed Pump Startup on Recirc) AFW pump motor start criteria appears to be confusing. Different candidates gave different interpretations of the criteria.
- d. BWOA PRI-6 (Component Cooling Malfunction) and BWOA PRI-12 (Uncontrolled Dilution) do not address a Seal Water Heat Exchanger tube leak.

- e. BwOA Elec-4 (Loss of Offsite Power for Modes 3 or 4) contains a note that states that if a safety injection occurs, BwEP-0 (Reactor Trip or Safety Injection) must be implemented. This note does not address the case where, if a reactor trip occurs in mode 3, BwEP-0 must also be implemented. Additionally it also does not address the case where, if a reactor trip or safety injection occurs in mode 4, BwEP-0 does not apply.
- f. BwOP CV-15 (Excess Letdown Operations) had a wrong location for control of valve CC9437A. The candidate immediately generated a Temporary Procedure Change to correct the procedure.
- g. BwOS 1.1.1.1.e-1 (Shutdown Margin Daily Verification During Shutdown) contains a methodology to determine time in core life. BwOS 1.1.1.1.e-2 (Shutdown Margin Surveillance During Operation) does not. Both procedures require that this determination be made.

Miscellaneous Items

- a. BwAP 1100-21 (Gaseous Suppression System Areas - Special Precautions) states that entry into the cable spreading rooms greater than 5 feet from the door required the use of a self-contained breathing apparatus. A sign on the door to one of the diesel AFW pump rooms also contains the same guidance. The sign on the AFW pump room door and the BwAP 1100-21 requirements are inconsistent.
- b. Candidates generally did not make examiners aware of the requirements of BwAP 1100-21.
- c. A control room copy of 2BwOA-Refuel-1 (Fuel Handling Emergency) was missing page one. The Shift Control Room Engineer was informed of the discrepancy. The discrepancy still existed the next day.

3. POST-EXAMINATION LICENSEE COMMENT & RESOLUTION

QUESTION No. 51-RO/No. 53-SRO (1.00)

Which one of the following conditions represents a setpoint which will DIRECTLY initiate a feedwater isolation?

- a. containment High-2 pressure
- b. High-High NR level in all steam generators
- c. low pressurizer pressure safety injection signal
- c. manual MFP trip

ANSWER:

c.

REFERENCE: System Description Ch. 25, "Condensate & Feedwater System," P. 25, and Obj. 11.

K/A: 059000k419 Knowledge of MFW system design feature(s) and/or interlock(s) which provide for automatic isolation of the MFW.

BRAIDWOOD CONTENTION:

Braidwood Station's position regarding this question was specifically addressed during the pre-examination review. "High-high NR level in all steam generators" should also be accepted as a correct answer. Either circumstance (b. or c.) will DIRECTLY initiate a feedwater isolation. As shown on the attached logic diagram, both of these signals are processed through the same logic OR gate.

Also, the K/A for this question requires a knowledge of MFW isolation design features and interlocks, not a knowledge of the differences between a setpoint and a signal. None of the answers are actual setpoints.

Therefore, it is our position that either b or c should be accepted as correct.

NRC RESOLUTION

The stem of the question does not identify the choices as "setpoints," but rather identified them as conditions representative of setpoints. This concept was also explained to the examinees by the proctor during the examination, using a tank liquid level analogy. (i.e., If an action occurs at a setpoint of 64% increasing, then the same action should occur if the level is greater than 64%, but other, higher values are not setpoints. The setpoint is still 64%.)

POST-EXAMINATION LICENSEE COMMENT & NRC RESOLUTION (Cont'd)

Distractor b was placed in this question to determine if candidates know that High-High NR Steam Generator Level MFW Isolation occurs on one-out-of-four coincidence, rather than four-out-of-four coincidence.

The licensee alludes to possible examinee confusion due to terminology used in wording the question, and states, "None of the answers are actual setpoints." It could thus be argued that none of the choices are correct. So, in spite of the further clarifications provided by the proctor during examination administration, this question (No. 51 RO/No.53 SRO) is deleted from the examination.

SIMULATION FACILITY REPORT

Facility Licensee: Commonwealth Edison (Brzidwood)

Facility Licensee Docket No. 50-456

Operating Tests Administered On: Week of October 22, 1990

During the conduct of the simulator portion of the operating tests, the following items were observed:

| <u>ITEM</u> | <u>DESCRIPTION</u> |
|-------------|--|
| 1. | Communications facilities in the simulator are very different from those in the control room. |
| 2. | SER computer terminal is located on the RO desk in the control room, and is not modeled in the simulator. |
| 3. | SER computer printout is not modeled in the simulator. Effects performance of BWOA 1RCP-1, "Reactor Coolant Pump Seal Failure. |
| 4. | RM-11 returns all radiation monitors to green after simulator freeze. |
| 5. | With a loss of DC bus 114 and MSIV's shut, 1B MFP continues to operate. |
| 6. | Annunciator 15-E-4 is present at the simulator, and not in the control room. |
| 7. | With VC-112 B, C, D & E open, the simulator does not model VCT level decrease per the system description. |
| 8. | Plant process computer does not appear to be completely modeled. |
| 9. | EHC system added 4000 to the display value. |
| 10. | Accident radiation monitors are out of service in the facility. In the simulator, these rad monitors are in service. |