## U. S. NUCLEAR REGULATORY COMMISSION

# REGION III

Report Nos. 50-237/87017(DRP); 50-249/87016(DRP)

Docket Nos. 50-237; 50-249

License Nos. DPR-19; DPR-25

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

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

Inspection At: Dresden Site, Morris, IL

Inspection Conducted: May 15 through July 23, 1987

Inspectors: S. G. DuPont P. D. Kaufman

Approved By: M. A. Ring, Chief N. V. Hilles for Projects Section 1C

Date

## Inspection Summary

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Inspection during the period of May 15 through July 23, 1987 (Report Nos. 50-237/87017(DRP); 249/87016(DRP)).

<u>Areas Inspected:</u> Routine unannounced resident inspection of operational safety, followup of events, previous inspection items, I.E. Bulletins, management meeting, licensee's monthly operating report, licensee event reports, maintenance, surveillance and generic letters. <u>Results:</u> Of the nine areas inspected, no violations or deviations of NRC requirements were identified.

# DETAILS

#### 1. Persons Contacted

### Commonwealth Edison Company

\*E. Eenigenburg, Station Manager

- J. Wujciga, Production Superintendent
- \*R. Flessner, Services Superintendent
- T. Ciesla, Assistant Superintendent Planning
- R. Zentner, Assistant Superintendent Maintenance
- J. Brunner, Assistant Superintendent Technical Services
- J. Kotowski, Assistant Superintendent Operations
- R. Christensen, Unit 1 Operating Engineer J. Almer, Unit 2 Operating Engineer
- W. Pietryga, Unit 3 Operating Engineer
- J. Achterberg, Technical Staff Supervisor
- \*E. Armstrong, Regulatory Assurance Supervisor R. Geier, Q.C. Supervisor
- D. Sharper, Waste Systems Engineer
- D. Adam, Radiation Chemistry Supervisor
- J. Mayer, Station Security Administrator
- D. Morey, Chemistry Supervisor
- D. Saccomando, Radiation Protection Supervisor
- M. Jeisy, Q.A. Superintendent
- \*J. Williams, Regulatory Assistant
- \*R. Stols, Q.A. Engineer

The inspectors 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 23, 1987, and informally at various times throughout the inspection period.

#### 2. Review of Previous Inspection Items (92701, 92702)

(Closed) Unresolved Item (237/81009-06; 249/81006-06): Not all fire brigade members participate in at least two drills per year. Per EDE Letter 86-091 prepared by Dresden's Fire Marshall and approved by the Station Manager, starting on January 1, 1987, fire brigade members will participate in at least two drills per year. This item is considered closed.

(Closed) Unresolved Item (237/81009-07; 249/81006-07): Fire brigade training does not include the use of preplans or strategies for specific instruction and reference during an emergency. Dresden has developed Dresden Administrative Procedure (DAP) 3-1 controlling this subject. Preplans are now included in fire brigade training. This item is considered closed.



(Closed) Unresolved Item (237/81009-08; 249/81006-08): Hands-on fire fighting training was not held in 1980, deviating from the licensee's commitment to provide this training at least once per year for each brigade member. A hands-on training program was established in July 1986, with training being held at the Braidwood Station. This will ensure yearly training for each fire brigade member. This item is considered closed.

(Closed) Open Item (249/84018-01): Failure of Control Rod J-07 to Insert Upon a Scram Signal. The licensee had committed to remove and overhaul the control rod at location J-07 during the first refueling outage following the failure of the rod to insert on October 20, 1984. Control rod drive (CRD) J-07 was removed and replaced with a new control rod on June 6, 1986, and the old CRD was rebuilt on September 16, 1986. This item is considered closed.

(Closed) Violation (237/84026-01; 249/84023-01): The licensee failed to take proper and timely corrective actions on a self identified discrepancy. The inspector reviewed the licensee's corrective actions as follows. The licensee conducted a review for similar instances. The licensee also converted the existing commitment list generated by quality procedure QP 16-51, "Action Item Reports" into a computer based listing to track Quality Assurance and NRC inspection items. The inspector reviewed the computer based tracking program and found it to be adequate. In addition, the licensee has developed several other programs to improve the corrective actions applied to discrepancies, such as the personnel error reduction program which requires timely review of errors to determine proper and timely corrective actions. The inspector has found these programs to be effective and this violation is considered closed.

(Closed) Unresolved Item (010/85004-01; 237/85009-02): Battery procedures do not fully implement IEEE Standard 450-1975. This item was closed in inspection reports 010/85007, 237/85017 and 249/85015, but was not administratively documented. The inspector did, however, review the licensee's procedures for capacity testing (DOS 6900-2, 6900-5, 6900-6 and 6900-7), monthly and quarterly checks (DOS 6900-3 and 6900-4) and the annual determination of pilot cells (DTS 6900-1) and determined that the above procedures met the requirements and recommendations of the IEEE Standard and the vendor manual.

(Closed) Violation (237/85009-01): The licensee failed to meet Technical Specifications when the service water to the High Pressure Coolant Injection (HPCI) room cooler was found isolated. The room cooler is required for long-term cooling of the equipment in the HPCI room during accident conditions. The licensee locked open all associated service water valves to the room coolers and issued administrative procedures controlling these valves. The inspector reviewed the administrative procedures and verified that the valves were locked open. The inspector also determined that the licensee had not experienced other events with the room cooler's service water valves since implementation of the above corrective actions on May 9, 1985. This violation is considered closed.

