

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-010/77-35; 50-237/77-32; 50-249/77-30

Docket No. 50-10, 50-237, 50-249 License No. DPR-2; DPR-19; DPR-25

Licensee: Commonwealth Edison Company
P.O. Box 767
Chicago, IL 60690

Facility Name: Dresden Nuclear Power Station, Units 1, 2 and 3

Inspection at: Dresden Site, Morris, IL

Inspection Conducted: November 10, 11, 15-18, and 22-23, 1977

Inspector: *W.D. Shafer*
W. D. Shafer

12-5-77

Approved by: *R.C. Knop*
R. C. Knop, Chief
Reactor Projects Section 1

12-6-77

Inspection Summary

Inspection on November 10, 11, 15-18, and 22-23, 1977 (Report No. 50-010/77-35; 50-237/77-32; 50-249/77-30)

Areas Inspected: Routine, unannounced inspection of Units 1, 2, and 3 procurement program, Units 2 and 3 procedures, Unit 2 special reports, Units 1, 2, and 3 control of bulletins and circulars, and an augmented review of plant operations including a plant tour and deviation report review. The inspector also attended a meeting, at the site, relating to offsite CECO personnel interface with safety related work. The inspection involved 64 inspector-hours onsite by one NRC inspector.

Results: Of the five areas inspected, no items of noncompliance or deviations were found in two areas; five apparent items of noncompliance were found in three areas (infraction - failure to comply with QA program requirements - Paragraph 10; infraction - failure to follow procedures - Paragraph 10; infraction - inadequate procedures - Paragraph 10; infraction - failure to follow procedures - Paragraph 2; deficiency - inadequate control of procedures - Paragraph 5).

DETAILS

1. Persons Contacted

a. Exit Conducted on November 18, 1977

- *A. Roberts, Assistant Superintendent
- *C. Young, Commonwealth Edison Corporate Office
- *D. Farrar, Tech Staff
- *G. Reardanz, Quality Assurance Coordinator
- *J. Plese, Storekeeper
- *R. Kryouac, Quality Control Engineer

The inspector also talked with and interviewed several other licensee employees.

*Denotes those attending the exit interview.

b. Exit Conducted on November 23, 1977

- *B. Stephenson, Station Superintendent
- *A. Roberts, Assistant Superintendent
- *D. Farrar, Tech Staff
- *J. Eenigenburg, Maintenance Engineer
- *G. Reardanz, Quality Assurance Coordinator
- *R. Kyrourac, Quality Control Engineer

The inspector also talked with and interviewed several other licensee employees.

*Denotes those attending the exit interview.

2. Review of Licensee Special Reports to RIII Office

The inspector reviewed the following two special reports sent to the Regional Office, RIII by the licensee. No concerns were identified.

Letter dated June 9, 1977, from B. B. Stephenson, Station Superintendent, to Mr. James G. Keppler. Report entitled "Evaluation of Main Steam Line Process Radiation Monitoring System."

Letter dated September 23, 1977, from B. B. Stephenson to Mr. James G. Keppler. Report entitled "Damage to New Fuel Element."

In a letter dated November 10, 1977, from B. B. Stephenson to Mr. James G. Keppler, the licensee described the recent overpressurization of the 2A recirculation pump piping and pump bowl which occurred on Unit 2 on November 2, 1977. The inspector reviewed this report and determined that the information available appears adequate.

With respect to this report, the inspector witnessed a special test (SOP 245), conducted to determine if the recirculation pump bowl was pressurized to the same pressure which was applied to the No. 1 seal. The inspector noted that the test was conducted in accordance with approved procedures, equipment used was properly calibrated and personnel conducting the test were properly qualified. The test indicated that on November 2, 1977, during the overpressurization of the No. 1 seal, the recirculation pump bowl and associated piping reached the same pressure as the No. 1 seal. This test was reviewed with the licensee at an exit interview.

Regarding the November 2, 1977, Unit 2 recirculation pump overpressurization, the inspector questioned the possibility of the overpressurization exceeded a safety limit. This question was forwarded to Headquarters for final interpretation. A resolution of this concern was given by NRR in a telephone conversation on November 9, 1977. The overpressurization of the 2A recirculation pump bowl was discussed with NRR, and NRR determined that no safety limits had been exceeded during the event.

