

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

REGION III

Report No. 50-010/77-27; 50-237/77-24, 50-249/77-24

Docket No. 50-10; 50-237; 50-249 License No. DPR-02; 19; 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: September 8, 9, 12-16, and 21, 1977

Inspectors:

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10-3-77

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Inspection Summary

Inspection on September 8, 9, 12-16, and 21, 1977 (Report No. 50-010/77-27; 50-237/77-24 and 50-249/77-24)

Areas Inspected: Routine, unannounced inspection of plant operations for Units 1, 2 and 3; onsite review of Units 1, 2 and 3 licensee event reports; review of Unit 1 calibration on safety related instrumentation; review of Unit 1 surveillance requirements; onsite witness of Unit 2 main steam isolation valve leak rate test; and a plant tour. The inspection involved 138 inspector-hours onsite by 3 NRC inspectors.

Results: Of the six areas inspected, no items of noncompliance or deviation were found in three areas; three apparent items of noncompliance were found in three separate areas (infraction - no acceptance criteria established for the timing on Unit 1 power operated containment isolation valves - paragraph 5; infraction - failure to perform surveillance within required time limit on Units 1 and 3 - paragraphs 5 and 6; infraction - violation of secondary containment on Unit 2 and 3 - paragraph 9).

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DETAILS

1. Persons Contacted

- *B. Stephenson, Station Superintendent
- **A. Roberts, Assistant Superintendent
- **B. Shelton, Administrative Assistant
- **C. Sargent, Technical Staff Supervisor
- *J. Wujciga, Unit 2 Lead Engineer
- *R. Wiedner, Technical Staff Engineer
- *N. Scott, Lead Operating Engineer
- *J. Jurecki, Maintenance
- *W. Hildy, Instrument Maintenance Engineer
- *R. Ragan, Unit 3 Operating Engineer
- *D. Farrer, Technical Staff
- *J. Dolter, Nuclear Engineer
- *W. Weibeler, Quality Assurance
- *G. Tannec, Quality Assurance
- *R. Kyrrouac, Quality Control Engineer

The inspector also talked with and interviewed several other licensee employees, including members of the technical and engineering staffs, reactor and auxiliary operators, and health physics personnel.

**Denotes those attending the exit interview conducted on September 14, 1977.

*Denotes those attending the exit interview conducted on September 16, 1977.

2. Main Steam Isolation Valve Leak Testing - Unit 2 (F. Maura)

The inspector witnessed the as found leak testing of the MSIV's. The tests were conducted in accordance with procedure D TS 250-1, Rev. 2. Editorial comments regarding the procedure were discussed with the licensee prior to the performance of the test and during the exit interview.

The first test consisted of a pressure decay measurement of the volume between the two valves with both valves dry. If significant leakage is measured, a second test is performed with a head of water against the inboard isolation valve on the reactor side. Preliminary results, in standard cubic feet per hour at 25 psig, were:

"A" line (dry)	- 00.39
"B" line (dry)	- 58.73
"B" line (inboard wet)	- 58.66

"C" line (dry) - 6.70
"C" line (inboard wet) - 6.68
"D" line (dry) - 1.88
"D" line (inboard wet) - 1.52

The leakage path for the "B" line was found to be through the packing on the outboard MSIV. The licensee plans to repack the valve and retest. The inspector reminded the licensee at the exit interview of the need to retighten the valve before startup following repacking.

The instrumentation used during the test (HEISE gauge #DTS 32 and thermometer #153237D) had been calibrated just prior to testing. The calibrations were traceable to NBS standards.

3. Housekeeping Conditions of Unit 2 X-Area

The inspector noted that the cleanliness of the X-area, where the outboard MSIV's are located, had deteriorated considerably. A considerable amount of main steam line insulation had been damaged and was scattered on the X-area floor. The inspector also noted that several I-beams in the X-area were still full of water. This item was discussed with the licensee by telephone on September 19, 1977.

4. Calibration of Unit 1 Safety Related Instrumentation

The inspector reviewed the licensee's program for Unit 1 calibrations to determine whether the calibration of components and equipment associated with safety related systems and/or functions is in conformance with the requirements of the Technical Specifications and approved guides and standards. The review consisted of verifying the frequency of calibration, components service status of the system during calibration, review of procedures used to calibrate the components to assure proper review and approval, acceptance values, and detailed step wise instructions. The technical content, component trip points, calibration instruments, and personnel qualifications were adequate. The inspector also witnessed several calibrations in progress at the time of the inspection. No concerns were identified.

