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

## REGION III

Report No. 50-331/79-25

Docket No. 50-331

License No. DPR-49

Licensee: Iowa Electric Light and Power Company Security Building, P.O. Box 357 Cedar Rapids, Iowa 52406

Facility Name: Duane Arnold Energy Center, Palo, Iowa

Inspection Conducted: October 9-12, 18-19, 25-26 and November 1-2, and 20, 1979

Inspectors: I. N. Jackin

GOLOTC C Wright E. R. Swanson

Approved By: W. S. Little, Chief Nuclear Support Section 2

Inspection Summary

Inspection on October 9-12, 18-19, 25-26 and November 1-2 and 20, 1979 (Report No. 50-331/79-25)

<u>Areas Inspected</u>: Announced special inspection of the licensee's implementation of the Quality Assurance Program in the following areas: QA/QC administration; qualification of personnel; design changes and modifications; records control; receipt, storage and handling; tests and experiments; procurement control; document control; offsite review committee; audits; test and measurement equipment; surveillance and calibration; maintenance; housekeeping and cleanliness; and offsite support staff. The inspection involved 238 inspector hours on site by five NRC inspectors.

<u>Results</u>: Of the fifteen areas inspected, no apparent items of noncompliance or deviations were identified in nine areas, seven apparent items of noncompliance were identified in six areas (deficiency - failure to provide basis for a special test procedure - Paragraph 7; deficiency - failure to review and approve a procedure - Paragraph 7; deficiency - failure to issue an official Safety-Related List - Paragraph 2; deficiency - failure to utilize status reports - Paragraph 3; deficiency - failure to adequately address Technical Specification requirement 4.6 - Paragraph 10; infraction - failure to follow procedures relating to maintenance - Paragraph 11; infraction failure to update drawings - Paragraph 12).

### DETAILS

## 1. Persons Contacted

- H. Rehrauer, Chairman, DAEC Safety Committee
- R. Youngs, Corporate Quality Assurance Manager
- E. Hammond, Chief Engineer
- D. Mineck, Assistant Chief Engineer
- B. York, Operations Supervisor
- D. Tepley, Assistant Operations Supervisor
- G. Phillips, Administrative Supervisor
- R. Hannen, Reactor and Plant Performance Engineer
- J. VanSickel, Assistant Technical Engineer
- D. Wilson, Technical Engineer
- J. Vinquist, Electrical Maintenance Supervisor
- R. Rockhill, Mechanical Maintenance Supervisor
- K. Young, Radiation Protection Engineer
- J. Sweiger, Electrical Maintenance Supervisor Assistant
- B. Sheffel, QA Engineer
- G. Fulford, Mechanical Maintenance Supervisor Assistant
- J. Davis, Quality Engineer
- R. McCracken, Quality Supervisor
- R. Essig, QA Engineer
- P. D. Ward, Project Engineer, DAEC
- T. A. Gucciardo, Electrical Design Engineer

The inspectors also interviewed several other licensee employees including shift supervisors and plant engineering and administrative personnel.

On November 20, 1979, a management meeting was held in the Iowa Electric Light and Power Company corporate offices in Cedar Rapids, Iowa. The purpose of the meeting was to discuss the findings identified during the Quality Assurance inspection conducted on October 9-12, 18-19, 25-26 and November 1-2, 20, 1979. Attendees included the following representatives.

## NRC Region III

R. F. Heishman, Chief, Reactor Operations and Nuclear Support Branch
R. L. Spessard, Chief, Reactor Projects Section 1
W. S. Little, Chief, Nuclear Support Section 2
I. N. Jackiw, Reactor Inspector
G. C. Wright, Reactor Inspector
E. R. Swanson, Reactor Inspector

#### IEL&P

- L. D. Root, Assistant Vice President, Nuclear Generation
- D. L. Mineck, Assistant Chief Engineer, DAEC
- B. R. York, Operations Supervisor DAEC
- R. A. McCracken, Quality Supervisor
- H. M. Green, Quality Engineer

- 3 -

W. Johnson, Purchasing
P. D. Ward, Project Engineer, DAEC
T. A. Gucciardo, Electrical Design Engineer
D. L. Wilson, Technical Engineer
R. A. Youngs, Corporate Quality Assurance Manager
B. J. Sheffel, Corporate Quality Assurance Supervisor
H. Shearer, Mechanical/Nuclear Engineer
J. Elleb, Records Supervisor, Corporate Services
W. C. Jurgensen, Manager Corporate Services