(Closed) Violation (237/85038-01; 249/85034-01): Approved procedures were not used by Operational Analysis Department (OAD) personnel at the location where the activities were performed. The Dresden OAD files were purged of all the subject outdated procedures and a comprehensive search of all procedure files was conducted to ensure that no outdated procedures existed. In addition, a formal training session was conducted to provide instruction on using current, approved procedures and on the methods of controlling procedures to ensure that outdated procedures are not used in the field. The inspector found these actions to be adequate. This violation is considered closed.

(Closed) Violation (237/85038-02; 249/85034-02): As-found test result data was not recorded for relay surveillances by OAD personnel as required by procedures. Training was conducted to ensure that as-found data is recorded on surveillance data sheets. The inspector reviewed all surveillances conducted for Unit 2 in January 1987, and found them to be adequate. This violation is considered closed.

(Closed) Unresolved Items (237/85038-03; 249/85034-03): Documentation of OAD training does not contain supportive evidence of training subject matter in sufficient detail to determine training adequacy. The inspector reviewed several recent OAD training sessions and found the documentation to be adequate. This item is considered closed.

(Closed) Unresolved Item (237/85038-04; 249/85034-04): OAD to determine and define the hierarchy of procedures used to perform prescribed activities. The licensee defined the CECo Quality Assurance Manual as the governing document with all other procedures as implementing procedures as follows: The Electrical Construction Test Procedures (ECTP) are used for construction and modification testing. Site-specific procedures, such as, administrative procedures are used to implement controls of testing and work activities. The inspector reviewed several ECTPs and administrative procedures and found them adequate in defining procedural hierarchy and controls. This item is considered closed.

(Closed) Unresolved Item (237/85038-05; 249/85034-05): OAD personnel had not received training on applicable station administrative procedures and revisions. The inspector verified by review of training documentation that training had been conducted on station administrative procedures and revisions. This item is considered closed.

(Closed) Unresolved Item (237/85038-06; 249/85034-06): OAD personnel utilized an unapproved guideline to accomplish modification planning and administrative activities. The inspector reviewed the approved formal guideline and found it to be adequate. This item is considered closed.

(Closed) Unresolved Item (237/85038-07; 249/85034-07): OAD is to define and establish the original relay settings into the current established program. The inspector verified that the original relay settings had been incorporated in the current program by reviewing several of the relay setting documents. This item is considered closed.

(Closed) Violation (237/85038-08; 249/85034-08): ECTPs used for post maintenance/modification testing were not approved by Dresden onsite review. The inspector verified that the ECTPs were approved for Dresden usage by reviewing several Dresden Station Assignment Forms, DAP 10-1, which documented the station approval. This violation is considered closed.

(Closed) Violation (249/85009-02): Licensee failed to maintain primary containment integrity. On March 2, 1985, the licensee found a torus water sample line open, allowing a direct flow path from the primary to the secondary containment through the reactor building floor drain sump. In April 1985, the licensee implemented administrative procedures controlling system valve lineups. The inspector reviewed these procedures and found them to be adequate. In addition, the inspector has determined that the recent implementation of the error free operation program has prevented recurrence of similar events. This violation is considered closed.

(Closed) Violation (249/85009-03): The Unit 3 Low Pressure Emergency Core Cooling Systems were inoperable during the Unit 2 surveillance DOS 6600-5, "Bus Undervoltage and ECCS Integrated Functional Test for Unit 2(3) Diesel Generator," because of mislabeling in the procedure. The Unit 2 and 3 diesel generator and bus undervoltage surveillance procedures had been rewritten into separate procedures for Unit 2 and 3. The inspector determined that the separation of the procedures for respective units has reduced personnel errors of this type. This violation is considered closed.

No violations or deviations were identified in this area.

### 3. IE Bulletin Followup (92703)

Each of the following IE Bulletins was reviewed by the Resident Inspector to determine if: (1) the licensee's written response was submitted within the time limitations stated in the bulletin, (2) the written response included all information required to be reported, (3) the written response included adequate corrective action commitments based on information presented in the bulletin and the licensee's response, (4) licensee management forwarded copies of the written response to the required onsite management representatives, (5) information discussed in the licensee's response was accurate, and (6) the corrective action taken was as described in the response.

(Closed) IE Bulletin 84-02, Revision 0 (249/84002-BB): "Failures of General Electric Type HFA Relays in Use in Class 1E Safety Systems".

Dresden's response dated July 11, 1984, committed to several short and long term corrective actions which included replacement of all nylon or lexan coil spool-type normally energized or de-energized HFA relays used in Class IE safety systems by the completion of the 1985 refueling outage. The inspector verified that all corrective actions have been completed.

# (Closed) IE Bulletin 86-01, Revision 0 (010/86001-BB; 237/86001-BB): "Minimum Flow Logic Problems That Could Disable RHR Pumps".