In general, the overall appearance of Unit 1 calibrations including records appeared to be in satisfactory condition. No items of noncompliance or deviations were identified.

5. Review of Unit 1 Surveillance

The inspector reviewed the Unit 1 surveillance program to determine whether the surveillance of components or equipment associated with

safety related systems is being conducted as required by Technical Specifications and in accordance with procedures.

The review consisted of verifying that each surveillance test was accomplished in accordance with properly approved procedures, and the procedures included prerequisites, functional tests, acceptance criteria, and operational checks prior to returning the equipment to service. The inspector examined the procedure technical content, personnel qualifications, and the test results to determine conformance with the technical specification requirements. Ongoing surveillance was not being conducted during this inspection. The following surveillance procedures were reviewed.

- DOS 4100-1, diesel fire pump
- DOS 1500-1, valve operability
- DOS 1500-2, post incident pump operability
- DOS 1600-1, power operated isolation valves
- DOS 6900, D1 storage battery checks
- DIS 1600-6, spare high pressure auto isolation
- DIS 500-1, reactor high pressure scram

The following concerns were identified:

Regarding DOS 4100-1, diesel fire pump surveillance, the inspector noted in many instances throughout the year the specific gravity on individual battery cells was found below the procedural acceptance criteria. In particular the inspector noted that in May, 1977, the specific gravity on 10 cells was unacceptable and in June 1977, there is no record to indicate that specific gravity was taken (the licensee stated on the procedure that a significant amount of water was added to the battery cells, negating the specific gravity tests). However, in July 1977, the licensee reported (50-010/77-28), the Unit 1 diesel fire pump failed to auto start during a surveillance test, as a result of battery failure. The inadequate corrective action to the problems uncovered by the surveillance of these batteries appears to have contributed to the failure of the diesel fire pump. This concern is discussed in Paragraph 6 and discussed at the exit interview.

With regards to DOS 1600-1, timing of power operated containment isolation valves, the inspector determined that no acceptance criteria is identified in the procedure. The surveillance on containment isolation valves consists of exercising and timing these valves on a quarterly schedule. In reviewing the last four

surveillances performed on these valves, the inspector noted that time to close on these valves varied considerably. The lack of acceptance criteria on the containment isolation valves was discussed at the exit interview.

Regarding DOS 6900-1, D1 storage battery check, the inspector noted that surveillance on these batteries was completed in October 1976 and not completed again until March 1977. Almost five months had elapsed before fulfilling this quarterly surveillance requirement. Also during a licensee event report review the licensee reported several instances of failure to meet surveillance intervals - para. 6. This item of noncompliance was discussed at the exit interview.

In general it appears that the Unit 1 surveillance work is not being reviewed adequately by management personnel. The inspector informed the licensee that inadequate surveillance results must be corrected before the surveillance test is considered accomplished and satisfactory.

On September 21, 1977, the inspector witnessed the Unit 1 startup of the offgas recombiner system, in preparation for operation of the offgas charcoal adsorber system. The inspector noted that procedures used during the test were adequate, test prerequisites were completed, acceptance criteria was available and personnel qualifications were adequate. No concerns were identified.

6. Onsite Review of Licensee Event Reports (Units 1, 2, and 3)

Through direct observations, discussions with licensee personnel, and a review of the records, the following licensee event reports were reviewed to determine that reporting requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with the Technical Specifications.

Unit 1

Report No. 77-16, Excessive Surveillance Intervals
Report No. 77-19, Control Rod Drift
Report No. 77-21, Failure of Emergency Condenser Outlet Valve #MO 109
Report No. 77-27, Failure of Type A Integrated Leak Rate Tests
Report No. 77-28, Unit 1 Diesel Fire Pump Failed to Auto Start
Report No. 77-29, Nonconservative MCHFR Calculations

Unit 2

Report No. 77-21, LPCI Valve 2-1501-3A Failed to Open
Report No. 77-25, Failure of 2/3 Diesel Generator
Report No. 77-26, Instrument Setpoint Drift on Reactor Bypass
Pressure Switch PS-263-51A
Report No. 77-27, Failure of 46 CRD's to Completely Insert
Report No. 77-30, HPCI Valve 2301-3 Failed to Open

Unit 3

Report No. 77-12, Failure to Take Reactor Water Samples During
Startup
Report No. 77-16, APRM Flow Bias Mismatch
Report No. 77-17, APRM #4 was less than 50% of LPRM Inputs
Report No. 77-19, CRD H-9 Failed to Fully Insert During Scram Test
Report No. 77-24, Torus Level Exceeded During Test of Electromatic
Relief Valve
Report No. 77-31, Surveillance Intervals Excessive on APRM Channels
Report No. 77-32, Surveillance Tests not Performed on LPCI, Core
Spray Pump, and Valve Operability
Report No. 77-33, APRM #4 with Less than 50% LPRM Input
Report No. 77-34, Feedwater Recirc Pump Mismatch

