

CENTRAL
FILES



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

Docket No. 50-331

FEB 16 1978

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 January 23-28, 1978, of activities at Duane Arnold Energy Center authorized by NRC License No. DPR-48 and to the discussion of our findings with Mr. Hammond and 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.

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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FEB 16 1978

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. 50-331/78-02

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/jb	Knop RCK	Fiorelli S-			
DATE >	2/14/78					

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

REGION III

Report No. 50-331/78-02

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 Energy Center

Inspection at: Duane Arnold Site, Palo, IA

Inspection conducted: January 23-28, 1978

Inspector:

H. B. Kister
H. B. Kister

2-14-78

Approved by:

R. C. Knop
R. C. Knop, Chief
Reactor Projects Section 1

2-15-78

Inspection Summary

Inspection on January 23-28, 1978 (Report No. 50-331/78-02)

Areas Inspected: Routine, unannounced inspection of Licensee Events, followup on previous noncompliance and outstanding inspection items. The inspection involved 39 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance or deviations were identified in the two areas inspected.

DETAILS

1. Persons Contacted

Corporate Office

J. A. Wallace, Vice President, Generation
L. Liu, Vice President, Engineering
L. Root, Manager, Mechanical and Nuclear Engineering
H. Rehrauer, Supervisor, Project Engineering
D. Gembler, Supervisor, Quality Assurance

Site

*E. Hammond, Chief Engineer
*D. Mineck, Assistant Chief Engineer
*B. York, Operations Supervisor
*J. Gebert, Maintenance Supervisor
*J. Vinqvist, Electrical Maintenance Supervisor
*R. Rinderman, Quality Supervisor
D. Teply, Shift Supervisory Engineer
R. Zook, Shift Supervisor Engineer
C. Mick, Shift Supervisory Engineer
D. Kalivitinos, Training
*D. Wilson, Technical Engineer
*J. VanSickle, Engineering Assistant

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

2. Organization Changes

During conduct of the inspection, the inspector was informed by the corporate office that some changes in corporate organization had occurred. The changes include a shift of certain responsibilities at the Vice President level. The inspector was assured that the NRC headquarters and regional offices will be formally advised of the changes including any impact with regard to the operational responsibilities for the Duane Arnold Energy Center.

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 Report Date</u>
<u>In Office Review</u>		
a. 50-331/77-86, RWCU System Hi Temperature set point greater than T.S. (30 day)	10-31-77	11-30-77
b. 50-331/77-88, LPCI loop selection logic PDIS would not reset (30 day)	11-08-77	12-6-77
c. 50-331/77-91, LCO action statement for CPR reached (30 day)	11-27-77	12-21-77
<u>Site Review</u>		
d. 50-331/77-24, Failure of hydraulic shock suppressors (14 day)	3-27-77	4-8-77 and 10-4-77
e. 50-331/77-47, failed to perform calibrations within the required frequency (30 day)	5-31-77	6-23-77
f. 50-331/77-48, Standby Diesel operability not performed as required (30 day)	5-31-77	6-29-77
g. 50-331/77-58, LPCI tie breaker tripped on overcurrent indication (14 day)	7-16-77	7-28-77
h. 50-331/77-77, HPCI Pump flow did not meet minimum T.S. requirements (14 day)	9-21-77	10-5-77
i. 50-331/77-78, Section of HPCI-RHR pipe overstressed (14 day)	9-27-77	10-10-77
j. 50-331/77-89, SBGTS, monthly operability test not performed (30 day)	11-28-77	12-6-77

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|----|--|----------|----------|
| k. | 50-331/77-90, HPCI injection valve failed to close (30 day) | 11-23-77 | 12-21-77 |
| 1. | 50-331/77-92, LPRM signals to 4 APRMS found nonconservative (30 day) | 11-28-77 | 12-20-77 |

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:

Item d - The inspector reviewed the supplemental report submitted on October 4, 1977. This event is considered closed.

Items e, f, g, j - The inspector noted that the corrective action had been completed. Regarding Item g, the inspector further noted that additional corrective action has also been taken regarding post-installation testing (Paragraph 4.r) These events are considered closed.

Item h - The inspector reviewed this event and two subsequent events^{1/} concerning the inability of the HPCI reached the required speed within the specified time period. The initial corrective action had been to throttle the various turbine oil supply valves to provide additional pressure to increase the opening speed of the turbine stop valve. This apparently did not adequately solve the problem. The licensee conducted further tests and determined that the capacity of the shaft driven oil pump at low turbine speeds appeared to be insufficient. As a temporary measure, the auxiliary oil pump cutoff pressure set point has been increased to extend the auxiliary pump run time and maintain sufficient oil pressure to assure attainment of rated HPCI turbine speed. The licensee plans to install new pump internals during the upcoming refueling outage and conduct further tests. This event report is considered closed for record purposes. Further review will be conducted on LER's 77-95 and 77-96.