The inspector reviewed the licensee's responses of May 30 and June 23, 1986, and General Electric's (GE) safety evaluation of May 28, 1986. The May 30, 1986, response identified that the problem of disabling the Low Pressure Coolant Injection (LPCI) pumps on a single failure of a flow sensing instrument during an intermediate size loss of cooling accident line break does exist at Dresden (the bulletin addressed RHR pumps being disabled, however, Dresden has LPCI instead of RHR). The GE safety evaluation also identified LPCI as being affected by the single failure, however, the evaluation demonstrated that this failure will not exceed the peak cladding temperature (PCT) limit for fuel failure and as such, is not considered to be the limiting event for the plant.

GE also recommended as a potential modification, the removal of the closing signal from the minimum flow bypass valves. This will result in some of the LPCI flow being diverted through the minimum ... flow line. The evaluation also addressed the diversion of flow. and determined that, in the case of a large break event (more conservative than the intermediate break case of the bulletin) and diesel generator failure, the most limiting accident break (DBA) is still assumed to be single failure of the LPCI injection valve (assuring no LPCI injection flow).

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The licensee completed all required short-term corrective actions, including issuing a standing order to the operators which states, "On any automatic initiation, verify the minimum flow valve is opened if there is no flow through the pump. If the minimum flow valve is failed closed with the pumps dead headed, . . . open the test (return) valves." The inspector finds these actions to be adequate as short-term corrective actions to prevent disabling the LPCI pumps.

The licensee has also completed long-term corrective actions on Unit 2 by modifying the minimum flow valve closing air circuits as recommended by GE during the last unit outage. Unit 3 is scheduled to be modified in the fall of 1987. The above corrective action appears to be adequate, however, closure of this bulletin will not be completed until final modifications of Unit 3 are completed during the 1987 refueling outage. 249/86001-BB is still open pending Unit 3 modifications.

No violations or deviations were identified in this area.

#### 4. Operational Safety Verification (71710, 71814, 71846, 71707)

The inspectors observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the

inspection period. The inspectors verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of Units 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 inspectors, by observation and direct interview, verified that the physical security plan was being implemented in accordance with the station security plan.

The inspectors observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. These inspectors noted that improvements had been made in the area of housekeeping and cleanliness of the buildings, systems and components. During the inspection, the inspectors walked down the accessible portions of the systems listed below to verify operability by comparing system lineup with plant drawings, as-built configuration or present valve lineup lists; observing equipment conditions that could degrade performance; and verified that instrumentation was properly valved, functioning, and calibrated.

The inspectors reviewed new procedures and changes to procedures that were implemented during the inspection period. The review consisted of a verification for accuracy, correctness, and compliance with regulatory requirements.

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.

The following systems were inspected:

Low Pressure Coolant Injection System Core Spray System Feedwater System

No violations or deviations were identified in this area.

# 5. Followup of Events (92700)

During the inspection period, the licensee experienced several events, some of which required prompt notification of the NRC pursuant to 10 CFR 50.72. The inspectors pursued the events onsite with licensee and/or other NRC officials. In each case, the **inspectors** verified that the notification was correct and timely, if appropriate, that the licensee was taking prompt and appropriate actions, that activities were conducted within regulatory requirements and that corrective actions would prevent future recurrence. The specific events are as follows: a. Unit 3 - At 2:55 a.m. (CDT), on May 12, 1987, while operating at 99% power, the reactor scrammed on low reactor water level. The scram occurred when the "C" condensate booster pump tripped on overcurrent, causing the feedwater pumps to trip on low suction pressure. The standby booster pump automatically started per design, but did not achieve full speed in time to prevent the feedwater pumps from tripping on low suction. The unit was successfully placed in hot shutdown.

- b. Unit 3 At 1:16 a.m. (CDT), on July 8, 1987, while operating at 98% power, the "3C" containment cooling service water pump failed the Technical Specification required surveillance. The surveillance was being performed because the 2/3 Diesel Generator was inoperable for biennial inspection. Technical Specification 4.5.B.1.B requires pump discharge pressure to be greater than 180 psig, however, the pump discharge pressure was only 176 psig. The licensee declared an Unusual Event and commenced an orderly shutdown. ENS notification was made at 1:22 AM. The licensee investigated the instrumentation and found that the flow transmitter was deviating at about 150 GPM. The instrument was calibrated and the surveillance was re-preformed with satisfactory results. At 3:35 a.m., the Unusual Event was terminated.
- c. Unit 2/3 At 4:00 a.m. (CDT), on May 26, 1987, the NRC Duty Officer contacted Dresden via commercial telephone lines and informed the licensee that the Dresden ENS was inoperable. Dresden made the required one hour notification via commercial telephone lines by 4:50 a.m.
- Unit 3 At 10:12 a.m. (CDT), on June 26, 1987, while operating at d. approximately 95% power, the licensee took the "3A" Low Pressure Coolant Injection (LPCI) room cooler out of service to replace belts on the motor as a preventive maintenance item. This cooler is required for long term cooling of the east LPCI room during accident conditions. Because of this, the 3A and 3B LPCI pumps and the 3A Core Spray (CS) pump are considered inoperable during the time that the room cooler is out of service. Technical Specification 3.5.A.7 requires that an orderly shutdown be commenced and the unit be placed in cold shutdown within 24 hours with these pumps inoperable. However, since the belt replacement was expected to take only 1 or 2 hours and these pumps remained in service and would operate if required to do so, the licensee did not commence an orderly shutdown with concurrence of the NRC resident inspectors and regional supervision. The belts were replaced and the LPCI and CS systems declared operable at 12:10 p.m. The resident inspectors monitored the licensee's actions throughout the event.
- e. Unit 2/3 At 6:49 p.m. (CDT) on June 10, 1987, a widely felt earthquake in the midwest occurred. According to the U.S. Geological survey it measured 5.0 on the Richter scale and was centered in southeastern Illinois. The licensee declared an

Unusual Event at 8:07 p.m., and terminated the event at 9:05 p.m., after developing the film from the seismograph instrument. The instrument trip setpoint is .05g. The developed film showed no indications of a seismic occurrence.