The following concerns were identified:

With respect to report No. 77-28, Unit 1 diesel fire pump failed to auto start, the inspector noted as previously identified in paragraph 5 that inadequate surveillance appears to have contributed to the failure of the diesel fire pump to start in auto. The testing of the diesel fire pump is part of the requirements in performing the core spray logic test DOS 1400-3.

With regards to Unit 2 report No. 77-25, failure of 2/3 diesel generator, the inspector noted that the cause of this failure is typical of the numerous failures that have been occurring on the Units 2 and 3 diesel generators. During a meeting conducted on September 14, 1977, with the licensee, commitments were made by the licensee and are identifiable in paragraph 10 of this report.

Regarding Unit 2 report No. 77-27, failure of 46-CRD's to completely insert, the licensee has been requested by the Division of Operating Reactors (letter D. K. Davis to R. L. Bolger, dated August 23, 1977) to inform that office of the plans to investigate the cause of

degraded CRD performance at Dresden Unit 2. Additionally, the inspector noted that on September 7, 1977, during a Unit 1 scram approximately 51 control rod drives failed to completely insert (i.e., rods stopped at 02 position). In reviewing this incident the inspector noted that only one additional rod to those already identified, failed to insert to position 02. While this licensee event report is considered closed, the problem relating to CRD failure to insert will be carried as an unresolved item.

With respect to Unit 3 report Nos. 77-17 and 77-33, APRM #4 with less than 50% LPRM input, the problem of APRM #4 receiving less than 50% of its normal complement of LPRM inputs was discovered during normal surveillance activities. However, the more recent report (77-37) identifies this same failure on APRM's 1 and 2 again during a surveillance test. At present the licensee is taking reference voltage readings performing regular monthly surveillance on a weekly basis, on channels 1 and 2 to determine the cause of the abnormal electronic drift. The inspector requested and received a commitment as identified in paragraph 10, to the effect that if any of the six APRM's on Unit 3 show indication of this failure the normal monthly surveillance will be changed to a weekly surveillance until the problem is resolved. The licensee event reports Nos. 17 and 33 are considered closed. The problem with APRM failures will be carried as an unresolved item.

With respect to Unit 3 report No. 77-19, CRD H-9 failed to fully insert during scram test, the inspector determined the licensee to be in noncompliance in a previous inspection (inspection report No. 50-249/77-21). Further review indicates that corrective action has been accomplished and no further concerns are outstanding.

In reviewing the Unit 3 report Nos. 77-31 and 77-32, excessive surveillance interval, the inspector determined that the actual surveillances missed were caught and completed by the licensee far beyond the normal surveillance time. The inspector informed the licensee that once again the failure to perform surveillance is being discovered after the act (i.e., surveillance actually missed), which indicates the licensee's program is not preventing the problem from occurring but only identifying it after it has occurred. This noncompliance was discussed at the exit interview.

No other concerns were identified.

7. Inoffice Review of Licensee Event Reports (Units 1, 2, and 3)

An inoffice review was conducted on the following licensee event reports. No concerns were identified.

Unit 1

Report No. 77-20, Sphere Exhaust Vent Valves 503 and 504 Fail Leak Rate Tests
Report No. 77-23, Main Steam Drain Isolation Valve M0168 fails to Close

Unit 2

Report No. 77-22, CRD L-5 Uncoupled and Overtraveled
Report No. 77-23, APRM #1 Setpoint Drift
Report No. 77-28, Containment CCSW Water Vault Door Left Open
Report No. 77-29, CRD's F-5 and H-7 Uncoupled and Overtraveled
Report No. 77-32, LPCI Valve 2-1501-5A Failed to Open

Unit 3

Report No. 77-15, Isolation Condenser High Steam Flow Pressure Switch Drift
Report No. 77-20, Leak in Weld Crack in 3A Moisture Separator Drain Tank/Drain Line
Report No. 77-22, Crack in 2" Drain Pipe Penetration on Mechanical Vacuum Pump
Report No. 77-35, High Pressure Scram Switch Fails
Report No. 77-36, LPCI Test Valve 3-1501-20B Failed to Open

With regards to Unit 2 report Nos. 77-22 and 77-29, CRD uncoupling, the Division of Operating Reactors has requested and received information on the control rod drive program to be implemented during this refueling outage to eliminate CRD uncoupling occurrences. The above described reports are considered closed however, the control rod drive uncoupling problem is considered an unresolved item.

