



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION-III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

CENTRAL FILES

Docket No. 50-331

MAY 20 1977

Iowa Electric Light and Power Company
ATTN: Mr. Duane Arnold
President
IE Towers
P. O. Box 351
Cedar Rapids IA 52406

Gentlemen:

This refers to the inspection conducted by Mr. H. B. Kister of this office on April 18-21, 1977, of activities at Duane Arnold Energy Center authorized by NRC License No. DPR-49 and to the discussion of our findings with Mr. Hammond and others of your staff at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room, except as follows. If this report contains information that you or your contractors believe to be proprietary, you must apply in writing to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. The application must include a full statement of the reasons for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.

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Iowa Electric Light
and Power Company

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MAY 20 1977

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

Gaston Fiorelli, Chief
Reactor Operations and
Nuclear Support Branch

Enclosure: IE Inspection
Report No. 50-331/77-09

cc w/encl:
Mr. E. L. Hammond,
Chief Engineer
Central Files
Reproduction Unit NRC 20b
PDR
Local PDR
NSIC
TIC

OFFICE >	RIII	RIII	RIII		
SURNAME >	Kister/ls	Knop	Fiorelli		
DATE >	5/18/77				

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

REGION III

Report No. 50-331/77-09

Docket No. 50-331

License No. DPR-49

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

Facility Name: Duane Arnold Nuclear Energy Center

Inspection at: Duane Arnold Energy Center, Palo, IA

Inspector: *H.B. Kister*
H. B. Kister

5-19-77

(date signed)

Accompanying Personnel: J. Wetmore NRR
(April 20, 1977 only)

Approved by: *R.C. Knop*
R. C. Knop, Chief
Reactor Projects Section

5-19-77

(date signed)

Inspection Summary

Inspection on April 18-21; 1977 (Report No. 50-331/77-09)

Areas Inspected: Routine, announced inspection of plant organization and administration, License Annual Report, review of non-routine events, and a Plant tour with the NRC NRR Licensing Project Manager. The inspection involved 26 inspector-hours on site by one inspector.

Results: No items of noncompliance were identified.

DETAILS

1. Persons Contacted

Principal Licensee Employees

- *E. Hammond, Chief Engineer
- *D. Mineck, Assistant Chief, Engineer
- B. York, Operations Supervisor
- R. Hannen, Reactor and Plant Performance Engineer
- J. Vinquist, Electrical Maintenance Supervisor
- R. Rockhill, Mechanical Maintenance Supervisor
- R. Rinderman, Quality Supervisor

The inspector also talked with and interviewed several other licensee employees, including members of the technical and operating staff.

*denotes those attending the exit interview.

2. Review of Licensee Event Reports

A review of reporting, corrective actions, licensee review and evaluation and compliance with regulatory requirements was conducted for the following reportable occurrences:

<u>Event Title</u>	<u>Event Date</u>	<u>Licensee Rpt Date</u>
<u>In Office Review</u>		
a. 50-331/77-11, ADS "B" Timer found out of calibration. (30-day)	2-17-77	3-14-77
<u>Site Review</u>		
b. 50-331/76-05, RCIC MOV 2516 operator found separated from valve. (30-day)	1-14-76	2-11-76
c. 50-331/76-14, Oil in Limitorque Operator Motors. (14-day)	3-02-76	3-16-76
d. 50-331/76-75, IG21 DG Defective fuel line fitting. (14-day)	11-04-76	11-10-76

e.	50-331/76-83, RCIC MOV 2405 operator bolts found loose. (14-day)	11-17-76	12-01-76
f.	50-331/77-05, 12 of 16 MSL Hi Flow Insts. found out of calibration. (14-day)	1-11-76	1-25-77
g.	50-331/77-06, HPCI steam exhaust line shock suppressor found broken. (14-day)	1-18-77	2-01-77
h.	50-331/77-09, Core Spray System Water hammer. (14-day)	2-11-77	2-25-77
i.	50-331/77-10, Recirc riser PDIS indicating needle stuck. (30-day)	2-13-77	3-08-77
j.	50-331/77-12, Recirc pump high pressure trip switch sticking. (30-day)	2-18-77	3-14-77
k.	50-331/77-14, Torus vacuum breaker control valve solenoid replaced with incorrect part. (14-day)	2-19-77	3-04-77
l.	50-331/77-15, Relay blocks not removed from HPCI logic after test. (14-day)	2-19-77	3-03-77
m.	50-331/74-48, 51, 52, RHR A>B PDIS abnormal failure. (14-day)	11-12-74	11-21-74
n.	50-331/74-47, 75-47, 75-60, HPCI Hi steam flow PDIS set point drift and incorrect line size. (14-day)	10-30-74	11-08-74

