

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

REGION III

Report No. 50-010/80-13; 50-237/80-14; 50-249/80-18

Docket No. 50-010, 50-237, 50-249 License No. DPR-02, DPR-19, DPR-25

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

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

Inspection At: Dresden Site, Morris, IL

Inspection Conducted: July 7 - August 1, 1980

Inspectors:	<i>R. L. Spessard</i> J. L. Barker <i>for</i>	<u>8/18/80</u>
	<i>J. F. Streeter</i> J. F. Streeter	<u>8/15/80</u>
	<i>F. A. Maura</i> F. A. Maura	<u>8/15/80</u>
	<i>T. M. Tongue</i> T. M. Tongue <i>for</i>	<u>8/18/80</u>
	<i>F. Reimann</i> <i>Frank W. Reimann</i>	<u>8-15-80</u>
	<i>R. Walker</i> R. Walker <i>for</i>	<u>8/18/80</u>
	<i>R. Schulz</i> R. Schulz	<u>8-15-80</u>
	<i>R. L. Spessard</i> R. L. Spessard	<u>8/18/80</u>
Approved By:	<i>R. L. Spessard</i> R. L. Spessard, Chief Projects Section 1	<u>8/19/80</u>

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Inspection Summary

Inspection on July 7 - August 1, 1980 (Report No. 50-010/80-13; 50-237/80-14; 50-249/80-18)

Areas Inspected: Routine, unannounced inspection of operational safety verification, Units 2 and 3; monthly surveillance observation; licensee event reports followup; IE Bulletin followup; training; requalification training; onsite review committee; inspection during long-term shutdown; and IE Bulletin 80-17 testing requirements, Units 2 and 3. The inspection involved 238 inspector-hours onsite by 8 NRC inspectors including 112 inspector-hours onsite during off-shifts.

Results: Of the nine areas inspected, there were no items of noncompliance identified in eight areas. There was one apparent item of noncompliance (Deficiency - licensed operators failed to keep themselves cognizant of design changes, facility license changes, and procedure changes - Paragraph 7) identified in one area.

DETAILS

Section I

1. Persons Contacted

- *B. Stephenson, Station Superintendent
- *R. Ragan, Operations Assistant Superintendent
- *J. Eeingenburg, Maintenance Assistant Superintendent
- *B. Shelton, Administrative Services and Support Assistant Superintendent
- *D. Farrar, Technical Staff Supervisor
- C. Sargent, Unit 1 Operating Engineer
- J. Wujciga, Unit 2 Operating Engineer
- M. Wright, Unit 3 Operating Engineer
- E. Budzichowski, Unit Support Operating Engineer
- D. Adam, Waste Systems Engineer
- G. Myrick, Rad-Chem Supervisor
- B. Sanders, Station Security Administrator
- *B. Zark, Training Supervisor

The inspector also talked with and interviewed several other licensee employees, including members of the technical and engineering staffs, reactor and auxiliary operators, shift engineers and foremen, electrical, mechanical and instrument personnel, and contract security personnel.

*Denotes those attending one or more exit interviews conducted on July 11 and 18, 1980 and August 1, 1980.

2. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the month of July, 1980. The inspector verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of Unit 2 and 3 reactor buildings and turbine buildings were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need of maintenance. The inspector by observation and direct interview verified that the physical security plan was being implemented in accordance with the station security plan.

The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. During the month of July 1980, the inspector walked down the accessible portions

of the Unit 2 Core Spray and LPCI systems to verify operability. The inspector also witnessed portions of the radioactive waste system controls associated with radwaste shipments and barreling.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under technical specifications, 10 CFR, and administrative procedures.

No items of noncompliance were identified.

3. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing on the IRM's, SRM's, APRM's, and diesel generators and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with technical specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

No items of noncompliance were identified.

