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

REGION III

Report No. 50-331/79-21

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, Iowa

Inspection Conducted: September 10-14, 1979

Inspector: for T R Greger D. E. Miller 10/4/79

Approved By: T R Greger L. R. Greger, Acting Chief 10/4/79
Fuel Facility Projects and
Radiation Support Section

Inspection Summary

Inspection on September 10-14, 1979 (Report No. 50-331/79-21)
Areas Inspected: Routine, unannounced inspection of radiation protection program, including: qualifications; audits; training; radiation protection procedures; instruments and equipment; exposure control; posting, labeling, and control; surveys; notifications and reports; and a previous item of noncompliance. The inspection involved 32 inspector-hours on site by one NRC inspector.
Results: No items of noncompliance or deviations were identified.

## DETAILS

1. Persons Contacted

L. Root, Assistant Vice President, Nuclear Generation
*D. Mineck, Assistant Chief Engineer
*K. Young, Radiation Protection Engineer
*G. Kuehn, Assistant Radiation Protection Engineer
*G. Roach, Plant Chemist
*E. Lange, Health Physics/Radwaste Supervisor
*B. McCracken, Quality Control Supervisor

The inspector also talked with several plant and contract health physics personnel during the inspection.

*Denotes those present at the exit interview.

2. General

This inspection, which began with a plant tour and visual observation of facilities and equipment, posting, labeling, and access controls at 7:00 p.m. on September 10, 1979, was conducted to examine routine aspects of the radiation protection program and one past item of noncompliance. During the plant tour the inspector performed an independent radiation survey of selected areas within the reactor and turbine buildings using a licensee owned portable survey instrument. No items of noncompliance were identified.

3. Licensee Action on Previous Inspection Findings

(Closed) Infraction (50-331/79-06): Concerning shipment of Type B quantities of radioactive waste without an approved quality assurance program. The inspector reviewed the licensee's response dated April 13, 1979 and found it to be adequate. The licensee stated that he will not be shipping greater than Type A quantities until an acceptable quality assurance program is operational. The inspector has no further questions at this time.

4. Organization

During 1979, five Health Physics/Radwaste Specialists have either terminated employment or transferred to other departments. Two of these vacant positions have been filled and DAEC is actively attempting to fill the remaining positions.

Currently, contract health physics technicians are staffing back shifts and weekends. One of these technicians on each back shift and weekends is designated as the person qualified to implement radiation protection procedures as required by the technical specifications.

The licensee stated that it is difficult to find time to provide training and retraining for station health physics specialists because the department is understaffed and must cover routine and special work in progress. Planned training is to be performed with contract technicians performing part of these duties. (Paragraph 5).

5. Training

a. Health Physics/Radwaste Specialists

The licensee stated that four specialists will attend an onsite, contractor taught, three week advanced health physics training course starting on September 17, 1979. It is planned that this training be followed by a three week chemistry training course for the same specialists.

The licensee plans to conduct similar training for four more specialists after completion of the first sessions.

b. General Radiation Protection Orientation

The licensee stated that some changes have been made to oral presentations to add required instructions. Also, the licensee intends to put together a new taped orientation presentation which would update the current taped presentation.

6. Contract Radiation Technician Qualifications

The inspector asked the licensee how he determines the qualifications of contract radiation technicians and how they are utilized. The licensee stated that the contractor who supplies the technicians designates who can fill a junior or senior capacity, and provides resumes for each. The licensee stated that he reviews each resume to determine if those designated as senior technicians meet ANSI N18.1 requirements.

The inspector selectively reviewed several contract technician resumes and noted that they were very general and did not include specific time periods or assigned tasks for previous work experience. The inspector discussed with the licensee the desirability of requesting more specific resumes from the contractor. The licensee stated that the matter would be pursued with the contractor. This item will be reviewed further during a future inspection.

The contract technicians report to contract supervisors. Normally, judgments concerning a contract technician's capabilities to perform specific tasks are made by contract supervisors. The licensee stated that contract technicians are not allowed to work in responsible positions until they become acquainted with the facility and

DAEC radiation protection procedures. The inspector noted that several contract technicians are authorized to write and sign radiation work permits.

Licensee personnel stated that the work performance of contract technicians is routinely reviewed and discussed with contract supervision. Also, the licensee is contemplating a program for testing contract technicians as a tool to help determine their capabilities and acceptability.

7. License Audits

The inspector reviewed the report of the radiation protection program audit conducted by the quality assurance department during March 1979. The inspector noted that two items requiring corrective actions were identified during the audit and that corrective actions had been completed. No problems were identified by the inspector.

