



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

AUG 3 1977

Docket No. 50-331

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 June 1, 27-30; July 1, and 11-14, 1977, of activities at Duane Arnold Emergency Center authorized by NRC Operating License No. DPR-49 and to the discussion of our findings with Mr. Hammond and members of his 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.

During this inspection, certain of your activities appeared to be in noncompliance with NRC requirements, as described in the enclosed Appendix A.

This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office within twenty days of your receipt of this notice a written statement or explanation in reply, including for each item of noncompliance: (1) corrective action taken and the results achieved; (2) corrective action to be taken to avoid further non-compliance; and (3) the date when full compliance will be achieved.

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, the enclosures, and your response to this letter will be placed in the NRC's Public Document Room, except as follows. If the enclosures contain information that you or your contractors believe to be proprietary, you

Iowa Electric Light and  
Power Company

- 2 -

AUG 3 1977

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.

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. 50-331/77-15

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

OFFICE	RIII <i>rlk</i>	RIII <i>rlk</i>	RIII			
SURNAME	Kister/lb	Knop	Fiorelli <i>G</i>			
DATE	8/1/77					

Appendix A

NOTICE OF VIOLATION

Iowa Electric Light and  
Power Company

Docket No. 50-331

Based on the inspection conducted on May 2-5, 1977, certain of your activities appear to be in noncompliance with NRC requirements, as noted below. The following item is an infraction.

Contrary to 10 CFR, Part 50, Appendix B, Criterion XVI and Quality Assurance Directive QAD 1316.1, paragraph 5.1, the licensee failed to take adequate corrective action to ensure that controlled drawings are maintained up-to-date in accordance with DAEC Quality Assurance Directives and Administrative Control Procedures.

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

REGION III

Report No. 50-331/77-15

Docket No. 50-331

License No. DPR-49

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

Facility Name: Duane Arnold Energy Center

Inspection at: Duane Arnold Site, Palo, IA

Inspection Conducted: June 1, 27-30 and July 11-14, 1977

Inspector: H. B. Kister

*RC Knop*

8/2/77

Approved by: R. C. Knop, Chief  
Reactor Projects Section 1

*RC Knop*

8/2/77

Inspection Summary

Inspection on June 1, 27-30 and July 11-14, 1977 (Report No. 50-331/77-15)  
Areas Inspected: Routine unannounced inspection of plant operations,  
review and audit functions, review of Licensee Event Reports, and  
followup on items of noncompliance and outstanding inspection items.  
The inspection involved 58 inspector hours onsite by one inspector.  
Results: Of the four areas inspected, no items of noncompliance or  
deviations were found in three areas; one item of noncompliance was  
found in one area (infraction - failure to maintain up-to-date controlled  
drawings, paragraph, 7)

## DETAILS

### 1. Persons Contacted

#### Corporate Office

Duane Arnold, Chairman of the Board and President  
J. Wallace, Vice President, Generation  
L. Root, Manager Mechanical and Nuclear Engineering  
H. Shearer, Project Engineer, DAEC  
G. Ellis, Design Engineer, Electrical

#### Site

\*E. Hammond, Chief Engineer  
\*D. Mineck, Assistant Chief, Engineer  
\*B. York, Operations Supervisor  
\*J. Gebert, Maintenance Superintendent  
\*J. Vinquist, Electrical Maintenance Supervisor  
R. Hannen, Reactor and Plant Performance Engineer  
\*R. Rinderman, Quality Supervisor  
D. Wilson, Technical Engineer  
\*D. Kaliviatinos, Training Coordinator  
\*J. Van Sickle, Engineering Assistant

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. Plant Operations

The inspector reviewed selected areas of plant operations. Included was a review of control room and supervisor logs, auxiliary operator logs, operating orders, jumper lifted lead control, operational problems, control room manning, hold off log (caution and tag out), and control room operations.

#### a. Review of Records

The inspector reviewed the following records:

- (1) Shift Supervisor's Log, May 26 - June 1, and June 15 - 30, 1977.
- (2) Control Room Log, June 17 - 29, 1977.

- (3) Auxiliary Operator Daily Log, June 29, 1977.
- (4) Jumper and Lifted Lead Log, all entries from March 13, 1977 - June 30, 1977.
- (5) Operating Orders 2-53 through 2-56.
- (6) Deviation Reports 77-50 through 77-137.
- (7) Results of Reactor Water Chemistry, Month of June 1977.
- (8) Hold Off Tag for the Month of June 1977.