Unit 3 - On July 11, 1987, at 2:10 a.m. (CDT), while reducing generator load to take the turbine off-line in order to replace a main generator neutral grounding transformer lead, the licensee experienced an automatic scram from 25% power. The 3A reactor feed pump and the 3A feedwater regulating valve were in service with feedwater level control in 3 element. Feed flow increased from 2.2 million pounds per hour to 5.6 million pounds per hour. The feedwater flow increase has been attributed to a 3A feedwater regulating valve failure. Apparently, operating in 3 element control with low steam flow/feed flow caused a feedwater and pressure perturbation of the feedwater piping system which caused the valve positioner spring on the 3A feedwater regulating valve to break. The Reactor Operator placed the feedwater level control in single element but was unable to stop the increase in the reactor water level before an automatic turbine trip occurred at +55 inches. The turbine trip generated vibrations of the main steam piping, resulting in the closure of all Main Steam Isolation Valves, which caused an automatic reactor scram. The vibration also caused asbestos insulation to detach from system piping. A detailed and complete system walkdown revealed no structural damage to the piping or system components. Disassembly and inspection of both 3A and 3B feedwater regulating valves disclosed no internal damage or foreign material. The dislodged asbestos insulation is being cleaned up and repaired/replaced as necessary. The licensee's investigation of all affected systems and components has been completed and revealed no piping or component damage. The unscheduled unit shutdown exceeded 48 hours. The licensee's corrective actions included the following:

- 1. Training (At the start of each shift)
  - Event
    Lessons Learned

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- Corrective Actions
- 2. Administrative Controls on single element vs. three element control.
- 3. Use of FW Reg Valves on startup and shutdown (long term).
- 4. Determine proper vibration setpoints (long term).
- 5. Investigate additional rack support for MSL pressure switches.

6. Evaluate replacement of Copes-Vulcan FW Reg Valves with Drag Valve.

7. Recommendations and conclusions from FW system walkdown.

(a) Inservice Leak Check

(b) FW Reg Station snubber surveillance

(c) Feedwater pump vibration measurements

The turbine was tied to the grid again at 6:26 a.m. (CDT) on July 17, 1987.

- g. Unit 2 At 4:00 a.m. (CDT), on July 13, 1987, the licensee declared an Unusual Event. The 7 day Limiting Condition for Operation of the Unit 2/3 Emergency Diesel Generator, which was taken out of service on July 6, 1987, at 4:30 a.m. for a biennial inspection, could not be met. The licensee commenced an orderly shutdown from 68% power and ENS Notification was made at 4:30 a.m. The Unusual Event was terminated at 6:00 a.m., when the 2/3 Emergency Diesel Generator was proven operable.
- h. Unit 2 - On July 17, 1987, at 11:58 p.m. (CDT), while operating at 80% power, Unit 2 reactor scrammed on low reactor water level. Cause of the scram was due to a "2B" feedwater regulating valve closure. The alarm received in the control room was "Loss of Air to FW Reg. 642B". At the same time, the operator observed all 4 controller valve demand signals and valve positions indications to be zero (locked-out). The Feedwater Low Flow valve did not respond in auto even though reactor water level indication was -30 inches. The valve responded when the operator changed from auto to manual control. Then the operator reset the lockout on the "2B" Feedwater Regulating valve and the valve opened. Previously, the "2A" Feedwater Regulating valve was taken out of service prior to the scram because it failed to fully close when called for by the demand signal. Failure of the "2A" valve has been attributed to the manual actuator on the valve operator which was fully driven into the positioner, thus preventing retraction of the jack-screw assembly. The manual actuator has now been removed from the "2A" Feedwater Regulating Valve. The licensee's investigation into the route cause of the "2B" valve failure has discovered no abnormalities with either the controller or the valve operator. The licensee has been unable to reproduce the "2B" Feedwater Regulating Valve scenario.

The unit was made critical again at 3:50 a.m. on July 20, 1987, but the MSIVs remained closed while work was completed on the #1 Control Valve and #3 Combined Intermediate Valve.

The Resident Inspector had not been duly informed of this event until 2:00 p.m. on July 18, 1987, by the Station Manager. The Station Manager was advised about timeliness in notifying the resident inspectors.

No violations or deviations were identified in this area.

Monthly Maintenance Observation (62703, 71710)

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Station maintenance activities of safety related systems and components listed below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with technical specifications.

The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and, fire prevention controls were implemented. Work requests were reviewed to determine status of outstanding jobs and to assure that priority is assigned to safety related equipment maintenance which may affect system performance.