8. Radiation Protection Procedure Revision

The licensee has finished a complete revision of the Radiation Protection Procedures Manual (RPPM) which replaces the previous RPPM and Plant Radiation Protection Manuals.

The inspector reviewed the administrative and technical contents of the new and revised procedures. In general, the changes appear to be compatible with technical specification and regulatory requirements. Several minor deviations were discussed with the licensee who stated that correction would be made.

No significant problems were identified.

9. Personal Dosimetry

The inspector reviewed the licensee's personal dosimetry records for the period from July 1978 through June 1979. No exposures in excess of regulatory limits were noted. Forms NRC-4 were selectively reviewed.

No abnormalities were identified.

10. In Vivo Counting

The licensee uses a contractor supplied onsite whole body counter. The inspector reviewed records of 846 whole body counts done on 762 individuals during the period from November 1978 through July 1979. Several initial counts indicated significant activity and were followed by thorough showering and recounting of the individuals. The recounts indicated less than four percent combined MPOB within

three days. The quantity of apparent skin contamination on the individuals who had elevated initial counts was not large enough to be detected by portable survey instruments. No problems were identified.

The licensee stated that a chair-type whole body counter and associated software has been purchased with delivery expected soon. The licensee plans to establish a centralized facility for processing new employees and contractors which will include the whole body counter and mask fitting equipment.

11. Surveys

a. Direct Radiation and Surface Contamination

Records of routine and special direct radiation and surface contamination surveys conducted during the period from January through August 1979 were selectively reviewed. Survey frequencies and contents appear to be adequate. No problems were identified.

b. Air Sampling

The inspector reviewed selected air sampling records for the period from January through August 1979. The inspector noted that samples which showed significant quantities of activity on immediate counting were recounted at set delay times and half lives established.

Frequency and extent of routine air sampling appears to be adequate. The inspector also reviewed job specific air sampling which is discussed in Section 12 below.

No problems were identified.

c. Sealed Sources

The inspector reviewed records of sealed source leak tests performed in April 1979. These tests satisfy the requirements listed in Technical Specification 6.9.2.

No problems were identified.

12. Radiation Work Permits

Radiation Work Permits (RWP's) are required for posted area entries. The inspector selectively reviewed the 843 RWP's written during 1979 through September 11. During the review, particular attention was given to the licensee's determination of working area airborne activity concentrations and respiratory protective devices used. The inspector found it difficult to establish types and frequencies

of job specific air sampling because of the sparse use of cross referencing. A records search in each instance resulted in a finding that adequate surveys were performed.

The inspector discussed with licensee representatives the desirability of assuring that the RWP numbers are written onto their assigned slots within existing forms so that record retrieval is simplified. The licensee stated that this would be accomplished.

No other problems were identified.

13. Calibrations

a. Portable Survey Instruments

The inspector noted that in several instances portable survey instruments had not been calibrated at the minimum frequencies listed in Radiation Protection Procedure 11.1. The licensee stated that the station instrument department frequently gets behind because of their workload and priorities. The licensee stated that health physics technicians are instructed to check an instrument's calibration due date before use and take it out-of-service if overdue. Calibration records do not reflect these out-of-service periods.

The inspector noted that the technical specification requirement for radiological procedures previously contained in Section 6.9.1 was deleted by amendment 48. The inspector discussed this matter with the NRR Project Manager for DAEC who stated that the deletion was inadvertent, and will be corrected.

b. Area Radiation Monitors (ARM's)

The inspector reviewed ARM calibrations performed during 1979 and verified that they were done at the frequencies listed in Radiation Protection Procedure 11.2. The inspector noted that the General Electric ARM's are electronically calibrated only if they fail or cannot be adequately calibrated. There is no technical specification requirement for ARM calibration.

14. Reports and Postings

The inspector reviewed the following matters and found no items which required corrective actions.

a. Reports required by 10 CFR 20.407 and 20.408.

b. Report required by Technical Specification 6.11.1.b.(3) concerning personal dose by type of worker and work performed.

c. Notifications and reports to individuals required by 10 CFR 19.13.

d. Posting of notices to workers as required by 10 CFR 19.11.

15. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on September 14, 1979.

The following matters were discussed:

a. The purpose and scope of the inspection.

b. Previous item of noncompliance. (Paragraph 3)

c. The new Radiation Protection Procedures Manual. The licensee stated that needed minor revisions would be made. (Paragraph 8)

d. Documentation of job specific air samples. The licensee stated that RWP numbers will be written on appropriate air sample forms to aid retrieval of information. (Paragraph 12)

e. Contract health physics technician resumes. The licensee stated that they would ask the contractor to provide more specific resumes. (Paragraph 6)