Comments are as follows:

The inspector noted that three CRDM high temperature alarms that had been jumpered out of service prior to the 1977 refueling outage were still out of service. When questioned, the licensee conducted an investigation and determined that the alarms could be returned to service. Action was taken to return the alarms to service. The requirements for reviewing the jumper and lifted lead log to ensure that outstanding jumper and lifted leads do not remain in use past the need was discussed with the shift supervisor on duty and the operations supervisor. The operations supervisor agreed to emphasize to the shift supervisors the necessity to consider the continued need for installed jumpers and lifted leads as a part of the monthly audit.

No further problems were identified as a result of the record review.

b. Control Room Operations

The inspector observed Control Room operations on the evening shift of June 1, portions the day shift of June 30, and July 12, 1977. The following was observed.

- (1) Control room manning was in accordance with Technical Specifications.
- (2) Selected monitoring instruments were functioning properly and selected control switches were positioned as required by the operating procedures.
- (3) Housekeeping was satisfactory and cleanliness of internal areas of selected control panels were found to be acceptable.
- (4) Control room operator response to lighted annunciators was satisfactory.

### 3. 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. 50-331/77-19, MSIV-LCS "A" heater did not indicate properly. (30-day)	March 11, 1977	April 5, 1977
b. 50-331/77-20, LPCI loop selection PDIS found tripped and could not be reset. (30-day)	March 14, 1977	April 5, 1977
c. 50-331/77-35 MSL Hi Radiation Monitor RC 4448D did not respond to test source. (30-day)	April 18, 1977	May 18, 1977
d. 50-331/77-39, RBM Channel A Hi flow trip and Channel B Low flow trip settings found out of spec. (30-day)	May 12, 1977	June 10, 1977
e. 50-331/77-41 MCPR LCO exceeded. (30-day)	May 17, 1977	June 16, 1977
f. 50-331/77-42 MCPR LCO exceeded. (30-day)	May 17, 1977	June 16, 1977
<u>Site Review</u>		
g. 50-331/76-05 RCIC Torus suction valve failed to operate. (14-day)	January 14, 1976	February 11, 1976
h. 50-331/76-14, grease found in MOV motors. (14-day)	March 2, 1976	March 16, 1976

<u>Event Title</u>	<u>Event Date</u>	<u>Licensee Rpt Date</u>
<u>Site Review (Continued)</u>		
i. 50-331/76-26, MS relief valve failure. (14-day)	March 31, 1976	April 15, 1976
j. 50-331/76-83 RCIC MOV operator found loose. (14-day)	November 17, 1976	December 1, 1976
k. 50-331/77-09, Core Spray System water hammer. (14-day)	February 11, 1977	February 25, 1977
l. 50-331/77-17, HPCI Steam line flow PDIS out of calibration. (14-day)	March 9, 1977	March 22, 1977
m. 50-331/77-23, 13 mechanical snubbers failed. (14-day)	March 27, 1977	April 8, 1977
n. 50-331/77-27 Safety Valve setting found to be out of tolerance. (14-day)	April 5, 1977	April 18, 1977
o. 50-331/77-30 Blank flange found in containment purge line. (30-day)	April 5, 1977	May 3, 1977
p. 50-331/77-31 essential 4160V bus undervoltage relay de- energize setpoint found out of calibration. (30-day)	April 8, 1977	May 3, 1977
q. 50-331/77-34, MSIV-LCS pressure switches out of cali- bration. (14-day)	April 16, 1977	April 27, 1977



<u>Event Title</u>	<u>Event Date</u>	<u>Licensee Rpt Date</u>
<u>Site Review (Continued)</u>		
r. 50-331/77-36, fire in essential 480V tie breaker. (14-day)	May 7, 1977	May 20, 1977
s. 50-331/77-37, Standby DG 1G-21 output breaker did not close during test. (14-day)	May 10, 1977	May 23, 1977
t. 50-331/77-38, Containment not inerted within the required time. (30-day)	May 15, 1977	June 9, 1977
u. 50-331/77-43, Standby DG 1G31 did not pick up full rated load. (30-day)	May 12, 1977	June 10, 1977
v. 50-331/77-44, Failure to identify unsat. test results. (30-day)	May 15, 1977	June 10, 1977

The licensee event reports reviewed in the office are 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 g. and j. - The inspector reviewed the licensee's engineering evaluation and motor operator bolt torque verification program. There are no further questions at this time.

Item h. - The inspector reviewed the licensee's supplemental report dated May 27, 1977. This item is considered closed.

Item i. - The subject Dresser valves have been replaced with new Target Rock relief valves. This item is considered closed.

Item k. - The inspector reviewed the licensee's supplemental report dated June 9, 1977. This item is considered closed.

Item p. - The inspector reviewed the revised report dated May 24, 1977. It was noted that the relay was calibrated at a slightly higher value to compensate for the drift experienced. This item is considered closed.

Item r. - The inspector reviewed the corrective action including certification of the new breaker. This item will remain open pending further review.