The following maintenance activities were observed/reviewed:

- "2D" Condensate Pump Repair oil leak from outboard booster pump seal.
- "3A" HPCI Room Cooler Replace fan belts.
- "2A" Feedwater Regulating Valve Remove manual actuator from valve operator.
- 2/3 Diesel Generator Biennial Inspection.

No violations or deviations were identified in this area.

7. Monthly Surveillance Observation (61726)

The inspectors observed surveillance testing required by technical specifications for the items listed below 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. The inspectors witnessed portions of the following test activities:

Unit 3

DIS - 4400-1 Condenser Pit High-High Water Level Switch Calibration Check

DOS - 1500-3 Containment Cooling Service Water Pump Test

No violations or deviations were identified in this area.

## 8. Licensee Event Reports Followup (93702)

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

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(Closed) (82058-03): The licensee issued a Licensee Event Report (LER) on a leak in an 8 inch reactor water cleanup pipe on January 19, 1983, with a supplemental report pending the determination of the cause of the leak. The inspector reviewed the supplemental report and found the cause determination and corrective actions of replacing the affected pipe section to be adequate and consider this item to be closed.

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(Closed) (83067-03): The LER issued on October 21, 1983, did not contain a cause code determining the reason that a Rod Block Monitor Channel failed. Subsequent reviews determined that the failure was caused because an incorrect fuse rating was used. The licensee was unable to determine if the incorrect fuse had been installed initially or during replacement maintenance. The licensee did, however, verify correct fuse rating usage in all neutron monitoring channels. The inspector reviewed these corrective actions and found them to be adequate. This item is considered to be closed.

(Closed) (83082-03): The licensee is to complete the investigation into the cause of the failure of the protective half-scram circuit during closure testing of a Turbine Control Valve (TCV-4). The licensee installed a recorder to monitor the valve position and test switch operation while repeating the test on TCV-4. During several cycles of the valve, the circuit failure did not recur. The licensee determined that the failure on December 25, 1983, was a spurious failure. Additionally, the problem has not repeated since 1983. This item is considered to be closed.

(Closed) (85012-00): During the review of LER 85-012-0, the inspector was unable to determine if a second reactor scram occurred on March 9, 1985, because of a failure on the Reactor Protection

System power supply Motor-Generator (MG) set. The inspector reviewed the deviation report (12-2-85-27) and the LER. This review and discussions with the personnel involved with the occurrence on March 9, 1985, determined that the second scram discussed in the deviation report was the trouble shooting process discussed in the LER. Since the scram was done to determine the cause of the first failure, a separate LER is not needed. The inspector considers this issue to be closed.

(Closed) (85034-00): The LER describing the reactor low water level scram on August 16, 1985, due to a loss of offsite power did not contain an adequate cause code. Further review of the event did determine that the documented cause code was adequate and no further actions are required. This issue is considered to be closed.

(Closed) 85044-01: Unit 2 and 2/3 Diesel Generators (D/G) Inoperable Due to a Damaged Power Cable of the 2/3 D/G Cooling Water Pump and Subsequent Failure of Unit 2 D/G Turbocharger While Testing. The power cable to the 2/3 D/G cooling water pump was discovered damaged during normal operating routines. The 2/3 D/G was declared inoperable and an operability test was performed on the Unit 2 D/G. While taking this unit off-line, the equipment operator heard unusual noises at the turbocharger. After 8 minutes into a second surveillance test, the noises recurred and the Unit 2 D/G was tripped. Repairs were made to the damaged power cable and surveillance tests were performed successfully on the 2/3 D/G and it's cooling water pump. This item is considered to be closed.

(Closed) 86024-01: Loss of Unit 2/3 Main Chimney Sample Flow Due to Water Existing in the Separate Particulate Iodine and Noble Gas (SPING) Filters. In addition, Unit 2/3 main chimney continuous particulate and iodine samples were not taken for approximately 5.1 hours. An alternate sample system was manually started. In order to prevent future occurrences, a review of previous events and Technical Specifications by all Radiation Chemistry Technicians was conducted. This item is considered to be closed.

(Closed) 87001-00: Hourly Inspection For the East End of the Unit 2/3 Cable Tunnel Not Established Immediately per Technical Specification 3.12.C.1 due to Operating Personnel Error. With Unit 3 in the "run" mode and Unit 2 in refuel, a station construction foreman requested the east end of the Unit 2/3 cable tunnel suppression system be taken out of service so non-station contractors could modify plant suppression systems. Because the Fire Marshall was unavailable, the Unit 1 operating engineer was contacted regarding an area hourly fire inspection. He determined that the hourly inspection was not required by Unit 2 Technical Specifications, Table 3.12.2. However, Unit 3 Technical Specifications 3.12.C.1 and Table 3.12.2, required an hourly fire inspection. Following discussions with the Fire Marshall the next day, an hourly fire inspection was established. This item is considered to be closed. (Closed) 87006-01: Reactor Scram During Refueling Due to Motor Control Center (MCC) 28-2 Main Feed Breaker Trip From an Unknown Cause. Loss of MCC 28-2 caused loss of instrumentation that resulted in a Group II isolation. Loss of MCC 28-2 also caused loss of the 2A Reactor Protection System (RPS) Motor-Generator (MG) set, which feeds the 2B RPS Bus. The 2A RPS MG set and the main feed breaker of MC 28-2 were tested, found acceptable, and placed back in service. This item is considered to be closed.