# 2. QA/QC Administrative Program

The licensee's program for administering the QA/QC program was inspected. This included program boundary definition, QA/QC procedure control and the mechanism for evaluating the QA/QC program, to evaluate compliance with FSAR, Appendix D, Section D.7, "Operating QA Plan."

a. Documents Reviewed

QAD 1301.1, Rev. 3, 10/1/79, QA Directives QAD 1301.2, Rev. 2, 11/1/77, Administrative Control Procedures QAD 1301.3, Rev. 1, 11/1/77, Managerial Reporting of QA Program Status QAD 1301.3, Rev. 3, 4/2/79, Quality Assurance Program Boundary QAD 1305.1, Rev. 1, 11/1/77, Plant Procedures/Instructions ACP 1402.2, Rev. 5, 8/22/79, Revisions to Plant Procedures/ Instructions ACP 1402.4, Rev. 2, 10/10/77, Control of Plant Procedures/ Instructions QAP 1101.1, Rev. 1, 10/2/78, Quality Assurance Program QAP 1101.5, Rev. 0, 12/30/79, QA Group Responsibility QAP 1102.1, Rev. 2, 10/2/78, QA Organization QAP 1102.4, Rev. 0, 12/30/74, QA Personnel Training Program ACP 1405.2, Rev. 1, 7/18/79, Quality Status Reports ACP 1405.3, Rev. 1, 9/6/79, Corrective Action QAP 1101.7, Rev. 1, 7/18/79, Quality Status Reports QAP 1101.7, Rev. 1, 7/18/77, Plant Quality Evaluation Reporting

QAP 1105.1, Rev. 1, 7/20/72, Procedure Preparation Instructions-QA Manuals

QAP 1106.1, Rev. 1, 12/26/78, Manual Control

QAP 1106.4, Rev. 1, 8/31/73, Control of Operating QA Directives, Distribution and Manual Up-dating

QAP 1106.5, Rev. 2, 8/29/77, Control of Document Terminology

b. Findings

Noncompliance

(a) FSAR, Appendix D, Section D.7.5 requires that a directive be prepared which identifies safety related systems, structures and components. QAP 1301.4, Rev. 3, 4/2/79 states in Section 5.1 that "Lists of safety related structures, systems and components applicable to DAEC shall be prepared and maintained so that the status of any item can be determined." It also required that "a system shall be established for the distribution and control of the Safety Related List," and that "Procedures shall be prepared to implement the requirements of the Directive and shall be contained in the 1200 series General Office Administration Control Procedures."

The inspector reviewed the "Safety Classification List," Rev. 0, 1/23/78. This list was identified as "issued for verification" and "for information only." It was also determined that the 1200 series instructions related to the Safety Related List had not been issued. In the performance of safety related activities the licensee has been making a determination whether safety related systems were involved, however, an official Safety Related List was not available. This is considered to be a deficiency.

(b) The following item of noncompliance had been identified by the licensee. FSAR, Appendix D, Section D.7.2 states, "Periodic management review of the Iowa Electric Operating Quality Assurance Program is conducted annually by an independent review body appointed by the President." Directive QAD 1301.3, Rev. 1, 11/1/77 implements this commitment stating that the Chairman of the Board and President shall be responsible for conducting an annual review of the IELP QA Program. To meet this committment a review body known as the Internal Practices Audit Committee (IPAC) had been established. The inspector found that IPAC had performed the last

- 5 -

audit on March 16, 1976, and, therefore, had not met the annual review requirement. The licensee showed the inspector a letter from the Manager, Quality Assurance dated September 7, 1979 which had identified their failure to meet the requirement. The licensee's Safety Committee now conducts bi-annual audits of the QA Program and the results are reported to the Chairman of the Board and President. The licensee plans to revise Section D.7.2 of the FSAR to make it consistent with their current practice.

## c. Discussion

During the past 6-9 months the licensee has initiated several efforts to strengthen their QA program. Organizationally the site QC organization now reports directly to the corporate QA Manager. Other changes have been and are being made which appear to strengthen the overall QA/QC program. The licensee showed the inspector a draft of a new approach to QA/QC planning and organization which is being tried on the DAEC Torus Modification Project. This appeared to be an improvement over previously used methods. There has not yet been enough time to evaluate the implementation and effectiveness of these changes.

### 3. Audit and Inspection Programs

The licensee's program for administering and implementing a QA audit program was inspected. This included the definition of the scope of the audit program, assignment of responsibilities, and identifying and resolving audit findings. Compliance with FSAR, Appendix D, Section D.7, "Operating QA Plan" was evaluated.

