

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

REGION III

Report No. 50-10/77-21; 50-237/77-20; 50-249/77-20

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

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

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

Inspection at: Dresden Site, Morris, IL

Inspection conducted: July 8, 18, 28, 29, and August 1, 1977

Inspectors: *J. E. Kohler*
J. E. Kohler 8/10/77
(July 8, 18, 29, and August 1, 1977)

J. L. Barker
J. L. Barker 8/10/77
(July 28, 1977)

Approved by: *J. E. Kohler for*
W. S. Little, Chief 8/10/77
Nuclear Support Section

Inspection Summary

Inspection on July 8, 18, 28, 29 and August 1, 1977 (Report No. 50-10/77-21; 50-237/77-20; 50-249/77-20)

Areas Inspected: Routine, unannounced inspection of preparation and performance of Containment Integrated Leak Rate Test and licensee program for transport of heavy loads over fuel. The inspection included 25 hours of onsite time by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

- *B. Stephenson, Station Superintendent
- C. Sargent, Technical Staff Supervisor
- G. Budzichowski, U-1 Operating Engineer
- P. Duggan, U-1 Engineer
- J. Phelan, U-1 Engineer
- W. Pietryga, Nuclear Engineer
- R. Meadows, Engineer

The inspector also interviewed two refueling foremen.

*denotes those present at the exit interview.

2. CILRT Test Preparation

The inspector reviewed the CILRT test procedure at the site and discussed the comments with the cognizant engineer. Several items discussed resulted in changes to the procedure.

3. Procedure Audit

The inspector reviewed the valve line up and audited portions of it prior to commencement of the test. In addition, the inspector also reviewed the instrument error analysis and audited portions of the computer program against test cases. No discrepancies were found.

4. July 31, 1977 CILRT (Abortive)

On July 31, 1977 to August 1, 1977, Dresden 1 performed a CILRT that was aborted after about three hours when it was discovered that primary containment pressure had dropped approximately .5 psi. At the time of test termination the upper confidence level leakage rate was 2.36 w/o/day exceeding the allowable leakage rate of .4 w/o/day.

Investigation by the licensee revealed leakage from the secondary steam line bellows. Further investigation revealed bellows leakage at the primary steam, feedwater, and heating steam lines. A total of ten bellows have been identified by the licensee as requiring replacement.

5. Bellows Repair

The bellows at the Dresden Station Unit 1 are of the single bellows design and are not testable by conventional local leak rate testing methods. The last previous date at which the integrity of the bellows would have been confirmed was during the 1974 CILRT.

The licensee has purchased a single bellows design for replacement and estimates that approximately three weeks will be required for installation.

6. Additional Information on Bellows

In telephone conversations with the licensee on August 4 and 5, 1977, the following additional information was learned: A vendor selected from the Station's certified list of suppliers has been contacted to fabricate 10 stainless steel bellows as replacement articles for those identified as failed or requiring replacement during Type A testing. All bellows were dye penetrant inspected and evidence of pinholes, cracking, and rustspots were found on all except the bellows on the emergency condenser vent line. Based on the dye penetrant test, the emergency vent bellows is not planned to be replaced. There are no other bellows that affect primary containment in such a way that their failure would result in a breach of containment.

Preliminary investigation by the licensee indicates the cause of the failure to be stress corrosion cracking. OAD will conduct metallurgical examinations of failed material to determine the exact cause.

7. Bellows Installation

Installation of the new bellows involves welding two half bellows to the guard pipe, process pipe and a longitudinal weld to join the bellows. There will be no welding on the containment.

8. Local Leak Rate Testing of Repaired Bellows

The licensee is not using a reducer to locally test the repaired penetrations. The licensee has not proposed performing a structural integrity test. The only test being planned at this time is a 20 PSIG Type A Test.

Based on the information obtained the inspector could not resolve the following items and turned these over to ONRR for further review. These items will be followed up at a later date.

- a. Performance of a structural integrity test after modifications to the primary system are complete.
- b. Installation of testable seals on all bellows found leaking.
- c. Installation of testable seals on all bellows that form part of the primary containment.
- d. Schedule for completion of containment modifications with respect to future operation of Dresden 1.

9. Licensee Program for Transport of Heavy Loads Over Fuel

The inspector reviewed the licensee's program for precautionary measures implemented to preclude transportation of heavy loads over or in close proximity to either spent fuel stored or fuel in an open reactor vessel. He reviewed licensee procedures DFP 800-20, "Operation of Whiting Redundant Crane System," DFP 800-32, "NFS-4 Spent Fuel Shipping Cask," and DOS-6, "Surveillance of 2/3 Reactor Building Crane Prior to Operation in Restricted Mode."

Concerning Unit 1, the inspector found that there are procedures which limit the transport of the spent fuel cask to no closer than ten feet of the spent fuel storage area. There are no procedures which prevent the movement of the refueling basket or other heavy loads over the spent fuel or the open reactor, but the physical arrangement of the cranes and bridges both in the containment and in the fuel building prevent movement, except for a covert act, over fuel without great difficulty. Interviews with licensee representatives indicated that training emphasizes dangers of movement of any loads over fuel. Also, one refueling crew makes all movements concerning fuel.

Concerning Unit 2/3, the inspector found that procedures are implemented which precaution against moving loads either over the spent fuel storage area or the reactor except if absolutely necessary. Interlocks on the crane prevent movement over spent fuel and the reactor when operating in the "Restricted Mode," a mode specified for movement of the spent fuel cask. No procedures preclude entirely crane transportation over the open

reactor vessel, such as when dismantling the reactor vessel for refueling (i.e., reactor vessel head, dryers, separators, shield blocks). One crew for both Unit 1 and Units 2/3 handles all movements around the fuel and are trained in the dangers of any load movement over or in the vicinity of fuel.

No items of noncompliance or deviations were identified.

10. Management Exit

At the management exit, the inspector stated that the July 31, 1977, test represented the second consecutive Type A test failure and that retesting would be required before startup and each refueling outage as specified by 10 CFR 50, Appendix J. Mr. J. L. Barker discussed by telephone with Mr. B. Stephenson on August 3, 1977, the purpose, scope, and findings of his inspection.