To specifically determine the cause of the November 2, 1977, recirculation pump pressurization, the inspector reviewed the equipment outage checklist, relating to the work performed on the recirculation pump in question. The licensee's procedure DAP 3-5, step 2.e for clearing outages, requires that valves be returned to the "before outage" position, will be explained, i.e., still OOS, Test, etc. The inspector determined that the outage checklist was improperly filled out in that "before outage" valve positions were not identified and the "after outage" position was left blank. In addition, it could not be determined if the subject valves had hold tags placed on them.

In a telephone conversation on November 29, 1977, the inspector informed the licensee that the cause of the pressurization appears to be the result of failure to adhere to prescribed procedures in that the system lineup was unknown to licensee personnel. This is an item of noncompliance.

3. Review of IE Bulletins and Circulars

A review of bulletins and circulars was conducted to verify that, licensee management forwarded copies of the response to the bulletin to appropriate onsite management representatives, information discussed in the licensee's reply was accurate, corrective action taken was affected as was described in the reply, and the licensee's reply was prompt and within the time period described in the bulletin. IE circulars were reviewed to determine that the circular was received by licensee management, a review for applicability was performed, and for those circulars applying to the facility, further action was taken when appropriate.

IE Bulletins

IE Bulletin No. 77-01, Pneumatic Time Delay Setpoint Drift
IE Bulletin No. 77-02, Potential Failure Mechanism in Certain
W AR Relays with Latch Attachments

IE Circulars

IE Circular No. 77-01, Malfunction of Limit Torque Valve Operators
IE Circular No. 77-02, Potential Heavy Spring Flooding
IE Circular No. 77-03, Fire Inside a Motor Control Center
IE Circular No. 77-04, Inadequate Lock Assemblies
IE Circular No. 77-05, Liquid Entrapment in Valve Bonnets
IE Circular No. 77-06, Effects on Hydraulic Fluid on Electrical
Cables
IE Circular No. 77-07, Short Period During Reactor Startup
IE Circular No. 77-09, Improper Fuse Coordination in EWR Standby
Liquid Control System Control Circuits
IE Circular No. 77-10, Vacuum Conditions Resulting in Damage
to Liquid Process Tanks
IE Circular No. 77-11, Leakage of Containment Isolation Valves
with Resilient Seats
IE Circular No. 77-12, Dropped Fuel Assemblies at EWR Facilities
IE Circular No. 77-13, Reactor Safety Signals Negated During Testing

Regarding the review process for IE circulars, the licensee upper management reviews the circular, and if applicable assigns the circular to the action item system for specific engineering review. Action Item followup at the plant is mandatory by the licensee's administrative control program.

4. Review of Licensee Safety Related Procurement (Units 1, 2, and 3)

The following procurement packages were reviewed to verify that each procurement received proper approval, quality control inspections, and proper record retention.

P.O. No. 217732, Ion Chamber Detector
P.O. No. 501111PD3, Relief Valve
P.O. No. 194756, Spot Check Developer
P.O. No. 181293, CRD Rebuild Kit
P.O. No. 390540, Scram Valve Diaphragm

No items of noncompliance or deviations were identified during this inspection, however, in reviewing the quality assurance department audit dated May 31, 1977, the inspector noted that 7 areas of concern were identified and corrected by the licensee.

In a previous inspection (IE Report Nos. 237/77-18; 249/77-18), the inspector determined that proper measures have not been established to control the handling, storage, and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration. The licensee's response to this noncompliance identified a program to correct this concern, and committed to having the procurement fully implemented and corrected by March 30, 1978. A review of this program will be conducted at a future inspection.

5. Review of Units 2 and 3 Procedures

The inspector reviewed the licensee's program for control of procedures and determined that proper reviews and approval were accomplished in accordance with the Technical Specifications. The inspector noted that Technical Specification revisions were incorporated and 10 CFR 50.59 requirements were complied with. The inspector determined that the technical content of the licensee's procedures appeared adequate and overall procedure content was consistent with the Technical Specification requirements.

During a review of the Unit 2 and 3 procedures in the control room, the inspector determined that procedures No. DOP 4400-4, 5, 6, 7, and 8 were missing from the control room master file. It was also noted that surveillance procedures were mixed in the same volume as the operating procedures. The inspector informed the licensee of the problem at the time of the observation, and noted that corrections had been implemented prior to the conclusion of this inspection. This concern was discussed at the exit interview and the licensee was informed that no further response would be required to this noncompliance. No further concerns were identified.