4. Licensee Event Reports Followup

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

Unit 2

LER 80-14 - 2C Main Steam Line Radiation Monitor Inoperable
LER 80-15 - Torus to Drywell Vacuum Breaker 2-1601-33A Inoperable
LER 80-17 - HPCI Inboard Isolation Valve Inoperable
LER 80-19 - 2C Main Steam Line Radiation Monitor Tripped
LER 80-20 - Torus to Drywell Vacuum Breaker 2-1601-32D Inoperable
LER 80-21 - Drywell to Torus dp Dropped Below 1 PSID While Performing
Surveillances

Unit 3

LER 80-22 - IRM CH.12 Downscale Rod Block Less Than Technical
Specification Limits
LER 80-23 - Level Instrument LIS 3-263-58A Tripped Less Than Technical
Specification Limits

- LER 80-24 - Level Instrument LIS 3-263-58A Tripped Less Than Technical Specification Limits
- LER 80-25 - Main Steam Line High Flow Switch Tripped in Excess of Technical Specification Limits
- LER 80-26 - 3A LPCI Heat Exchanger Made Inoperable to Repair Thirteen (13) Leaking Tubes
- LER 80-27 - Unit 3 CRD Scram Discharge Piping Does Not Meet Seismic Requirements as Discussed in the FSAR

Regarding LER 80-27, a RIII construction branch inspector will review the licensee's analysis and corrective action during a future inspection. (249/80-18-01)

No items of noncompliance were identified.

5. IE Bulletin Followup

For the IE Bulletins listed below the inspector verified that the written response was within the time period stated in the bulletin, that the written response included the information required to be reported, that the written response included adequate corrective action commitments based on information presentation in the bulletin and the licensee's response, that licensee management forwarded copies of the written response to the appropriate onsite management representatives, that information discussed in the licensee's written response was accurate, and that corrective action taken by the licensee was as described in the written response.

- IEB 79-23 - Potential Failure of Emergency Diesel Generator Field Exciter Transformer
- IEB 79-26 - Boron Loss from BWR Blades
- IEB 79-27 - Loss of Nonclass-1-E Instrumentation and Control Power System Bus During Operation

No items of noncompliance were identified.

6. Training

The inspector attended two of the licensee's operator lecture series and verified that lesson plan objectives were met and that training was in accordance with the approved operator requalification program schedule and objectives.

The inspector verified by direct questioning and record review of two new, two existing, and two temporary employees that administrative controls and procedures, radiological health and safety, industrial safety, controlled access and security procedures, emergency plan, and quality assurance training were provided as required by the licensee's technical specifications; verified by direct questioning of one craftsmen and one technician that on-the-job training, formal technical training commensurate with job classification, and fire fighting training were provided.

No items of noncompliance were identified.

7. Requalification Training

The inspector verified that any changes made to the requalification program were in conformance with requirements and commitments; verified that the licensee has a prepared schedule for conducting required lectures, the licensee has prepared lesson plans or other documentation which adequately describes the scope and depth of the lectures, and the licensee has evaluated the results of the most recent annual examinations and identified deficient areas to be covered in the lecture series; and verified through record review of two control room operators holding NRC Reactor Operator licenses, two shift supervisors holding NRC Senior Reactor Operator licenses, and two Reactor Operators not actively engaged or directing operation of the facility the availability and adequacy of copies of the most recent annual written examination and the individuals' response and documentation of attendance at all required lectures, required control manipulations, performance evaluations, additional training received in identified deficient areas, required procedure reviews, and oral exams.

During the review of records and in discussions with the training supervisor and training instructors, the inspector determined that ten licensed operators were deficient in their weekly required reading, which is required by the licensee's requalification program; the licensee's procedure DPO-5, "Licensed Operator Continuing Training," and 10 CFR 55, Appendix A (review changes in facility license, design, and procedures). This is considered an item of noncompliance. (10/80-13-01, 237/80-14-01, 249/80-18-02)

No additional items of noncompliance were identified.

8. Onsite Review Committee

The inspector examined the onsite review functions conducted during the period January - July, 1980, to verify conformance with technical specifications and other regulatory requirements. This review included: changes since the previous inspection in the charter and/or administrative procedure governing review group activities; review group membership and qualifications; review group meeting frequency and quorum; and, activities reviewed including proposed technical specification changes, noncompliance items and corrective action, proposed facility and procedure changes and proposed tests and experiments conducted per 10 CFR 50.59, and others required by technical specifications.

No items of noncompliance were identified.