### a. Documents Reviewed

QAD 1310.1, Rev. 1, 11/1/77, Plant Inspection
QAD 1318.1, Rev. 2, 11/1/77, DAEC Quality Audit Program
QAD 1318.2, Rev. 2, 2/15/78, Quality Assurance Audit Program
QAP 1118.1, Rev. 2, 5/15/78, Audit Agenda, Plans and Reports
QAP 1118.16, Rev. 1, 4/6/78, Site/Plant Surveillance
QAP 1118.17, Rev. 0, 11/1/76, DAEC and Support Group Audits
ACP 1405.1, Rev. 1, 8/22/79, Internal Quality Audits
ACP 1405.6, Rev. 3, 8/21/79, DAEC Inspection Program
ACP 1405.3, Rev. 1, 9/6/79, Corrective Action

QDD 1450 II, Rev. 0, 2/21/75, Quality Audit

QDD 1450 IV, Rev. 0, 4/1/76, Quality Status

QDD 1450 VIII, Rev. 1, 4/13/78, Qualification and Training of Quality Department Personnel

QDD 1450 IX, Rev. 0, 12/30/77, Inspection Process

Quality Audit Reports: 2512, 2531, 2546, 2560, 2566, 2571, 2572, 2573, 2575, 78-3, 78-9, 78-10, 78-10, 78-21, 79-8, 79-15, 79-17, and 78-18.

### b. Findings

Noncompliance

(a) This item of noncompliance had been identified by the licensee. FSAR Appendix D, Section D.7.16 states "Measures will be established to promptly identify, correct and document conditions adverse to quality." QAD 1318.1 requires deficiencies to be corrected or corrective action planned within 30 days of being reported.

Contrary to the above, appropriate corrective action has not been taken within 30 days on approximately 55 deficiencies found by audits in 1979 and approximately 30 deficiencies in 1978. The licensee has increased his effort to resolve outstanding audit findings, hired a consultant to revamp the audit program and has drafted changes to the pertinent directives, procedures, and instructions. The inspectors will followup on these actions in future inspections.

(b) QAD 1301.3 requires managerial reporting of QA program status utilizing monthly audit status reports which include reports on activities having significant impact on plant quality trends. QAP 1405.2 requires that audit status reports include major nonconformances, major corrective actions and results of audits.

Contrary to the above, a review of status reports for the last few months revealed that they are not being used to highlight significant findings or recurring problems. During this time period the monthly audit status reports did not highlight significant or recurring problems identified such as: installation deficiencies on bolts used to install pipe hangers (Audit Report 2560), and slowness in taking corrective action findings (Audit Report 2573). The inspector noted that other means had been used to bring problems to managements attention. This item is considered to be a deficiency.

(c) The following item of noncompliance was identified by the licensee. QAP 1405.6 states in Section 3.3 that a hold point is a point at which an inspection is required and beyond which work shall not proceed until the inspection has been performed and the results are satisfactory.

Contrary to this requirement, QAR 2560 "Installation of Hilti Kwik-Bolts" describes how the installation of pipe hangers continued for some time even after the licensee determined that the installations were not satisfactory. The Iowa Electric Manager of Quality Assurance subsequently reviewed the QAR and, noting the apparent reluctance of the inspection staff to take stop-work action, wrote a letter to the site QC staff instructing them to initiate and enforce stopwork action.

C. Discussion

The inspector pointed out to the site QC staff that the Quality Audit Schedule did not yet include QAP 1405.9 which was issued in August, 1979.

The inspector noted that in previous months many site audit findings were described in the reports as suggestions and recommendations rather than findings requiring resolution and written responses. Since the Spring of 1979 there has been an increase in the number of audit findings requiring corrective action, and starting in September 1979 the ACP governing "Corrective Action" was revised and is now being followed.

# 4. Offsite Review Committee

The inspector reviewed the administrative procedures governing the Safety Committee functions, including the implementation of those procedures. The procedures and performance were compared with the requirements of Section 6 of the Technical Sepcifications.

a. Documents Reviewed

ACP 1208.0, Rev. 7, 10/4/79, Safety Committee Charter

ACP 1208.1, Rev. 8, 3/01/77, Safety Committee Audit Procedure Safety Committee Meeting Reports: SC-222, SC-224, SC-226, SC-227, SC-228, SC-229, SC-231, SC-236, SC-237. Audit Reports: TA-1 through TA-9

b. Findings

No items of noncompliance or deviations were identifed.

c. Discussion

Neither ACP 1208.0 nor ACP 1208.1 state that audit reports will be submitted to the President within 30 days as required by Technical Specification 6.5.2.10.C. To assure meeting this requirement the procedures should address the subject.