(Closed) 87008-00: Reactor Scram Due to Personnel Error While Installing Jumper. While performing Dresden Operating Surveillance (DOS) 6600-5, Bus Undervoltage and Emergency Core Cooling System (ECCS) Integrated Functional Test for Unit 2 Diesel Generator a full scram signal occurred with Unit 2 in the shutdown mode. The scram was the result of improperly placing jumpers during the surveillance. Electricians replaced leads and the scram signal was reset. This item is considered to be closed.

(Closed) 87009-00: Failure of Unit 2 Diesel Generator (D/G) Output Breaker to Close During Surveillance Due to a Failed Auxiliary Contact Switch. While performing the Emergency Core Cooling System integrated undervoltage test, the Unit 2 D/G started, but the output breaker would not close. The proximate cause was the failure of the auxiliary contact switch of breaker 2432 to return to its normal state. The defective switch was replaced and the D/G output breaker was demonstrated to function properly. This item is considered to be closed.

(Closed) 87011-00: Failure to Maintain Continuous Fire Watch In the Auxiliary Electric Room Due to Personnel Error. Due to inadvertent actuation of the Auxiliary Electric Equipment Room (AEER) Halon System, a continuous firewatch had to be posted until the halon bottles could be recharged. After discovering that the stationman performing the firewatch had left his post, an operator was promptly posted in the AEER to resume the firewatch. This item is considered to be closed.

(Closed) 87012-00: High Pressure Coolant Injection (HPCI) System Turbine Trips Due to Hydraulic Control System Problems. While conducting startup operations, the Reactor Operator observed via an indicating light that the HPCI turbine was not reset. A unit shutdown to hot standby had been initiated due to a problem with the Main Turbine Seal Steam System. A loose hydraulic control system pressure switch contactor arm caused the erroneous indication. Subsequently, the HPCI turbine tripped while being brought to speed following repairs to the pressure switch. Premature tripping of the HPCI auxiliary oil pump caused the HPCI turbine to trip. Corrective actions included inspection, testing, and adjustment of turbine hydraulic control system components. This item is considered to be closed.

(Closed) 87013-00: Unit 2 Source Range Monitor Nos. 21, 22, and 23 Exceeded the Technical Specification Rod Block Setting Due to

Instrument Drift. The Rod Block Setpoints were adjusted within the appropriate limits and tested satisfactorily. A periodic SRM calibration check will continue to be performed as required. This item is considered to be closed.

(Closed) 87014-00: Missed Four Hour Reactor Coolant Sample Due to Procedural Inadequacy. While performing startup operations at 1% rated thermal power and with the Reactor Water Cleanup System, (RWCS) isolated for repairs, reactor coolant samples were being taken on 4 hour intervals using the High Radiation Sample System (HRSS) as required by Technical Specifications. During the course of this evolution, the Radiation Chemistry Technician (RCT) was unable to obtain a scheduled sample due to a procedural inadequacy. The RCT was unable to properly reset two isolated reactor coolant module isolation valves on the HRSS. The valves were reset after troubleshooting by the Radiation Chemistry Foreman and the Duty Chemist. The sample was later obtained. This item is considered to be closed.

(Closed) 87015-00: Failure to Calculate Drywell Floor and Equipment Leakage Values on a Four Hour Interval Due to Personnel Error. With startup operations in progress, the drywell floor and equipment drain sumps were not pumped at the time required by Technical Specifications. Approximately 1.2 hours after the required pumping time, the sumps were pumped and the leakage rates were found to be below Technical Specification limits. This item is considered to be closed.

(Closed) 87016-00: Reactor Scram Due to Reactor Low Water Level Resulting From Component Failure. Review of this event is documented in Region III Inspection Reports 50-237/87007 and 50-249/87006, Paragraph 5.d. This item is considered to be closed.

(Closed) 87017-00: Embedment Plate for Support Number M-3210-03 in Excess of Final Safety Analysis Report (FSAR) Design Limits Due to Apparent Original Construction Oversight. This support is an attachment point for a snubber on line 2-1601-20"-LX, which is a part of the Torus to Reactor Building Vacuum Relief System. The embedment plate was reinforced prior to completion of the final load assessment on the embedment plate, which indicated that even though the FSAR design limits were exceeded, the piping would have remained operable under all design basis. This item is considered to be closed.

(Closed) 87018-00: Inoperable High Pressure Coolant Injection (HPCI) System Room Cooler Due to Broken Drive Belts Caused by Normal Wear. The unit was operating at 88.7% power. Since the room cooler is required to support long term HPCI operation, the HPCI system was declared inoperable. A GSEP Unusual Event was declared and a reactor shutdown was initiated because the Unit 2 Diesel Generator was out of service for routine maintenance. Corrective actions included replacing the broken drive belts. This item is considered to be closed. (Closed) 87019-00: Improperly Located Fire Break Near Cable Tray Routing Point 192B Due to Design Error. During a review of questions concerning a fire stop/break surveillance, architect-engineer personnel determined that the fire break installed between cable tray routing points 191B and 192B should instead be located between routing points 192B and 193B to provide separation of Division I and II cables. An NRC Safety Evaluation Report (SER) dated March 1978 included requirements to place additional fire steps (breaks) between divisions. The root cause of this discrepancy is that Division I was rooted at point 192B rather than Division II as originally shown on revisions of drawing 12E-2052 dated prior to February 3, 1987. Corrective actions included moving the existing fire break to a location between routing points 192B (Division I) and 193B (Division II) and below an existing fire break between routing points 192T and 193T. This item is considered to be closed.

