

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

REGION III

Report No. 50-331/81-05

Docket No. 50-331

License No. DPR-49

Licensee: Iowa Electric Light and Power Company
P. O. Box 351
Cedar Rapids, IA 52406

Facility Name: Duane Arnold Energy Center

Inspection At: Duane Arnold Energy Center, Palo, IA

Inspection Conducted: March 1-31, 1981

Inspectors: *W. F. Christianson*

L. S. Clardy

Approved By: *W. S. Little*, Chief
Reactor Projects Section 2C

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Inspection Summary

Inspection on March 1-31, 1981 (Report No. 50-331/81-05)

Areas Inspected: Routine inspections, review and observations of plant operations and maintenance, procedures, documentation and work performed. The inspection involved 273 inspector-hours onsite by two NRC inspectors including 24 inspector-hours onsite during off-shifts.

Results: Of the areas inspected, one item of noncompliance was identified. (Failure to make a one-hour telephone notification of an unplanned radiation release.)

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DETAILS

1. Persons Contacted

- *D. Mineck, Chief Engineer
- *D. Wilson, Assistant Chief Engineer Operations, Acting
- *J. Vinquist, Assistant Chief Engineer Technical, Acting
- B. York, Outage Manager
- *D. Teply, Operations Supervisor
- C. Mick, Assistant Operations Supervisor
- *K. Young, Radiation Protection Engineer
- *B. Dye, Assistant Radiation Protection Engineer

In addition, the inspectors interviewed several other licensee personnel including shift supervising engineers, control room operators, engineering personnel, administrative personnel, and contractor personnel (representing the licensee).

*Denotes those contacted at the exit interviews.

2. Procedures

During the first quarter of 1981, the inspector spent four man-days on procedural inspection effort. This was as a result of the increased inspection effort called for in IE Report No. 80-25 concerning the Systematic Assessment of Licensee Performance. The inspector verified that review and approval of permanent and temporary procedure changes were done in accordance with technical specifications; that temporary changes do not conflict with technical specification requirements; that procedure changes reflect technical specification revisions; that records of changes are maintained; that overall procedure content is consistent with technical specification requirements; and that technical contents are adequate to control safety related operations within applicable Regulatory requirements.

The following procedures were reviewed:

- a. IPOI Volume II, Section II B
- b. IPOI Volume IV, Section VI C
- c. OI-61-53-64
- d. Fuel and Reactor Loading Components Procedures 5, 9 and 29

No items of noncompliance were identified.

3. Review of Plant Operations

During the months of August, 1980 thru March, 1981 the inspector reviewed the following activities:

a. Procurement

The inspector reviewed procurement and storage activities to ascertain whether the purchase of components, materials and supplies used for safety related functions, is in conformance with the licensee's approved QA program and implementing procedures; non-conforming items are segregated and marked accordingly; applicable preventive maintenance is performed; house-keeping and environmental requirements are met; and, limited shelf-life items are controlled.

The following components were inspected:

- (1) Limit switches for DCR 895
- (2) Limit switches EA 740 - 20100 - 86000 - 86001 and - 80100
- (3) Asco Solenoid Valves for DCR 986

b. Review and Audits

The inspector attended several safety review committee meetings. The inspector verified that provisions of technical specifications dealing with membership, review process, meeting frequency and member qualifications were met. The inspector also verified that decisions were made, reflected in the meeting minutes, and that corrective actions proposed were taken.

The inspector reviewed licensee audit records to verify that audit personnel were qualified and independent of the organization being audited; that an audit report was made to management; that corrective action was taken if required; and that audits were performed within required time periods.

c. Training

The inspector reviewed the licensee's operator requalification lecture series and verified that training was in accordance with the approved operator requalification program schedule and objectives.

The inspector verified by direct questioning of one new, one existing, and one temporary employee 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.

d. Environmental Protection

The inspector verified the installation and operability of environmental sampling station(s) and associated equipment and reviewed

records for completeness and accuracy. The inspector verified that water quality analysis test were performed as required by Technical Specifications.

e. Security

By observation and record review the inspector verified that security force personnel achieved acceptable scores during the conduct of weapons tests.

f. Emergency Preparedness

The inspector reviewed training held for local fire departments and verified training was adequate. The inspector observed two emergency drills and verified that the licensee has a program for correcting identified discrepancies and that equipment disrupted was returned to its proper location after the drills.

g. Licensee Action Concerning Identified Problems

The inspector reviewed corrective actions taken by the licensee pertaining to recurring failures and resolution of identified discrepancies involving safety-related components.

No items of noncompliance were identified.