6. Visual Verification of Unit 2 Refuel Grapple Operation

In discussions with the licensee on November 11, 1977, the inspector was informed that the proximity switch on the Unit 2 refueling grapple was repeatedly failing, possibly as a result of inappropriate application. The licensee requested relief from a previous commitment to use the proximity switch designed for positive verification of grapple hook function. As a result of this problem, the inspector conducted a visual inspection of the Unit 2 refuel grapple, and determined that a visual observation of the refuel grapple in operation can be accomplished from the refuel floor. As a result of this visual operation the licensee was relieved from the commitment to use the refuel grapple proximity switch. The licensee committed to visually verify grapple operation for each fuel move, and to document this verification in their data sheet. No concerns were identified.

7. Meeting Regarding Policies for Offsite CECO Department's Working at Dresden

On November 15, 1977, the inspector attended a meeting conducted by the licensee for the operational analysis department, substation construction, and station construction management personnel. The meeting addressed itself to the need for offsite personnel to fully comply with the requirements at the station including the quality assurance program.

A set of guidelines were issued to the offsite management personnel, and a general discussion of these guidelines was conducted. During this meeting the inspector informed all personnel present that the quality assurance program must be implemented on all safety related work accomplished at the station. The implementation of this program will be reviewed at a future inspection.

8. Augmented Review of Plant Operations (Units 1, 2, and 3)

On November 22 and 23, 1977, the inspector conducted a review of the licensee's activities in the control room. The review included a review of the control room logbook for each unit, a review of the Unit 3 Pl program, determination of proper panel lineup and a discussion with the control room operators on those alarms that were presently lit during this inspection. No significant concerns were identified.

The inspector conducted a tour of the Units 2 and 3 reactor building and determined that housekeeping and storage conditions have

not changed considerably since the last inspection. As these conditions were identified as a deviation from a commitment (IE Reports 010/77-32; 237/77-28; 249/77-28), the inspector did not identify any noncompliance in this area, however, the housekeeping conditions were discussed at the exit interview held on November 23, 1977. The licensee's program for housekeeping and storage of materials remains an unresolved item.

9. Review of Licensee's Deviation Reports

The inspector conducted a review of the Unit 2 deviation report book and noted that on September 30, 1977, during a routine snubber inspection on Unit 2 the licensee determined that 2 snubbers (snubbers No. 26 and 28), were identified as inoperable in accordance with the licensee's procedural requirements (DTS 020-1). The 2 snubbers identified as inoperable were then removed and bench tested where it was determined that snubber No. 26 was still operable even though the snubber fluid level had exceeded the acceptance criteria identified in the licensee's procedure. As a result of this bench test snubber No. 26 was declared operable, leaving only snubber No. 28 as inoperable. The determination of one failed snubber during this inspection places the licensee on a 12-month inspection program. In reviewing the snubber inspection data sheets the inspector determined that two snubbers had failed the visual inspection and therefore placed the licensee on a six-month inspection schedule.

The licensee representative stated that the "question of absolute operability determination by visual inspection of the snubber liquid level is addressed in a letter from the snubber vendor. In reviewing this communication from the vendor the inspector noted that the vendor stated "In recent times an intense review of indicator position has become a standard of definition of operability. While this can be accomplished utilizing the fluid level indicator, it must be remembered that this method is only effective if the indicator, indicator plate, and overfill protection vent are calibrated to the specific unit." The inspector informed the licensee that the content of this communication affects the licensee's method of snubber inspection. This problem will be reviewed further in office and is considered an unresolved item.

The inspector also noted that during another snubber inspection, requiring bench testing of at least 10% of the snubbers inaccessible during normal operation, the licensee determined that no failed snubbers were identified. However, the inspector informed the licensee that as a result of bench testing snubbers No. 26 and 28,

and determining that snubber No. 28 had failed as a result of leakage, the licensee is required to bench test an additional 10% of the remaining snubbers. This was discussed at the exit interview.

10. General Review

In a general review of the licensee's overall program, the inspector determined that on October 29, 1977, during a dead bus transfer of power for Unit 2, the reactor scrammed and four blade guides (used during refueling) were ejected from the reactor core. Further review indicates the cause of this problem was that control rods C-8, H-6, H-7, and L-8 were all fully withdrawn for control rod drive inspections. Simultaneous with the CRD inspection, the refueling crews on the refueling floor repositioned four blade guides to facilitate work on the LPRM strings in the area around these control rod blades. As a result of the control rod blade being fully withdrawn, the blade guides were improperly positioned over the control blades resulting in their expulsion when the dead bus transfer scram signal occurred. Further investigation indicated that the licensee failed to tag out each of the individual control rod drives that were withdrawn, relying on the fact that the control rod hydraulic system charging line itself was tagged out of service. When the control rod hydraulic system was placed back in service an inadequate review of the consequences of this action resulted in the above described problem. Had the licensee included in the CRD hydraulic system isolation, the requirement to tag out each affected CRD unit or had the licensee tagged the affected CRDs when requested to do so by the refueling foreman, the probability of blade guide expulsion would have been lessened. The inspector informed the licensee that the expulsion of the four blade guides from the reactor core were a result of the licensee's failure to comply with their own quality assurance program (QP 3-52), which requires that all safety related equipment being worked on be tagged out of service. This failure was identified as an item of noncompliance and was discussed at the exit interview.