The licensee event report reviewed in the office is considered closed. The inspector's onsite review of reports included discussions of each event with licensee representatives as required, examination of the report, and other documents related to the particular areas reviewed. Comments are as follows:

Items b and e - The inspector reviewed the engineering report and recommended corrective actions. It was noted that a torque verification program was in progress and according to the licensee the corrective actions would be completed during the current outage. A final supplemental report will be forwarded to NRC. This LER will remain open pending review of the final report.

Item c - The licensee informed the inspector that all affected motors had been removed for inspection during this outage and that no significant amounts of oil were found in the cases. The licensee further stated that a final supplemental report will be forwarded to NRC. This LER will remain open pending review of the final report.

Item d - The inspector observed the vendor modifications to the diesel engine fuel lines which consisted of a heavier wall nipple and an additional support hanger on the fuel line. It was noted that the modification had been completed on both engines

Item f - The inspector noted that the switch lock screws that were installed in accordance with the LER corrective action had been removed and an alternate method for locking the switches has been employed as a result of a problem with the lock screw interfering with the indicator needle. (ref: LER 50-331/77-10) also the set point has been changed in the conservative direction to provide more tolerance, and the functional surveillance procedure has been modified to require calibration if the as found setting shows indication of excessive drift. This item is considered closed.

Item g - The inspector noted that the cause for the broken HPCI steam exhaust line snubbers was still being reviewed. The inspector visually examined the subject snubbers during the plant tour and noted that they were intact. This LER will remain open pending completion of the review and final corrective action.

Item h - The inspector noted that investigation into the cause of the Core Spray System water hammer was continuing. Engineering analysis has been completed which indicated that no apparent damage to the system had occurred.^{1/} This LER will remain open pending completion of the licensee's review into the cause.

Item m - The inspector noted that the corrective actions had been completed. Installation of the instrument snubbers was noted during the plant tour. This item is considered closed.

1/ Inspection Rpt 50-331/77-04, dtd 3/2/77.

Item n - The inspector noted that corrective actions had been completed and that the revised instrument set points for the HPCI and RC1C Hi Steam Flow trips have been incorporated into the Technical Specifications.^{2/} This item is considered closed.

During the review of the above licensee event reports the inspector noted that the licensee had identified and satisfactorily corrected three items relating to the Technical Specifications requirements.

3. Organization and Administration

The inspector reviewed the licensee's onsite organization structure, operations committee and safety committee membership and qualifications. Minimum shift crew composition, including licensed personnel requirements, were also verified. No items of noncompliance were identified.

The inspector noted that Figure 6.2-1 of the Technical Specifications specifies routine reporting requirements for changes in incumbents for certain positions. It was further noted that several changes in shift supervisor positions have occurred in the past year which have not been reported. A review of the reporting requirements in Section 6.11 did not identify a requirement for such reporting. The licensee stated that there was a previous requirement; however, when the Technical Specifications were revised to include the standardized reporting requirements the subject reporting requirement was no longer included. The reference to it on Figure 6.2-1 had inadvertently been left on. The licensee agreed to initiate a change to have the reference removed from Figure 6.2-1.

4. Review of the Annual Report

The inspector conducted a review of the facility annual report dated February 28, 1977, including Revision 1, dated March 21, 1977, to verify that the information reported is (a) in accordance with the reporting requirements, and (b) accurately reflects information documented in the facility records. No items of noncompliance were identified.

