

U.S. NUCLEAR REGULATORY COMMISSION
REGION III

Reports No. 50-237/87032(DRS); 50-249/87031(DRS)

Docket Nos. 50-237; 50-249

Licenses No. DPR-19; DPR-25

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, IL 60690

Facility Name: Dresden Nuclear Power Station, Units 2 and 3

Inspection At: Morris, Illinois

Inspection Conducted: September 29 through October 1, 1987

Inspectors: J. Hopkins *[Signature]*

10/20/87
Date

R. Hasse *[Signature]*

10/20/87
Date

Approved By: Monte P. Phillips, Chief *[Signature]*
Operational Programs Section *[Signature]*

10/20/87
Date

Inspection Summary

Inspection on September 29 through October 1, 1987 (Reports No. 50-237/87032(DRS); 50-249/87031(DRS))

Areas Inspected: Special announced safety inspection to determine if the conditions of the Confirmatory Action Letter (CAL) CAL-RIII-87-001, Amendment 1, issued March 17, 1987, had been properly implemented.

Results: No violations or deviations were identified.

DETAILS

1. Persons Contacted

Commonwealth Edison Company (CECo)

- *E. Eenigenburg, Station Manager
- *C. Schroeder, Services Superintendent
- *R. Jeisy, Station Quality Assurance Superintendent
- *J. Williams, Station Regulatory Assurance
 - S. Stiles, Training Manager
 - S. Mattson, Lead - Operator Training Program
- *R. Flessner, Administrative Engineer - G.O.
- J. Kotoski, Assistant Operations Superintendent
- E. Armstrong, Station Regulatory Assurance Supervisor

*Denotes those attending exit interview on October 1, 1987.

2. Licensed Operator Requalification

a. Purpose

The purpose of the inspection was to determine if the licensee had implemented the commitments documented in the Confirmatory Action Letter (CAL) CAL-RIII-87-001, Amendment 1, dated March 17, 1987. The CAL was issued as a result of the 50% failure rate on the NRC requalification examination administered during the week of January 26, 1987. The CAL detailed additional control room staffing requirements, removed those operators who failed the NRC requalification exam from licensed duties, gave a brief outline of the short-term upgrade program, and required a long term improvement plan to be presented to the staff.

b. Inspection Results

- (1) Part One of the CAL required that while in cold shutdown the Dresden Units 2 and 3 control room be staffed with a licensed Senior Reactor Operator (SRO) as an advisor who had passed either the NRC administered requalification exam or had passed a NRC license examination since January 1986. The inspectors conducted interviews with the licensee and reviewed training records to determine how the licensee selected candidates for the SRO advisor position. In order to meet these restrictions, the licensee conducted an audit of the licensed operators' records to select a pool of candidates. Some of the candidates for the SRO advisors were not routinely assigned to the duties of a licensed operator and, in accordance with 10 CFR 55.31.e (prior to May 26, 1987), they had to be certified by an authorized representative of the licensee to perform those duties. The licensee evaluated the SRO advisor candidates in accordance with Section VI of CECo Topical Report,

"Requalification Program for Licensed Operators, Senior Operators, and Senior Operators (Limited)," July 19, 1984. This evaluation was conducted by the Operation and Training Review Board which considered the candidates day-to-day involvement with license activities and recommended additional training, where required, prior to resumption of licensed duties. The licensee identified ten SROs which met all of the requirements and assigned them as shift advisers in cold shutdown.

On May 26, 1987, 10 CFR 55 was revised and changed the requirements necessary for an operator to resume licensed duties. 10 CFR 55.53 outlines the requirements needed to maintain an active license and the amount of shift time "under instruction" necessary to regain an active license. After May 26, 1987, the licensee had four SRO advisers still on-shift who did not meet the new 10 CFR 55.53 criteria for an active license. The licensee management felt that since these SRO advisers were considered "active" under the pre-May 26, 1987, Part 55, and had been performing the duties of SRO advisers since February 27, 1987, and were not going to be used beyond the role of an advisor in cold shutdown, these SROs would continue in their role as shift advisers until "active" SROs had passed the accelerated requalification program and were returned to licensed duties. The last SRO advisor normally not assigned to licensed duties was on-shift June 20, 1987.

The inspectors judged these actions to be in compliance with the CAL with no further action required.