During the inspectors inoffice and onsite review of the licensee's event reports the inspector determined that 4 items have been identified and properly corrected by the licensee. No other concerns were identified.

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

The inspectors reviewed general plant operations including examination of the control room log books, shift engineer log books, equipment outage logs, special operating orders, and jumper and tag outlogs for the period of June 1, 1977 to September 1, 1977. This review was conducted to confirm that facility operations is in conformance with the requirements established in the Technical Specifications

10 CFR, and administrative procedures. No concerns were identified. The inspectors reviewed the licensee's deviation reports and confirmed that no violations of Technical Specifications reporting or limiting conditions for operation requirements were made.

9. Plant Tour (1, 2, and 3)

The inspector's conducted a plant tour of all three units to determine that monitoring instrumentation is recording as required, radiation controls are properly established, and housekeeping conditions are adequate, the existence of fluid leaks and pipe vibrations are minimal, pipe hanger and seismic restraint settings have proper oil levels, equipment caution or lockout tag information corresponds to that identified to that in the control room, and selected valve positions or equipment start position switches are correct. Discussions were conducted with the control room operators relating to the reasons for selected lighted annunciators. The inspectors noted that operator awareness and response to the lighted annunciators has improved considerably over the past. It was also noted that the control room manning at the time of the inspection was in conformance with the requirement of 10 CFR 50.54(k) and the facility Technical Specifications. The following concerns were identified.

During a tour of the Unit 2 reactor building the inspectors noted that housekeeping conditions had deteriorated considerably. The inspector cautioned the licensee that while some disorder is to be expected during a refueling outage, there is no reason why a periodic cleanup cannot be conducted. This was discussed at the exit interview.

During the tour of the Unit 2 and 3 reactor building the inspectors found both Unit 2 and Unit 3 secondary containment personnel access doors not operating as required by the technical specifications. This item of noncompliance was discussed at the exit interview. This office is aware that a modification to the secondary containment doors is in progress, however, this modification has been in existence for over two years and no work has been accomplished on the doors.

10. Commitments

As a result of the continuous failures of the Units 2 and 3 diesel generators, a meeting was conducted on September 14, 1977, with

the licensee, relating to these increased failures. The inspector requested the licensee to make a diesel generator reliability study and determine the corrective action needed to resolve the Dresden diesel generator problems. The licensee stated that a diesel generator analysis will be conducted and will include the necessary corrective action.

A commitment was also made by the licensee to increase visual surveillance on the diesel generator cooling water pumps from once per shift to twice per shift.

On September 20, 1977, in a telephone conversation with the licensee, the licensee stated that the monthly surveillance interval on the APRM's will be increased to a weekly surveillance if any further failures, occur, as identified in licensee event reports (249/77-17 and 249/77-33). It is understood that once the weekly surveillance starts, it shall continue on all six APRM's for Unit 3 until the problem is resolved.

11. Exit Interviews

The inspector met with licensee representatives (denoted in paragraph 1), at the conclusion of the inspection on September 14, 1977. The inspector summarized the scope and findings of the inspection. The licensee representative made the following remarks in response to certain of the items discussed by the inspector;

Stated that the procedure would be revised to correct or better explain some of the statements in the procedure relating to the MSIV test. Among the items are an expanded step to insure the upstream and downstream lines are drained prior to testing and a better definition of the stabilization criteria.

Acknowledge the requirement for a timing of the MSIV's after repacking and prior to startup.

During a telephone conversation on September 19, 1977, the licensee acknowledged the deteriorated condition in the X-area and stated that it would be corrected before startup.

The inspectors met with licensee representatives denoted in paragraph 1 at the conclusion of the inspection on September 16, 1977. The inspectors summarized the scope and findings of the inspection. The licensee representatives made the following remarks with respect to certain items discussed by the inspector;

Acknowledge the items of noncompliance as identified in paragraphs 5, 6, and 9 of this report.

Stated that the modification to the secondary containment personnel access doors is still in progress and is hoped to be completed this year.

Stated that the CRD return line reroute will be accomplished during this refueling outage. A U-T of the thermal sleeve on the CRD inlet will be accomplished, however, there are no plans to remove the thermal sleeve unless the U-T analysis indicates the need.

Stated that the Unit 1 balance of plant instruments used to confirm Technical Specification requirements will be on a surveillance schedule by December 31, 1977.