



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

JUN 15 1977

Docket No. 50-331

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

Gentlemen:

This refers to the inspection conducted by Mr. W. B. Grant of this office on May 23-26, 1977, of activities at Duane Arnold Energy Center authorized by NRC Operating License No. DPR-49 and to the discussion of our findings with Mr. E. Hammond and members 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.

Iowa Electric Light  
and Power Company

- 2 -

JUN 15 1977

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

Sincerely,

James M. Allan, Chief  
Fuel Facility and  
Materials Safety Branch

Enclosure: IE Inspection  
Report No. 50-331/77-11

cc w/encl:

Mr. E. L. Hammond, Chief  
Engineer

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OFFICE	RIII	RIII	RIII	RIII		
SURNAME	Grant/lb	Paulo	Allan	Kister		
DATE	6/13/77					

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

REGION III

Report No. 50-331/77-11

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: May 23-26, 1977

Inspector: W. B. Grant

*W B Grant*

6/14/77

(date signed)

Approved by: *J. A. Pagliaro*  
J. A. Pagliaro, Chief  
Environmental and Special  
Projects Section

6/14/77

(date signed)

Inspection Summary

Inspection on May 23-26, 1977 (Report No. 50-331/77-11)

Areas Inspected: Routine, unannounced inspection of the environmental protection program including management controls; program review and audit; radiological monitoring program; nonradiological monitoring, water quality monitoring, and special studies. The inspection involved 24 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance or deviations were disclosed.

## DETAILS

### 1. Persons Contacted

\*E. Hammond, Chief Engineer  
\*K. Young, Radiation Protection Engineer  
\*G. Kuehn, Assistant Radiation Protection Engineer  
\*B. McVickers, Plant Chemist  
L. Nelson, Surveillance Coordinator  
D. Vernon, Rad-Chem Technician (Environmental)  
\*R. Rinderman, Quality Supervisor  
J. Davis, Quality Technician

\*Denotes those present at the exit interview.

### 2. Licensee Action on Previous Inspection Findings

(Closed) Deviation (331/76-19): Deviation from a commitment specified in a letter dated May 10, 1976, to obtain calibration procedures for all analytical and test equipment used to perform analyses for the environmental monitoring program from the sub-contractor. The inspector reviewed records, interviewed licensee representatives and, based on this review, the licensee's commitment to corrective action is considered complete.

### 3. Management Control

The licensee's administrative and procedural controls for implementation of the environmental monitoring and nonradiological effluent control programs were examined. This examination included a review of assignments, responsibilities, and authorities for program management and implementation. Since the previous environmental protection inspection,<sup>1/</sup> the licensee has maintained the same management and audit functions relating to the conduct of the environmental monitoring and radiological effluent control programs.

#### a. Review and Audit

The inspector reviewed reports and documentation of licensee audits conducted since the last inspection.<sup>2/</sup> Four audits were conducted: Iowa Electric Headquarters Quality Assurance (July and September, 1976) consultant audit; Iowa Electric Headquarters Quality Assurance (May and June, 1976) DAEC environmental monitoring program audit; Iowa Electric Headquarters Quality Assurance and DAEC (November, 1976) consultant

1/ IE Inspection Report No. 50-331/76-07.

2/ Ibid.

audit; and DAEC Quality Assurance (January, 1977) quality audit. The audits reviewed all, or in part, laboratory equipment calibration, laboratory procedures, environmental monitoring results, and determination of completeness of Appendix B, Technical Specification requirements. No technical specification violations were found. The inspector determined that significant items identified by these quality assurance audits received appropriate and timely action by the licensee.

The licensee's quality assurance program identified, corrected, and reported to the NRC two environmental technical specification violations since the last inspection.<sup>3/</sup> The inspector reviewed the licensee's corrective action and has no further questions at this time.

b. Operational Procedure

The inspector reviewed the licensee's radiological and environmental sampling procedures. It was noted that the procedures are developed and reviewed and approved by the Operations Committee. The environmental subcontractors laboratory procedures and calibration techniques were received by the licensee after the September 1976 quality assurance audit. The inspector determined that the procedures were reviewed and approved by DAEC program management.

c. Calibration Procedures

The inspector reviewed procedures and documentation for calibration of equipment utilized in the environmental monitoring program. The inspector reviewed calibration records, periodic maintenance on the thermoluminescent dosimeter monitoring equipment, and amperometric titrator.