- (2) Part Two of the CAL required that when in other than cold shutdown the Dresden Units 2 and 3 control room would be staffed by a licensed SRO and as a minimum, a licensed Reactor Operator (RO) at the controls of each unit who met the criteria of Part One of the CAL. The inspectors conducted interviews with the licensee and reviewed training records to determine how the licensee selected candidates for the SRO advisor position and the ROs at the controls of each unit. The licensee used the process described above to select the licensed ROs. As soon as licensed ROs who had completed the NRC approved accelerated upgrade training program were available, the licensee removed any operators from shift who were not normally assigned to licensed duties.

The inspectors judged these actions to be in compliance with the CAL with no further action required.

- (3) Part Three of the CAL required the licensee to remove from licensed duties those ROs and SROs who failed the NRC administered requalification examination until such time that those individuals successfully completed an NRC approved accelerated upgrade training program or passed an NRC administered examination. The inspectors reviewed training

records to determine if the licensed operators were taken off-shift and successfully completed the upgrade program. Six licensed operators (two ROs and four SROs) failed the NRC administered requalification exam on January 26, 1987. Those six licensed operators were immediately removed from licensed duties and placed in the NRC approved "Short-Term Operator Training Upgrade Program." Four of the licensed operators had successfully completed the upgrade training program by the end of April 1987, one completed the program in June 1987, and one surrendered his NRC license.

The inspectors judged these actions to be in compliance with the CAL with no further action required.

- (4) Part Four of the CAL required the licensee to implement an accelerated requalification program for all licensed operators. This short-term program was required to be completed no later than September 1987. The "Short-Term Operator Training Upgrade Program," outlined in a March 11, 1987 letter, was approved by the NRC in the CAL, Amendment I, dated March 17, 1987. The inspectors reviewed training records, conducted interviews, and reviewed lesson plans and simulator scenarios to determine if the licensee had implemented the "Short-Term Operator Training Upgrade Program." The program consisted of eight hours of classroom training and 18 hours of simulator training with the program's major emphasis in the following areas:

- Crew communication
- Team building
- Compliance and use of procedures
- Proper reference to Technical Specifications (T.S.)
- Safety systems features
- Understanding and use of instrument response
- SRO panel manipulation practice

The licensee used a series of two-hour classroom lectures to address some of the areas of major emphasis in the upgrade program. Below is a list of the topics covered in the lecture series:

Day One

Communication and Team Building

Operating Order No. 35-87 (Use of Procedures)

Lessons learned from NRC exam

Recent Operational errors at the Dresden Station
(U-2 inadvertent deinerting and U-3 reactor boiling event)

Day Two

Simulator Session Critique

Emergency Operating Procedures (EOP) Review
(using flowcharts)

DEOP-100 block
DEOP-200 block

Implementation of existing Operating Orders

Day Three

Simulator Session Critique

EOP Review (using flowcharts)

DEOP-300 block
DEOP-400 block

Day Four

Debriefing by the evaluators with the trainees.

The simulator training consisted of six hour sessions for three days followed by a four to six hour evaluation on the fourth day. The control room crew in the simulator consisted of a shift supervisor, a reactor operator, and a balance of plant operator who all rotated positions after each scenario. Each simulator session typically consisted of three different scenarios. Below is a list of the scenarios used during the upgrade program:

Day One

Plant Startup (with malfunctions)

Loss of Feedwater

Loss of both Recirculation Pumps and Feedwater Pumps
(with malfunctions)

Loss of Offsite Power/Plant Shutdown (with malfunctions)
Plant Casualty Response familiarization (observation only)

Day Two

Mispositioned Rod, Small Break LOCA inside Drywell
Main Steamline Break (with malfunctions)
Large LOCA (with malfunctions)
Loss of Normal and Emergency Feedwater (with malfunctions)
Turbine Trip/ATWS

Day Three

Security Break (with malfunctions)
Loss of both Control Rod Drive (CRD) Pumps/ATWS
(with malfunctions)
Spray Cooling (with malfunctions)
MSIV Closure/ATWS (with malfunctions)
Main Steamline Break inside Drywell (with malfunctions)

Day Four

The fourth day of simulator training was a four to six hour evaluation of the licensed operators at each of the three control room stations. The evaluation was performed by independent General Electric (G.E.) instructors with concurrent evaluation by a CECO representative. The licensed operators were evaluated in eight categories:

- Control Board Awareness
- Event Diagnosis
- Immediate Actions
- Subsequent Actions
- Console Manipulations
- Use of Procedures/Reference Data/T.S.
- Communications
- Supervisory Ability

Each licensed operator evaluation was reviewed by the Dresden Station management and categorized in one of three ways:

(i) Released to full licensed duties.