9. Inspection During Long Term Shutdown

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the month of July 1980. The inspector verified surveillance tests required during the shutdown were accomplished, reviewed tagout records, and verified applicability of containment integrity. Tours of Unit 1 accessible areas, including exterior areas were made to make independent assessments of equipment conditions, plant conditions, radiological controls, safety, and adherence to regulatory requirements and to verify that maintenance requests had been initiated for equipment in need of maintenance. The inspector observed plant housekeeping/cleanliness conditions, including potential fire hazards, and verified implementation of radiation protection controls. The inspector by observation and direct interview verified that the physical security plan was being implemented in accordance with the station security plan. The inspector reviewed the licensee's jumper/bypass controls to verify there were no conflicts with technical specifications and verified the implementation of radioactive waste system controls. The inspector witnessed portions of the radioactive waste systems controls associated with radwaste shipments and barreling.

No items of noncompliance were identified.

DETAILS

Section II

1. IE Bulletin 80-17 Testing Requirements for Unit 3

NRC inspectors witnessed scram testing required by IE Bulletin 80-17 at Dresden Unit 3. F. Reimann witnessed the manual scram initiated at 3:35 a.m., July 19, 1980; and J. Streeter witnessed the automatic scram initiated at 2:38 a.m. July 20, 1980.

a. Persons Contacted

B. Stephenson
T. Ciesla
M. Wright
R. Ragan

b. Manual Scram

Following the manual scram it was determined by ultrasonic testing (UT) techniques that portions of the 4" Scram Discharge Volume (SDV) piping serving the West bank of Hydraulic Control Units (HCU) were 80% filled with water approximately 15 minutes after the Scram Instrument Volume (SIV) level sensors indicated that the volume had been drained. UT examination of the SDV serving the East bank of HCU's indicated a drained condition. Immediate licensee evaluation of this occurrence determined that a 1" vacuum breaker valve was stuck in the closed position, apparently preventing the inflow of reactor building air into the SDV to facilitate draining. The vacuum breaker is one of two alternate vent paths installed in each portion (East and West) of the SDV. The alternate vent path penetrates the Reactor Building Equipment Drain System (RBEDS) collection piping. The stuck vacuum breaker was manually freed. An immediate detectable inrush of air was noted at the vacuum breaker valve and a SIV not drained alarm was received. Concurrent UT examination of the West portion of the SDV indicated a water level of 100% in the 4" piping (which was previously 80% full), and a level of approximately 50% was detected in the 8" piping which provides extra volume to the affected 4" SDV piping. The SDV vent and drain valves were closed in an attempt to trap the water for determination of total quantity. No water was collected, and it is assumed that a rapid drainage of the affected SDV piping occurred following freeing of the vacuum breaker.

Immediately following the above actions additional testing was conducted to determine the repeatability of the SIV level switches (as required by IEB 80-17). The initial test results indicated that 2 of the 4 redundant level switches which provide Reactor Protection System trip inputs were failed in an unsafe condition. At 6:32 a.m., the inspector notified IE:HQ via the Red Phone of existing data, and of the apparent failure of the SIV level switches. Additional testing of the level switches involving individual control rod scrams (vice pressurizing the SIV drain with a water hose) indicated that the level switches were operable and that earlier level switch failure indications were a result of an inappropriate test method. Multiple tests of the level switches were accomplished with no failures noted.

c. Modifications

The licensee, the NRC inspector, and the IE:HQ and Region III Response Center teams each concluded that further testing, data evaluation, and remedial action was required prior to returning the unit to criticality. It was determined that modifications to the SDV vent piping were required to provide a more positive vent path, which would promote improved drainage of the SDV. The vacuum breakers for both SDV vent headers were disassembled and cleaned to prevent further sticking. The alternate 1" vent piping for each SDV vent header was cut prior to their points of penetration into the RBEDS piping to provide a more positive vent capability.

The vent modifications were verified to be complete by the inspector prior to starting up the unit for subsequent automatic scram testing required by IEB 80-17. The equivalent vent piping installed on Unit 2 was also cut.