Item t. - The inspector reviewed the licensee's corrective action and noted that insufficient nitrogen was the subject of previous discussions.<sup>1/2/3/</sup> The proposed change to the startup procedure had not been issued, however, the licensee stated that the change was in process. There are no further questions at this time.

Item u. - The inspector noted that the licensee's commitment to correct the diesel generator annual inspection procedure was not completed, however, the commitment is included in the formal followup system and is scheduled for issue prior to the next annual inspection. There are no further questions at this time.

Item v. - The inspector noted that all involved personnel have been formally advised by letter regarding this occurrence. The Chief Engineer stated that it was his intention that discussions with the personnel would be conducted and documented as previously committed.<sup>4/</sup> There are no further questions at this time.

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

#### 4. Review and Audits

A review of the facility review and audit functions was conducted. Included was a verification of the onsite and offsite committee meeting frequency, quorum requirements, and a determination that the Technical Specifications review requirements were being complied with. The Safety Committee audit functions were also reviewed. The inspector noted that Technical Specifications Section 6.5.2.10 (recently revised) requires that Safety Committee meeting minutes

1/ AO 50-331/75-08 dtd, 9/28/76.

2/ AO 50-331/75-56 dtd, 10/30/75.

3/ IE Inspection Rpt No. 75-16 dtd, 11/25/75.

4/ IELP Ltr, D. Arnold to J. G. Keppler, dtd, 11/29/76.

be prepared approved and issued to the President within 14 days following each meeting. The inspector advised the Safety Committee Chairman of the new requirement and the Chairman stated that the requirement would be adhered to in the future.

Regarding Safety Committee meeting No. 171 which was held on June 10, 1977, the inspector noted that the committee review of LER 77-21 regarding results of MSIV Type C leak rate test results concluded that the MSIV packing leakage was not reportable and that NRC had agreed with this position. The inspector informed the licensee that the NRC considered this subject unresolved pending headquarters' review, and that it was so stated in a previous inspection report.<sup>5/</sup> The licensee agreed to re-review this item and correct as necessary.

With regard to Safety Committee Audit requirements, the inspector noted that an additional requirement had been added to conduct an audit of the results of all actions taken to correct deficiencies at least once per six months. The requirement was discussed and the licensee stated that a program would be developed to comply with the requirement. With regard to the biannual audit requirements, the licensee stated that plans were being developed for conducting the audits in the fall.

5. Licensee Action on Previous Inspection Findings

- a. (Closed) Noncompliance (Inspection Report 75-15): Breach of secondary containment due to an inoperable airlock. The inspector noted that the design change for the air lock modification was complete, and appropriate instructions are posted on each door to inform personnel regarding air lock operation and secondary containment requirements.
- b. (Closed) Deviation (Inspection Report 76-01 and 76-22): Failed to establish an adequate commitment followup system. The inspector reviewed the corporate and site followup systems and, aside from the need for some additional fine tuning, considered that the systems were adequately established.
- c. (Open) Deviation (Inspection Report 75-20 and 76-25): The inspector noted that a change to the Fire Protection Plan

5/ IE Inspection Rpt No. 77-13, dtd. 6/16/77.

had been made to include fire fighting agents and equipment use. Training was also reviewed and it appeared that some training such as building ventilation, isolation techniques, and salvage techniques had not yet been conducted. Also, the plan requires monthly training which was not being adhered to. In discussions, the inspector noted that the DAEC had committed<sup>6/</sup> to completing fire brigade training by March 1, 1977. The licensee stated that there was a misunderstanding regarding the subject commitment in that it had not been intended that all training listed in the plan would be complete by March 1, 1977. The licensee further stated that the training intended to be complete included initial familiarization of the fire brigade with plant equipment and procedures, and fire fighting agents and their utilization. This had been completed on schedule. The inspector was also provided with the proposed procedure change revising the monthly training requirement to annually. This item will remain open pending further review during a subsequent inspection.

- d. (Open) Deficiency B.1, 75-11, Deviation, 76-12: The inspector reviewed the licensee's progress regarding their commitment<sup>7/</sup> to control limited shelf life material. It was noted that all required action is scheduled to be completed by August 31, 1977.
- e. (Closed) Infraction (Inspection Report 76-13): Failure to perform and evaluate CRD settling test. This item was reviewed during a previous inspection (77-14) and is considered closed.
- f. (Closed) Noncompliance, (deficiency C.1, deviation E.1, E.2, and E.3, Inspection Report 76-15): Deficiencies in the QA program. The inspector noted that QAD 1318.2, and FSAR amendments 7 and 10 had been revised.
- g. (Closed) Deviation (Inspection Report 76-21): Failure to conduct certain tests on the MSIV-LCS system in accordance with FSAR commitment. The inspector reviewed the completed test and noted that the system is now adjusted to perform per the FSAR.
- h. (Open) noncompliance (Infraction 1, Inspection Report 76-22): Failure to maintain controlled copies of drawings current with plant configuration. The inspector reviewed the licensee's corrective action. (Paragraph 7, Report Details)

6/ IELP Ltr, J. A. Wallace to J. G. Keppler, dtd 12/17/76.