No items of noncompliance or deviations were noted.

4. Implementation of the Environmental Protection Program

a. Radiological Monitoring Program

Results of the licensee's radiological and environmental monitoring programs for the calendar year 1976 were selectively examined for compliance with monitoring and reporting requirements. The installation and operability of selected radiological and environmental monitoring stations were also examined.

3/ Ibid.

(1) Environmental Monitoring Reports

No unusual results or trends were identified in the inspector's review of the radiological environmental monitoring results. The inspector reviewed the last semi-annual operating report for 1976, and determined it was prepared and submitted as per requirements of the technical specifications.

(2) Sample Collection Stations

Selected radiological air sampling stations were examined and found to be operable and located as specified. It was determined that when the licensee replaces old air samplers they are replaced with air samplers equipped with vacuum gauges. The air samplers currently in use are equipped with either vacuum gauges or flowmeters and elapsed time indicators.

(3) TLD Systems

Lithium flouride (LiF) thermoluminescent dosimeter (TLD) gamma radiation monitoring system was examined and selected sample sites were inspected. No problem areas were observed.

No items of noncompliance or deviations were noted.

b. Nonradiological Monitoring Program

Results of the licensee's nonradiological environmental monitoring program for 1976, were selectively examined for compliance with monitoring and reporting requirements.

(1) Chemical Discharges

The inspector reviewed chemical analyses for the waste neutralizing tank discharges released during 1976. The inspector reviewed the release data for compliance with the monitoring and effluent release limitations specified in the technical specifications. It was determined that there were no occurrences of chemical releases reviewed exceeding those specified in the technical specifications. In addition, the inspector reviewed pH requirements and determined that reviewed releases were within the allowable pH range.

The inspector reviewed chlorination records and determined that the licensee is securing the blowdown water from the cooling towers prior to chlorination. After chlorination, sampling of the blowdown is performed and no releases are made until chlorine levels are less than 0.05 milligrams per liter.

No items of noncompliance or deviations were noted.

(2) Water Quality Monitoring

(a) General Water Quality Analysis

The inspector reviewed the general water quality and analysis program which is conducted twice per month routinely. The general water quality analysis data are presented in the two 1976 semi-annual operating reports. The inspector determined that the program has been conducted during 1976 in accordance with the referenced technical specifications.

(b) Complete Water Quality Analysis

As per Appendix B, Technical Specification 4.1.1.2, the general water quality parameters plus eleven other chemical analyses are performed three times per year, at the five general water quality sampling locations. In addition, dissolved oxygen, pH and alkalinity are determined at each site every four hours over one twenty-four hour period. A review of the 1976 semi-annual operating reports determined the program has been conducted in accordance with the referenced technical specifications.

(c) Thermal Monitoring

The inspector reviewed documentation pertaining to the calibration checks of the temperature (RTD) sensors. The inspector determined that the licensee had performed annual calibration checks on the referenced sensors.

No items of noncompliance or deviations were noted.

c. Special Studies

(1) Plankton, Bacteriological, and Periphyton

The inspector reviewed plankton, bacteriological, and periphyton studies and determined that they were conducted and reported as required by the technical specifications.

(2) Benthic Organisms Study

The inspector reviewed the benthic organism studies as reported in 1976 semi-annual reports and determined that they were conducted in accordance with the technical specifications.

(3) Entrainment, Impingement and Terrestrial Salt Drift Studies

The entrainment and impingement studies and the monthly salt drift inspection summaries were reviewed and it was determined that they were conducted in accordance with the technical specifications.

No items of noncompliance or deviations were noted.

5. Exit Interview

The inspector met with licensee representatives (as noted in Paragraph 1 with the addition of J. VanSickel, DAEC Engineering Assistant.) at the conclusion of the inspection on May 26, 1977. The inspector summarized the purpose and scope of the inspection and the findings.

The satisfactory completion of the corrective action regarding the deficiency noted during the last inspection and the general improvement of the overall environmental program were also discussed.