U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-331/81-21

Docket No. 50-331 License No. DPR-49

Licensee: Iowa Electric Light and Power Company
Post Office Box 351
Cedar Rapids, IA 52406

Facility Name: Duane Arnold Energy Center

Inspection At: Duane Arnold Energy Center
Palo, IA

Inspection Conducted: October 1-30, 1981

Inspector: L. S. Clardy 12/10/81

Approved By: W. S. Little, Chief 12/10/81
Projects Section 2C

Inspection Summary

Inspection on October 1-30, 1981 (Report No. 50-331/81-21)
Areas Inspected: Routine resident inspection of plant operations, maintenance, surveillance, TMI action plan followup, procedures, documentation, and work performed. The inspection involved a total of 90 inspector-hours onsite by one NRC inspector, including 10 inspector-hours onsite during off-shifts.
Results: Of the areas inspected, one item of noncompliance was identified (failure to meet a limiting condition for operation - Paragraph 5).

DETAILS

1. Persons Contacted

Iowa Electric Light and Power Company (IE)

*D. Mineck, Chief Engineer
*D. Wilson, Assistant Chief Engineer-Rad. Prot./Security (Acting)
J. Vinquist, Assistant Chief Engineer-Technical Support (Acting)
*B. York, Assistant Chief Engineer-Operations
*D. Teply, Operations Supervisor
C. Mick, Assistant Operations Supervisor
J. VanSickel, Technical Engineer
*R. McCracken, Quality Control Supervisor

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

*Denotes those attending the exit interviews.

2. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the month of October. 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 October, the inspector walked down the accessible portions of the Diesel Generator 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 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:

Diesel Generator Bearing Inspection
Diesel Generator Fuel Oil Replacement
Reexamination of Recirculation Pump Risers

Following completion of maintenance on the Diesel Generators, the inspector verified that these systems had been returned to service properly.

No items of noncompliance were identified.

4. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing on the High Pressure Coolant Injection and Standby Liquid Control 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.

No items of noncompliance were identified.

5. Independent Inspection

The inspector observed and reviewed activities during the three week maintenance outage and subsequent startup. The event reported by the licensee in LER 81-037, involving the MSIV leakage control Subsystem "D" being out of service, was reviewed. During performance of valve lineups on October 17, 1981, prior to startup the licensee identified one valve (84-16) that was locked closed which was required to be locked open. That resulted in the MSIV "D" leakage control system being out of service. The MSIV leakage control system is provided to minimize the fission products which could bypass the standby gas

treatment system (SGTS) after a LOCA. The "D" subsystem being inoperable following a LOCA would mean that any fission products which leaked through the closed inboard "D" MSIV would bypass the SGTS. The FSAR LOCA analysis does not take credit for the MSIV-LCS system.

The licensee immediately rechecked all safety system lineups and no other discrepancies were noted. Based on review of documentation and testing records the licensee has determined that the valve was inadvertently left shut after local leak rate testing prior to startup from the refueling outage on June 1, 1981. The valve lineup checklist completed prior to the refueling outage startup indicated the valve was locked open. The inspector concluded that the valve lineup verification procedure is confusing, contributing to errors of this type. Surveillance testing of the leakage control system conducted since June 1, 1981, would not detect the position of valve 84-16.

The closed valve (84-16) rendered MSIV leakage control Subsystem "D" inoperable during the period (June 1, 1981 to October 17, 1981) the valve was closed. Technical Specification 3.7.E states that from and after the date that one MSIV-LCS subsystem is made or found to be inoperable, continued reactor operation is permissible during the succeeding 30 days provided that during such 30 days all active components of the other MSIV-LCS subsystems are operable. Although the other MSIV-LCS subsystems were operable, the reactor was in operation for approximately 118 days. This violation of TS 3.7.E is an item of noncompliance. (331/81-21-01)

The licensee's corrective actions documented in the attachment to LER 81-037 appear to be satisfactory and the implementation of these actions will be reviewed by the inspector. The "additional instructions on how the valve line up checklists are to be filled out" are important for all safety related valve lineups to clarify what is now a confusing area. The licensee has agreed to emphasize to operators the generic application of the instructions.

6. TMI Related Items

The inspector reviewed the TMI related items listed below for development and implementation per NUREG 0737 and licensee commitments.

II.K.3.15 HPCI and RCIC Isolation Modifications

(Open) NRR requires further information on this item to be submitted by the licensee (October 23, 1981 letter, Ippolito to Arnold).

II.K.3.27 Common Reference Level

(Open) The inspector verified the licensee has established an interim measure that NRR concurs with. NRR has requested further action be taken on this item. (October 21, 1981 letter, Ippolito to Arnold).

II.E.4.2.7 Containment Isolation - Radiation Signal on Purge Valves

(Open) The licensee action is in concurrence with the BWR Owner's Group position. This item will receive further review upon NRR resolution.

II.E.4.2.6.B Containment Purge and Vent Valve Operation

(Closed) The inspector verified the licensee has satisfied the Interim Position, and that commitments made in a July 14, 1981 letter to NRR have been satisfied.

II.B.4.2.B Training for Mitigating Core Damage

(Closed) The inspector verified the licensee has completed the core damage training program as required by NUREG-0737, for operations personnel. Training for technicians in other departments is in implementation per INPO guidelines.

No items of noncompliance were identified.

7. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and at the conclusion of the inspection November 6, 1981 and summarized the scope and findings of the inspection activities. The licensee acknowledged the item of noncompliance.