5. Plant Tour

The inspector conducted a tour of the plant to observe outage activities in progress, observe housekeeping practices, and general adherence to fire protection requirements. Comments are as follows:

- a. During the tour the inspector observed a construction worker passing through a secondary containment airlock door located

^{2/} Amendment 26, dtd 1/17/77 and Amendment 28, dtd 2/11/77.

at the inner entrance to the railroad airlock. It was further noted that the outer railroad airlock door was open which should have prevented the inner door from being opened due to the door interlock system. Also, the red warning light, which is part of the interlock system, was on, and should have warned the construction worker not to open the airlock door. The inspector informed the licensee regarding the malfunctioning door and further commented that, although secondary containment was not required at the time, it appeared that the construction worker was either unaware of secondary containment requirements or had ignored them. Also, since fuel movement requires secondary containment and fuel movement was being conducted at various times during the outage, it would appear prudent that the containment requirements should be generally maintained by the onsite personnel. The licensee agreed to re-emphasize to the construction workers the need for complying with the airlock requirements.

The inspector was informed by the licensee that the subject airlock door had been repaired.

On the following day, during a continuation of the tour, the subject door interlock was again found inoperable. The licensee initiated action to repair the interlock mechanism. The inspector emphasized to the licensee the Technical Specifications requirements for maintaining secondary containment. The licensee acknowledged the inspector's comment and stated that the requirements will be adhered to during fuel movement. Subsequent checks of the subject door during the remainder of the inspection were made and the door interlock was found to operable.

- b. During inspection of the dry well the inspector noted that the main body of the main steam relief valves were installed on the steam header minus the pilot/actuator assembly. When questioned the licensee stated that the pilot/actuator had been removed and shipped to Wiley Laboratories for testing. The inspector inquired as to the rationale for sending only the pilot/actuator for testing in lieu of the entire valve. The licensee stated that this had been the practice in the past and was based on a GE recommendation. The inspector stated that Technical Specifications Section 4.6.D.1 requires that three relief "valves" be checked or replaced with bench checked valves once per operating cycle.

The inspector further commented that since all the relief valves are being replaced with fully tested Target Rock valves during this outage this is not considered a problem requiring

immediate resolution. However, it will be considered an unresolved item until further clarification is obtained.

- c. The inspector examined the RHR "A" Torus suction strainer that was found damaged^{3/} during the refueling outage. A visual examination of the breaks in the screen appear not to have occurred as a result of impact from a foreign object nor does it appear that any portion of the strainer had carried away. There appeared the possibility that the tac welds holding the screen to the upper support ring could have broken permitting excessive flexing of the screen and subsequent fatigue failure. The licensee is continuing to investigate the failure. The licensee agreed to perform a detailed inspection of all other strainers in the torus including the condition of the tac welds while the torus is drained for installation of the new RHR strainer.

6. Unresolved Items

The matter regarding the testing of only the pilot/actuator assy of the Steam Relief Valves will remain unresolved pending additional clarification. (Paragraph 5.b)

7. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on April 21, 1977. The inspector summarized the scope and findings of the inspection. The licensee representatives made the following responses to certain of the items discussed by the inspector:

- a. The need to clarify the method by which the Technical Specifications requirements for testing the Main Steam Relief Valves are satisfied. (Paragraph 5.b)
- b. Agreed to review and assure resolution for the following open items prior to startup:
 - (1) Adequacy of the new Target Rock Steam Relief Valve installation.
 - (2) The HPCI/Auxiliary Steam line snubber/hanger problem. (Paragraph 2.g)
 - (3) The RHR to fuel pool cooling piping water hammer. (LER 50-331/77-29)

3/ LER 50-331/77-25, dtd 4/11/77.

- (4) Loose and defective shock suppressor mounting brackets.
(LER 50-331/77-08)
 - (5) Several failures of the MSIV-LCS valves to properly close automatically.
- c. Agreed to take the necessary action to assure secondary containment requirements were being met during fuel movement.
(Paragraph 5.a)
 - d. Agreed to verify the condition of all other strainers in the torus and include verification in the LER supplemental report.
(Paragraph 5.c)

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