7/ IELP Ltr, J. A. Wallace to J. G. Keppler, dtd 12/28/76.

- i. (Open) Management Item, Inspection Report 76-23: Consultant review of Management Control Systems. The inspector reviewed a seven page report which was prepared by Iowa Electric's consultant, Pickard, Lowe and Garrick, Inc. No regulatory concerns were identified, however, this item will remain open for consideration during a subsequent review of the overall effectiveness of the long term corrective actions<sup>8/</sup> being taken in accordance with Iowa Electric Commitments.
  - j. (Closed) Noncompliance (Inspection Report 77-02, Deficiency 2): Failure to document inspector training. The inspector reviewed training documents and noted that they had been brought up to date.
  - k. (Closed) Noncompliance (Inspection Report 77-06): Consultant QA Manual not in compliance with licensee QA requirements. The inspector reviewed the consultant's QA Manual and noted the addition of procedures QA-17 and QA-18.
  - l. (Closed) Unresolved item (Inspection Report 77-10, Paragraph 10.a): The item concerned whether or not all initiating signals that start the Standby Gas Treatment System are being tested (Hi radiation on refueling floor, Reactor Building ventilation Hi radiation, Hi drywell pressure, and low water level). The inspector reviewed the entire testing scheme for the above initiating signals and it was determined that the required tests were being conducted.
  - m. (Closed) Commitment (Inspection Report 76-25): Installation of additional temperature monitoring capability on the Standby Liquid Control System heat traced piping. The inspector noted the newly installed temperature indicator that was authorized by DCR 618.
  - n. (Closed) Commitment (Inspection Report 76-26): The need for improving instrument shop cleanliness. The inspector noted significant improvement in this area.
6. Licensee Actions on IE Bulletins

The inspector reviewed the licensee's action regarding Bulletins 76-03, 76-06, and 77-01. Comments are as follows:

<sup>8/</sup> IELP Ltr, D. Arnold to J. G. Keppler, dtd 11/29/76.

76-03 - STD Transformer Differential Relays.

The licensee has issued a Design Change (DCR 572) and the necessary material is presently available. The licensee anticipated that the design change will be accomplished during the upcoming outage in September.

76-06 - Diaphragm failures in Air Operated Auxiliary Actuators.

The inspector reviewed the licensee's commitment to inspect the subject diaphragms on the installed Dresser valves during the 1977 refueling outage. It was noted that the installed diaphragms had been inspected and the licensee reported no evidence of failures. Of additional interest in this regard, DAEC has replaced the previously installed Dresser valves with six new Target Rock valves.

77-01 - Pneumatic Time Delay Setpoint Drift.

The inspector reviewed the licensee's response and verified that no ITE Imperial Pneumatic time delay relays are installed in safety related systems at DAEC.

7. Controlled Drawing Maintenance

In the process of reviewing the licensee's corrective action<sup>9/</sup> regarding maintenance of up-to-date controlled copies of drawings, the inspector noted one of the original three questioned drawings, P&ID M-143 still had not been brought up-to-date in the control room. The inspector took a random sample of other controlled drawings in the control room and noted that in addition to the above drawing, of fifteen drawings randomly selected, revisions of the following four drawings did not agree with the Master Drawing List (i.e., drawings were of an earlier revision).

		<u>Revision</u>	
		<u>Control Room</u>	<u>MDC</u>
791E420RS	Sheet 1	18	22
*791E420RS	Sheet 4	18	19
791E414RS	Sheet 6	16	17
791E401RS	Sheet 10	15	16

\*This drawing discrepancy was later attributed to an error in the Master Drawing List.

<sup>9/</sup> IE Inspection Rpt No. 50-331/76-22.

In discussions with the licensee, the inspector commented that an earlier problem had been identified regarding drawing discrepancies<sup>10/</sup> and was again identified as previously noted. The licensee stated that the problem would be thoroughly studied and a corrective action formulated. The inspector stated that this would be considered an item of noncompliance for failure to take adequate corrective action.

8. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on July 14, 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. Acknowledged the item of noncompliance regarded maintenance of controlled drawings. (Paragraph 7)
- b. Agreed to emphasize the need to review outstanding jumpers and lifted leads regarding continued use as a part of the monthly audit. (Paragraph 2.a)

10/ IE Inspection Rpt No. 75-16, dtd 11/25/77.