Except for items described above all equipment tested appeared to conform to design requirements. Testing results will be supplied to the NRC for evaluation as a part of the IEB 80-17 response, and the licensee has stated that further evaluation of testing results will be conducted by himself and the NSSS vendor.

d. Automatic Scram

Following the automatic scram it was determined by UT techniques that all portions of both the East and West SDV's were drained. Apparently, modifications to the SDV alternate vent piping corrected the drainage problem uncovered during the earlier manual scram test. The appropriate drainage time for the East SDV was 15 minutes and for the West SDV was 35 minutes. The West SDV has a much longer drain line than the East SDV and this probably accounted for much of the difference in drainage times.

During the SDV draining process, the SIV level alarms (high level, rod block, and scram) were observed to clear several minutes before the SDV was drained. The licensee stated that, even if the SIV alarms did not always give an accurate indication of the amount of water in the SDV, the recently instituted UT surveillance of the SDV is frequent enough to forewarn operators of developing problems before the water could reach a level in the SDV to prevent a scram.

No items of noncompliance were identified.

2. IE Bulletin 80-17 Testing Requirements for Unit 2

NRC inspectors witnessed scram testing required by IE Bulletin 80-17 at Dresden Unit 2. F. Reimann and R. Spessard witnessed the manual scram initiated on July 26, 1980, and R. Walker witnessed the automatic scram initiated on July 28, 1980.

a. Persons Contacted

J. Wujciga

b. Manual Scram

The test procedure previously used for Unit 3 testing was modified by the licensee to accumulate additional data not specifically required by IEB 80-17, but which would be of assistance in understanding the performance characteristics of the Scram Discharge Volume (SDV), including increased Ultrasonic Testing (UT) capability, a continuous UT monitor, and shutdown testing to determine the effectiveness of SDV vent piping modifications resulting from IEB 80-17 and the effectiveness of the vent piping vacuum breaker valves. Observations of equipment response and data collected appeared to be in accordance with design requirements and were predictable from data resulting from the previous Unit 3 testing. It was determined that the vent modifications and vacuum breaker valve assist in reducing the total time required for the SDV to drain following a scram. The longest SDV drain time observed following the manual scram was 58½ minutes for the east portion of the header (which has the longest drain and vent piping runs).

The inspectors found the test procedure and conduct of the test to be acceptable.

c. Automatic Scram

The automatic scram test was conducted in a similar fashion to the earlier manual scram and the Unit 3 automatic scram tests. The results were similar to those predicted following vent modifications required by IE Bulletin 80-17. The licensee has stated that the test data will be evaluated along with other

data collected as a result of IEB 80-17 required tests to develop a final analysis of SDV design adequacy and required improvements, if any. Extensive examinations and tests were conducted to verify that appropriate components were installed in the Backup Scram Valve and to verify that the valves are operable.

d. Other Observations

The following items which do not affect the tests witnessed were observed during the manual scram testing activities.

- (1) The control room Yarway type reactor vessel lower wide range water level instruments were indicating a 60" level disagreement between the 2 channels. The licensee stated that the normal indication for these instruments for operation at power with 100% core flow is 400 inches (offscale high). Channel A was indicating approximately 340 inches and Channel B 400 inches. The licensee stated that he will investigate this matter.
- (2) The control room Yarway type reactor vessel operating range level instruments (-60"-0-+60") were consistently indicating a disagreement of 8" to 12" in vessel level. Neither instrument agreed with the 2 redundant GEMAC level instruments (0-60" range), which agreed with each other. The locally mounted Yarway instruments which result in the control room indications appeared to be in agreement. The control room operator and shift supervisory personnel stated that this condition has existed for a significant period of time. Shift personnel stated that they would further investigate this matter for Units 2 and 3 (a similar instrumentation disagreement exists for Unit 3).

The Senior Resident Inspector reviewed Items (1) and (2) with the licensee subsequent to performance of the scram test, and the licensee committed to attempt to improve the agreement between local instruments and remote control room instruments. An instrumentation department work request has been prepared to assure followup on this item. The inspector has no further questions on this matter at this time.

No items of noncompliance were identified.

Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) through the month and at the conclusion of the inspection on August 1, 1980, and summarized the scope and findings of the inspection activities. The licensee acknowledged the item of noncompliance identified in Paragraph 7.