On November 18, 1977, during normal reactor refueling operations, it was noted that the No. 1 seal cavity pressure in the 2A recirculation pump was greater than 1200 psig. The control rod drive hydraulic system was subsequently shutdown. At the time of the event the reactor was in the shutdown mode, fuel in the vessel, and the vessel head removed. With the recirculation pump suction and discharge valves isolated, the recirculation pump bowl and associated piping were pressurized. The licensee speculated that the highest pressure could not have exceeded 1550 psig which is the CRD hydraulic charging water pressure.

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Further review indicated that the cause of the problem resulted when the mechanical maintenance department in preparing for a hydro test of the 2A "recirculation" pump seal, lined the CRD hydraulic system up to the pump bowl intending to test the No. 1 seal at 1,000 pounds pressure. The isolation valves which line the CRD system up to the recirculation loop were opened and were left open after the hydro was cancelled. Following the cancellation of the hydro, another job was in progress the next day utilizing the same CRD supply line for another purpose. This resulted in the over-pressurization of the recirculation pump bowl. In reviewing this problem the inspector determined that the licensee's maintenance procedure DMP 249, recirculation pump seal work, is inadequate in that the portion of the procedure which addresses the pump seal hydro test requires specific valve lineup for implementation of the hydro, but does not identify the final valve position upon completion of the hydro test. In fact the licensee program does not address specifically what must be accomplished in the event of a cancellation of a test or program halfway through the job. The inspector informed the licensee at the exit interview that the inadequate procedure is a result of inadequate management review, and is an item of noncompliance.

On November 22, 1977, while performing maintenance on LPCI valve 1501-3A, the Unit 2 east LPCI room was flooded with approximately 3 feet of water coming from the open valve body of valve No. 1501-3A.

In investigating the cause of the flooding, the licensee determined that the flooding was caused by starting the 2/3 diesel generator cooling water pump. This pump automatically starts whenever a signal to start the 2/3 diesel generator is initiated. The cooling water pump supplies water to the diesel generator bearings, and then discharges into the same line that the 1501-3A valve is located. The 2/3 diesel generator was started to test for operation as a result of a failure on the Unit 3 diesel generator. This automatically pumped river water into the east LPCI room.

In reviewing the above described problem the inspector determined that the licensee's maintenance procedure DMP 255, Inspection and Maintenance of LPCI 1501-3A and 3B Valve Internals, require that the Unit 2/3 diesel generator cooling water system be taken out of service. This was not accomplished by the licensee. Additionally, in step 8 of this procedure the licensee is required to reassemble the valve at the completion of work or install blind flanges over the body openings if the repair work is extensive. No blind flanges were installed on the valve body. The inspector informed the

licensee that the failure to follow the above identified maintenance procedure was the cause of the inadvertent LPCI room flooding and is an item of noncompliance. This was discussed at the exit interview.

11. Exit Interview

On November 18, 1977, the inspector met with licensee representatives denoted in Paragraph 1.a at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection. The licensee representatives made the following remark in response to one item of noncompliance discussed by the inspector.

Acknowledged the noncompliance relating to procedure control (Paragraph 5) and stated that the problem has been resolved. The inspector informed the licensee that no further response would be required to this noncompliance.

12. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1.b at the conclusion of the inspection on November 23, 1977). The inspector summarized the scope and findings of the inspection. The licensee representatives made the following remarks in response to certain of the items discussed by the inspector:

Acknowledged the items of noncompliance identified in Paragraph 10 of this report.

Acknowledged the inspector's statement that an additional 10% of inaccessible snubbers must be inspected prior to startup, and stated that this would be accomplished.

Acknowledged the inspector's comments regarding visual inspections of all the snubbers and the fact that the visual determination of snubber liquid level is a questionable acceptance criteria and is an unresolved item.

On November 29, 1977, in a telephone conversation with the licensee, the inspector informed the plant manager of the noncompliance identified in Paragraph 2. The licensee acknowledged the noncompliance.