4. Plant Trip

Following the plant trip on March 15, 1981 the inspector ascertained the status of the reactor and safety systems by observation of control room indicators and discussions with licensee personnel concerning plant parameters, emergency system status and reactor coolant chemistry. The inspector verified the establishment of proper communications and reviewed the corrective actions taken by the licensee.

All systems responded as expected, and the plant was returned to operation on March 16, 1981.

No items of noncompliance were identified.

5. Receipt of New Fuel

The inspector verified prior to receipt of new fuel that technically adequate, approved procedures were available covering the receipt, inspection, and storage of new fuel; observed receipt inspections and storage of new fuel elements and verified these activities were performed in accordance with the licensee's procedures; and, followed up resolutions of deficiencies found during new fuel inspections.

No items of noncompliance were identified.

6. Preparation for Refueling

The inspector verified that technically adequate procedures were approved for fuel handling, transfers, core verification, and handling and inspection of core internals. The inspector also reviewed the licensee's program for overall outage control.

The inspector verified that the licensee had submitted a proposed core reload technical specification change to NRR (or that the licensee's 10 CFR 50.59 safety evaluation of the reload core showed that prior NRR review is not required). The inspector also reviewed the licensee's program for overall outage control.

No items of noncompliance were identified.

7. Onsite Review Committee

The inspector examined the onsite review functions conducted during the period January, 1980 to December, 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; 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.

No items of noncompliance were identified.

8. Organization and Administration

The inspector verified that changes in the organizational structure and assignments had been reported to the NRC through the licensee's QA program and verified that persons assigned to new or different positions in the licensee's organization since the last inspection of this area satisfy qualifications identified in the technical specifications, and the licensee's QA program.

No items of noncompliance were identified.

9. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the month of March. The inspector verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of the reactor building and turbine building 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 March, the inspector walked down the accessible portions of the CRD Hydraulic and Scram Discharge 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.

On March 11, 1981, licensee HP personnel identified a piece of conduit leaving the site to be reading 80,000 dpm/ft².

The DAEC Radiation Protection Procedures Manual, Section 5.2.1, Uncontrolled Release, states in part "Unconditional release of equipment or materials from the controlled area may be granted by members of the Radiation Protection and Chemistry Group. Equipment and materials will normally be monitored at access control and must not exceed the following limits: Removable 2000 dpm/ft² Beta-Gamma Contamination, 500 dpm/ft² Alpha.

Contrary to the above, five items located outside of access control for unconditional release read from 8000 to 100 K dpm/ft². The items were licensee identified. The licensee took immediate corrective action and conducted a site-wide survey program to determine the extent of inadvertent releases of materials or equipment exceeding unconditional release limits. Five items were located. A procedure was issued controlling offsite unconditional releases.

This item will remain open to be investigated by a radiation protection specialist scheduled for an inspection the week of April 27, 1981.

10. Monthly Maintenance Observation

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:

MSIV - Local Leak Rate Test and Subsequent Rework of Valve Seats to Restore Leak Tightness

No items of noncompliance were identified.

11. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing on the RCIC and HPCI systems 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 inspector also witnessed portions of the following test activities:

- a. STP 47D003 PCIS Functional Test
- b. STP 47A002 Reactor Low Pressure Shutdown Cooling

12. Independent Inspection Effort

The inspector observed and reviewed the Reactor plant startup on March 15-16, 1981. During review of the off gas loop seals overpressurization and subsequent release of airborne containments the inspector noted that a one-hour telephone notification of the NRC Headquarters duty officer had not been made. The licensee did notify the resident inspector.

10 CFR 50.72, Notification of Significant events, states in part:

- a. Each licensee of a nuclear power reactor licensed under 50.21 or 50.22 shall notify the NRC Operations Center as soon as possible and in all cases within one-hour by telephone of the occurrence of any of the following significant events...

(8) Any accidental, unplanned, or uncontrolled radioactive release.

Contrary to the above, on March 16, 1981, two off gas loop seals were overpressurized and released airborne contamination to the reactor and turbine buildings and was subsequently released through the off gas stack. Total particulate and iodine released when averaged over the calendar quarter was 41% of the 8% technical specification limit. Gaseous release was .6079% of the 4% technical specification limit for the day. The maximum release for the day from all points was 430.6 $\mu\text{C}/\text{sec}$. Because of the low levels of activity involved, the licensee did not consider the release to be significant. The licensee also stated that a written procedure existed for a loss of loop seals and, therefore, in their opinion it was not an unplanned event. NRC Region III reviewed this event and considers the event both unplanned and significant and the lack of timely reporting to be in violation of 10 CFR 50.72.

13. Exit Interview

Due to the length of the inspection and the diversity of areas inspected, the exit interviews were conducted on a weekly basis between the NRC inspectors and the appropriate licensee personnel.

In each case the scope and findings of the individual inspection areas were summarized.