- (ii) Continuation of licensed duties with an established time frame for completion of recommended training.
- (iii) Removal from licensed duties until all training recommendations are complete.

The licensee has 84 licensed operators (ROs and SROs). Three of the SROs are Fuel Handling Foremen with limited license and were exempt from the upgrade program. All but one SRO successfully completed the upgrade program by September 27, 1987. The remaining SRO is still removed from all licensed duties.

The inspectors judged these actions to be in compliance with the CAL with no further action required.

- (5) Part Five of the CAL required the licensee to present a long term requalification program improvement plan to the staff during the week of March 23, 1987. The inspectors conducted interviews, reviewed training records, and reviewed the 1988 training schedule to determine the status of the long term improvement program. The eight point program to enhance the requalification program is outlined in the following paragraphs:

- (a) Starting in 1988, simulator training would be increased from four days per year to two sessions of four days each. The first session would consist of startups, shutdowns, casualties, and the control manipulations required by 10 CFR 55.59. The second session would consist of EOP usage, communications, compliance with procedures, SRO panel manipulations, and a one-day evaluation by G.E. instructors and a CECO representative. The simulator evaluation would be reviewed by the licensee's management and each operator would be classified in one of three ways:

- (i) Released to full licensed duties.
- (ii) Continuation of licensed duties with an established time frame for completion of recommended training.
- (iii) Removal from licensed duties until all training recommendations are complete.

Since the original presentation of the long term improvement program, the licensee has increased the simulator training to two sessions of five days each.

- (b) Establish one training week in the Spring and one training week in the Fall as mandatory attendance training for all licensed operators. The topics covered will include major systems, procedures, and T.S. Daily quizzes will be averaged

over the week and must total at least 80%. Less than 80% will require some remedial action.

The licensee conducted the first mandatory training session from August 10 to September 18, 1987. The following topics were covered:

- Dresden EOPs (DEOPs)
- Core Spray
- Automatic Depressurization System (ADS)
- High Pressure Coolant Injection (HPCI)
- Low Pressure Coolant Injection (LPCI)
- Reactor Vessel Construction
- Physics/Thermohydraulics Review
- Recirculation System
- Dresden Operating Abnormal (DOA) Procedures
- Control Rod Drive (CRD) Hydraulics
- Feedwater Level Control (FWLC)
- Isolation Condenser
- Security Systems
- General Site Emergency Plan (GSEP)

The licensee has committed to incorporate this mandatory attendance training into the "Licensed Operator Requalification Program," DPP-5. The revision to DPP-5 is considered an Open Item (237/87032-01; 249/87031-01).

- (c) Direct the simulator instructors to demand strict adherence to the Operating Order on procedure usage during the simulator training sessions.

The licensee has reemphasized their commitment to Dresden Operating Order No. 35-87 (use of procedures) in a letter to the Training Department dated June 4, 1987.

- (d) Supply the simulator with site-specific binders for Dresden Procedures to make the simulator more closely replicate Dresden's control room.

The licensee has placed color coded Dresden specific binders in the simulator control room to contain the procedures used by the operators in the plant's control room.

- (e) Build annunciator procedure holders for the lower vertical kick panels in the simulator.

The licensee has installed the annunciator procedure holders in the simulator control room to duplicate the plant's control room.

- (f) Develop a complete Procedure vs. System Index and a new T.S. Index as operator aids.

The two indices were approved by the licensee on May 28, 1987 and placed in both the plant and simulator control rooms as operator aids.

- (g) Increase the number of questions per section on Dresden's annual written requalification exam from approximately 15 to 20.

The written requalification exams administered after April 10, 1987 have averaged 20 questions per section.

- (h) Provide for an annual third party sample evaluation of Dresden's exam-bank generated tests and Dresden's grading of the exams.

On September 24, 1987, the licensee provided six requalification exams and answer keys to the G.E. Certification Group for a third party evaluation. As of October 1, 1987, the results of the evaluation were not yet available.

The inspectors determined the above actions satisfied the licensee's commitments identified in the CAL with no further action required except the Open Item discussed in Paragraph 2.b(5)(b).

3. Open Items

Open Items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. Open Items disclosed during the inspection are discussed in Paragraph 2.b(5)(b).

4. Exit Interview

The inspectors held an exit interview with licensee representatives (denoted in Paragraph 1) and summarized the purpose, scope, and findings of the inspection. The licensee stated that the likely informational content of the report would contain no proprietary information.