1/ Licensee Event Reports 50-331/77-95 and 77-96, dtd 12/30/77 and 1/9/78.

- Item i - The inspector reviewed the results of the NDE performed on the affected pipe. No further concerns were identified.
- Item l - A preliminary review of this event was conducted during a previous inspection.^{2/} Additional discussion was conducted with the licensee regarding the corrective action. According to the licensee further testing was conducted with close supervision by Iowa Electric personnel. No further problems have occurred. No further concerns were identified.

4. Followup on Previous Noncompliance

- a. (Open) Commitment, Inspection Report No. 50-331/76-01, Letter Item 2 - Commitment to review and implement WASH documents 1283, 1284, and 1309 - The licensee stated that all review work has been completed, and revision of the plant ACP's (1400 series) has essentially been completed with the exception of any potential changes that may occur as a result of final issuance of five remaining QADs. Five QADs (1300 series) remain to be approved and issued, and the Engineering Department ACPs (1200 series) require approval and issuance. The licensee stated that the above remaining documents will be issued by February 15. The inspector informed the licensee that detailed review of the WASH document implementation will be conducted during the regular inspection program in the current year. This item will remain open pending final issue of the remaining procedures.
- b. (Closed) Commitment, Inspection Report No. 76-01, Letter Item 2 - Commitment to ensure ongoing appraisal of the Plant Emergency Plan. This item is considered closed based on the findings reported in IR 77-18.
- c. (Closed) Noncompliance, Inspection Report No. 76-01, Infraction B.2, failure to implement a Work Inspection Program - The licensee stated that the program is essentially in place and functioning. The inspector reviewed the controlling documents, QAD 1310.1, ACP 1405.6, and Quality Department Directives 1450 IX and 1450 X and no problems were identified. The inspector identified one concern regarding the review of existing procedures and insertion of inspection and hold points. The licensee stated that this had not been conducted, however, each

2/ IE Inspection Report No. 50-331/77-22, dtd 1/10/78.

applicable procedure will be reviewed and revised as necessary prior to the use of the procedure as part of the Maintenance Action Request review. The inspector commented that this type of a review will place an additional burden on the Quality Department, particularly, if the maintenance was of an urgent nature. The licensee stated that the inspection program would not be compromised as a result of the necessary reviews and felt that any problems could be worked out. The inspector further stated that the work inspection program would be monitored as part of the routine inspection program during the current year. For record purposes, this item is considered closed.

- d. (Closed) Deviation, Inspection Report No. 76-01, Deviation E.1.a, failure to train and certify inspectors - progress on this item was previously reported in IR 77-02. The inspector reviewed the certification of two additional inspectors, (S. R. Kelly and J. R. Rhodes) no problems were identified. The inspector also noted that the Quality Department staff now included five inspectors, four Level 2 "General" and one in training. The licensee stated that it was expected that the fifth inspector would be certified in time for the upcoming refueling outage. No further concerns were identified.
- e. (Closed) Deviation, Inspection Report 76-12, Deviation from commitment to complete the review of limited life shelf items - The licensee stated that the review was completed and that limited life requirements had been incorporated into their procurement program. All existing shelf items had been reviewed, repackaged as necessary, and items with expired shelf life dates have been removed. Also, in service limited life items have been reviewed and efforts are in progress to incorporate this information into the preventative maintenance program. No further concerns were identified.
- f. (Closed) Commitment, Inspection Report No. 76-15, Concern No. 3 - The inspector reviewed the auditor training program, no further concerns were identified.
- g. (Open) Commitment, Inspection Report No. 76-15, Concern No. 4 - Evaluation of QA program effectiveness. The inspector reviewed the procedure for QA program evaluation (1101.7). It was noted that only Licensee Event Report Activity was being trended. In discussions with the licensee, the

inspector commented that QA audit findings and NRC non-compliance should also be trended to provide a better base for the overall evaluation of effectiveness of the Quality Assurance Program. The licensee acknowledged the inspector's comments and agreed to consider trending the above areas. This item will remain open pending further reviews of this area.

- h. (Closed) Noncompliance, Inspection Report No. 76-22, Infraction B.2c, design changes not accomplished per instructions - The inspector considered this item closed based on the implementation of the non-licensed training program and the work inspection program.
- i. (Open) Commitment, Inspection Report No. 76-23, Item 1, Large number of events attributable to personnel error - The inspector reviewed the licensee's progress regarding their efforts to reduce personnel error. It was noted that the number of events attributed to personnel error was slightly down for 1977. The inspector emphasized that the licensee efforts should continue in the area of personnel error documentation and management review. This item will remain open pending further review of progress during 1978.
- j. (Closed) Commitment, Inspection Report No. 76-23, Item 2, Loss of Manpower - The inspector noted that three additional personnel have been added to the Reactor and Plant Performance Engineer's staff. Also, additional personnel have been added in the Quality Department. Assistants have been provided to the maintenance supervisors and there's a full time Training Coordinator. No further concerns were identified.
- k. (Closed) Commitment, Inspection Report No. 76-23, Item 7, Corporate Involvement at DAEC - The inspector reviewed the activities of the Management Coordinating Committee with the Vice President, Generation, who chairs the committee. It appeared that the committee is functioning well. The inspector encouraged the continuation of the committee functions. This item is considered closed for record purposes.
- l. (Closed) Deviation, Inspection Report No. 76-25, Fire Brigade training not completed - this item was also reviewed in IR 77-15. The inspector discussed Fire Brigade training progress with the training coordinator. It was