(Closed) 87020-00: Inoperable Continuous Particulate Sample Collector Due to Torn Filter: While Unit 2 was at 78% power and Unit 3 at 100% power, it was discovered that the Unit 2/3 Main Chimney Separate Particulate Iodine and Noble Gas (SPING) Sampler had been in a potentially degraded condition for approximately 6 days. The particulate filter paper was torn and did not appear to have collected a normal amount of sample. The cause of this event had been attributed to the Radiation Chemistry Technician (RCT) inadvertently damaging the filter paper while installing it. A stronger nylon-type filter is now in use. Also, isotopol calculations of the previous and following week's sample showed levels all well below allowable effluent release limits. The on-site Dose Calculation Manual permits the averaging of these samples to estimate the release for the week that the sampler was inoperable. This item is considered to be closed.

(Closed) 87021-00: Failure to Place Condenser Pit Level Switch LS-2-4441-24B in a Tripped Condition Due to Personnel Error. While performing instrument surveillance (DIS) 4400-1, "Condenser Pit High-High Water Level Switch Calibration Check" at 1115 hours on June 16, 1987, Level Switch LS-2-4441-24B did not activate the control room alarm. The failed circuit was not immediately placed in the tripped condition as required by Technical Specifications 3.5.L.2. Upon identification of the error, the failed circuit was then placed in a tripped condition 26 hours and 45 minutes following initial discovery of the inoperative alarm circuit. The level switch had a broken lead which prevented the activation of the Control Room alarm. The lead was repaired on the level switch. Even though this event is a violation of a Technical Specification, whereas the Action Statement was not specifically satisfied, no Notice of Violation is being issued since the incident was self-identified and meets the criteria for a Severity Level IV violation and the other criteria of 10 CFR 2, Appendix C. This item is considered to be closed.

### Unit 3

(Closed) 86026-00: Primary Containment Oxygen Concentration in Excess of 4% for Greater Than 24 Hours With the Mode Switch in "Run" Due to Personnel Error. Deinerting of the primary containment drywell was initiated to allow a drywell entry. The Nuclear Station Operator (NSO) performing the inerting was aware that the torus portion of the primary containment had not been deinerted along with the drywell and assumed torus oxygen concentration was below 4%. The NSO proceeded to inert the drywell without checking the torus oxygen concentration, which had exceeded 4%. The NSO bypassed the primary containment torus oxygen analyzer sample point as per procedure but failed to check torus oxygen concentration prior to bypassing the sample point. Upon completion of drywell inerting, the torus oxygen sample point was placed back in service and the high oxygen alarm was discovered. Oxygen content was restored below 4% approximately 33.6 hours later. This item is considered to be closed.

(Closed) 87004-00: Fuel Pool Area Radiation Monitor RM 1705-16A Setpoint Exceeded Technical Specification Limit Due to Instrument Setpoint Drift. While in the startup mode the upscale trip setpoint for the refuel floor fuel pool area radiation monitor exceeded Technical Specifications. The setpoint for the monitor was readjusted and verified operable. The cause of the event was attributed to setpoint drift. This item is considered to be closed.

(Closed) 87006-00: Reactor Scram During Power Operation Due to a Load Reject Signal Resulting From Personnel Error Cabinet Vibration. Onsite followup review of this event was conducted and the results are documented in Region III Inspection Reports 50-237/87007 and 50-249/87006, Paragraph 5.j. This item is considered to be closed.

(Closed) 87007-00: Turbine Building and Reactor Building Interlock Doors Opened Simultaneously Due to a Blown Fuse in the Unit 3 Turbine Building Interlock Door Magnet Circuitry. With the Reactor at 75% power, the turbine building electromagnetic interlock door independently swung open as contractors were exiting the reactor building electromagnetic interlock door. The problem was traced to a blown fuse which was replaced. This item is considered to be closed.

(Closed) 87008-00: Reactor Scram While Unit was Shutdown Due to Low Reactor Water Level Resulting From Procedural Inadequacy and Component Failure. Onsite review of this event was performed and results documented in Region III Inspection Reports 50-237/87007 and 50-249/87006, Paragraph 5.j. The report date on the LER form was missing. A supplemental LER was issued to add this information. This item is considered to be closed.

(Closed) 87008-01: Reactor Scram While Unit was Shutdown Due to Low Reactor Water Level Resulting From Procedural Inadequacy and Component Failure. This supplemental LER was issued to provide missing information on the LER cover sheet and correct a typographical error. The LER report date which was the missing information was entered on the LER cover sheet. This item is considered to be closed.

(Closed) 87010-00: Manual Reactor Scram Due to High Condensate Temperature and Main Condenser Low Vacuum Caused By Broken Turbine Bearing Water and Oil Drain. At approximately 43% power, the reactor was manually scrammed due to a high condensate demineralizer inlet temperature of 130°F and main condenser low vacuum decreasing to 23 inches of mercury. The cause of the event was component failure. The "C" low pressure turbine bearing cone waste water and oil drain to the Turbine Building equipment sump was broken in the condenser. The turbine bearing cone drains were cut and plugs installed at the inlet and outlet for each low pressure turbine bearing cone. This item is considered to be closed.