noted that the instructor was using pre-developed training outlines. It appears that progress has been satisfactory and a training schedule has been formulated. No further concerns were identified.

- m. (Closed) Noncompliance Inspection Report No. 76-26, Infraction 1, Maintenance procedures not adhered to - The licensee informed the inspector that the Maintenance Superintendent had instructed all contract personnel prior to the 1977 refueling outage, and in addition, the revised training program requires that contract personnel must review all applicable administrative control procedures prior to beginning work at DAEC. No further concerns were identified.
- n. (Closed) Noncompliance, Inspection Report No. 76-26, Infraction 2, Scope of temporary procedure changes - The inspector noted that supervisors had been instructed to more thoroughly review temporary procedure changes. No further concerns were identified.
- o. (Closed) Noncompliance, Inspection Report No. 77-02, Deficiency 1, Failure to provide Auditor Training - The inspector noted that the subject auditor had completed the required training.
- p. (Closed) Noncompliance, IR 77-13, Infraction A.3, Failure to follow procedure - The inspector was provided a copy of the revised leak rate test procedure. A review of the revised procedure will be conducted during a subsequent inspection. With regard to the licensee's corrective action to transmit a letter to their consultant by August 1, 1977, the Chief Engineer informed the inspector that the information had been provided to the consultant by telephone. The licensee agreed to document the telephone conversation.
- q. (Closed) Noncompliance, Inspection Report No. 77-13, Deficiencies 1 and 2, Flowmeter not properly calibrated and failure to locate test record - The inspector reviewed the licensee corrective action. No further concerns were identified.
- r. (Closed) Noncompliance, IR 77-14, Infractions 1 and 2, MSIV post-maintenance test not performed and MAR system not adhered to - The inspector reviewed the implementation of the licensee's revised MAR system. The licensee stated that all

MARs issued after January 1, 1978 are being reviewed in accordance with the revised system. All prior MARs will be reviewed when possible at the daily maintenance meeting. No further problems were identified.

- s. (Closed) Commitment, Inspection Report No. 77-16, Letter Item, establishment of a Safety Related List - The inspector reviewed the initial issue of the licensee's comprehensive system for making safety related decisions regarding DAEC quality. Subject to future review of refinements, no further concerns were identified.
- t. (Closed) Noncompliance, Inspection Report No. 77-16, Deficiency, failure to correctly identify Quality Requirements - The inspector reviewed the licensee's corrective action. No further concerns were identified.

5. Failure of MOV 2700 Valve Operator Limit Switch

During a review of control room operations on January 23, 1978, the inspector noted that the Reactor Water Cleanup System inboard isolation valve MOV 2700, apparently had experienced a operator open position limit switch failure on December 27, 1977. The valve had been initially declared inoperable and the outboard valve MOV 2701 had been shut in accordance with Technical Specification Requirements. After some investigation the licensee determined that due to the limit switch failure the valve had backseated and the motor thermal overloads had tripped, resulting in a failure of the valve to close. The licensee decided at the time to reset the thermal overloads and declare the valve operable with additional instructions to reset the motor thermal overloads each time the valve was operated. On January 23, 1978, the licensee decided that, to provide greater assurance of valve operability, it would be advisable to defeat the valve's "seal in" open features so that the valve could be throttled in the open position to prevent back seating and subsequent thermal overload trip. The inspector discussed the event with the licensee and as a result the licensee agreed to (1) issue a memorandum to the operating staff which would explain in detail the special operating requirements of the valve, (2) MOV 2701 would be used primarily as the RWCV system throttling valve, and (3) after each operation of MOV 2700, a current check would be performed to ensure that degradation of the valve motor operator was not occurring. The licensee plans to repair the valve operator during the refueling outage beginning in March 1978. The inspector requested to be advised of any change in the status of the subject valve.

7. Plant Operations

The inspector reviewed the circumstances surrounding the three plant trips which occurred during the week of January 9, 1978. It was noted that the operating staff responded appropriately and that the the necessary corrective actions had been taken. No significant problems were identified.

8. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on January 27, 1978. The inspector summarized the scope and findings of the inspection. The licensee representatives had no comments regarding the items discussed by the inspector.