(Closed) 87011-00: Reactor Scram Due to Loss of Normal Feedwater as a Result of 3C Condensate Booster Pump Motor Failure. During normal operation at 99% power, an automatic reactor scram, along with Group II and Group III primary containment isolations, was received from a low reactor water level signal. Prior to the scram, the reactor feed pumps automatically tripped on low suction pressure, after which reactor water level decreased to the low level setpoint. The root cause of this event was due to an overcurrent trip on the 3C condensate booster pump. The booster pump motor was subsequently replaced. This item is considered to be closed.

No violations or deviations were identified in this area.

## 9. Review of Generic Letters (92703)

The inspector reviewed the following Generic Letters to determine whether the licensee has a system in place for the appropriate handling of Generic Letters and the information discussed in the Generic Letter has been addressed by the licensee. The review found that the licensee had adequately addressed these Generic Letters:

<sup>o</sup> Generic Letter 87-06, dated March 13, 1987, "Periodic Verification of Leak Tight Integrity of Pressure Isolation Valves."

The Generic Letter requested submitting of a list of all pressure isolation valves, including a description of the periodic testing performed to assure the integrity of the valves as an independent barrier at the reactor coolant pressure boundary (RCPB) along with the acceptance criteria and frequency of the test performance.

The inspector reviewed the licensee's submittal dated June 11, 1987, and found it to be adequate. The submittal documented 17 air-operated, motor-operated and check valves with prescribed acceptance criteria, frequency and method of testing.

<sup>o</sup> Generic Letter 85-07, dated May 2, 1985, "Implementation of Integrated Schedules for Plant Modifications."

The Generic Letter requested information concerning the development of an integrated schedule for modifications. The licensee, in response on August 29, 1985, stated intentions of developing an integrated schedule for implementation at the Zion station. Following this experience, and after any needed changes to the methodology used by the program, a prioritization methodology will be implemented at the Dresden station.

The inspector reviewed the August 29, 1985, submittal and found it to be adequate.

Generic Letter 84-23, dated October 26, 1984, "Reactor Vessel Water Level Instrumentation in BWRs."

The generic letter requested a description of Dresden's plan for improving reactor vessel water level instrumentation.

The inspector reviewed the licensee's response dated December 19, 1984. The licensee stated that major improvements have been and will be made by replacing mechanical level indicators with analog equipment. The licensee also stated that the protection system logic is designed to initiate full protective action on any water level instrument reference leg break. The inspector found the response to be adequate and has observed the replacement of mechanical indicators with analog equipment.

The following Generic Letters did not require a response from the licensee and as such, were only for information. The inspector verified that the Generic Letters had been received and evaluated by the licensee for applicability to Dresden Units 2 and 3.

### Generic Letters

85-03	January 28, 1985 -	"Clarification of Equivalent Control Capacity for Standby Liquid Control Systems."
85-06	April 16, 1985 -	"Quality Assurance for ATWS Equipment That is not Safety-Related."
85-13	August 5, 1985 -	"Transmittal of NUREG-1154 Regarding the Davis-Besse Loss of Main and Auxiliary Feedwater Event."
85-14	August 1, 1985 -	"Commercial Storage at Power Reactor Sites of Low-Level Radioactive Waste Not Generated by the Utility."
85-22	December 3, 1985 -	"Potential for Loss of Post-LOCA Recirculation Capability due to Insulation Debris Blockage."

86-02 January 23, 1987 - "Technical Resolution of Generic Issue B-19 Thermal Hydraulic Stability."

Closure of the above Generic Letters completes the inspection requirements of the following tracking items:

237/84023-HH,	249/84023-HH,	237/85003-HH,	249/85003-HH,
237/85006-HH,	249/85006-HH,	237/85007-HH,	249/85007-HH,
237/85013-HH,	249/85013-HH,	237/85014-HH,	249/85014-HH,
237/85022-HH,	249/85022-HH,	237/86002-HH,	and 249/86002-HH.

No violations or deviations were identified in this area.

### 10. Management Meetings (30703)

A management meeting was held on May 29, 1987, at the NRC Region III Office in Glen Ellyn, Illinois. The meeting was to discuss recent performance at the Dresden facility.

An enforcement conference was held on June 4, 1987, at the NRC Region III Office. The enforcement meeting was to discuss environmental qualification issues at Dresden and Quad Cities.

### 11. Report Review (90713)

During the inspection period, the inspectors reviewed the licensee's Monthly Operating Report for May and June, and, in addition, the Dresden Station's operating data for the year 1986. The inspectors confirmed that the information provided met the requirements of Technical Specification 6.6.A.3 and Regulatory Guide 1.16.

### 12. Exit Interview (30703)

The inspectors met with licensee representatives (denoted in Paragraph 1) informally throughout the inspection period, and at the conclusion of the inspection on July 23, 1987, and summarized the scope and findings of the inspection activities.

The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the

inspector during the inspection. The licensee did not identify any such documents/processes as proprietary. The licensee acknowledged the findings of the inspection.