## 5. Offsite Support Staff

The inspector reviewed the procedures governing the offsite support of the DAEC to determine whether functions are performed by qualified personnel in conformance with licensee approved administrative procedures, and FSAR, Appendix D., Section D.7, "Operating QA Plan."

a. Documents Reviewed

ACP 1202.1, Rev. 7, 3/9/79, Design Control ACP 1202.2, Rev. 0, 3/13/78, Design Document Processing ACP 1202.3, Rev. 3, 6/20/79, Design Change Request Preparation ACP 1202.4, Rev. 0, 3/13/78, Design Analysis and Calculations ACP 1202.5, Rev. 0, 3/13/78, Design Verification Program ACP 1202.6, Rev. 0, 3/13/78, Safety Evaluation ACP 1203.1, Rev. 5, 11/15/78, Procurement Control ACP 1203.2, Rev. 0, 3/13/78, Engineering Specifications ACP 1203.3, Rev. 0, 3/13/78, Bid Analysis and Supplier Selection ACP 1203.4, Rev. 1, 11/15/78, Review of Supplier Technical Documents ACP 1203.5, Rev. 0, 5/5/78, Purchasing Procurement Control ACP 1205.1, Rev. 3, 8/23/79, Engineering Support for DAEC Requests QAP 1101.1, Rev. 1, 10/2/78, Quality Assurance Program QAP 1101.5, Rev. 0, 12/30/74, QA Group Responsibility

### b. Findings

No items of noncompliance or deviations were identified.

# 6. Design Changes and Modification Program

The inspector reviewed the Design Change and Modification Program to ascertain whether the licensee is implementing a Quality Assurance Program that is in conformance with the Duane Arnold Energy Center Operational Quality Assurance Plan, ANSI N18.7, (1976) and 10 CFR 50 Appendix B.

The review of documents, listed in paragraph "a" below, included a verification of the following:

- Procedure to control design and modification requests have been established.
- Procedures and responsibilities for design control have been established.
- Responsibilities and controls to assure that design changes and modifications will be incorporated into plant procedures, operator training programs, and plant drawings have been established.
- Channels of communication between design organizations and responsible individuals have been established.
- Controls requiring that implementation of approved design changes be in accordance with approved procedures have been established.
- Methods for reporting design change/modification to the NRC in accordance with 10 CFR 50.59 have been established.
- a. Documents Reviewed

The following procedural documents were reviewed:

ACP 1202.1, Design Control

ACP 1202.2, Design Document Processing

ACP 1202.3, Design Change Request Preparation

ACP 1202.4, Design Analysis and Calculations

ACP 1202.5, Design Verification Program

ACP 1202.6, Safety Evaluation

ACP 1202.7, Control of FSAR and Technical Specification Changes QAD 1303.1, Control of Plant Design and Design Changes ACP 1402.2, Revisions to Plant Procedures/Instructions ACP 1409, Design Change Program

The following closed Design Change Request Packages were reviewed:

- DCR 691 DCR 683
- DCR 695 DCR 741
- DCR 698 DCR 753
- DCR 645

The following open design change request packages were reviewed:

| DCR | 808 | DCR | 871 | DCR | 789 |  |
|-----|-----|-----|-----|-----|-----|--|
| DCR | 839 | DCR | 844 | DCR | 766 |  |
| DCR | 850 | DCR | 782 |     |     |  |

b. Findings

No items of noncompliance or deviations were identified.

- c. Discussion
  - 1) In reviewing the document control system the inspector noted that there is no system for identifying when a document has been or is being modified by a design change. This results in the controlled documents not reflecting the as-built condition of the system until the revised documents are issued.

The inspector has requested the licensee to consider a program whereby any controlled document, e.g. drawings, which have been modified by a design change be identified as such from the time the DCR is approved until the revised documents are distributed.

2) The inspector determined that no individual has been delegated the responsibility for specifying testing and acceptance criteria for design changes.

The inspector has requested the licensee to consider designating, by procedure, any individual who would be responsible for evaluating the necessity for testing and/or appropriate acceptance criteria for design changes.

- 3) The inspector noted that for DCR package #532 approximately two years elapsed between DCR approval and actual implementation of the change with no apparent review to verify that the design documents, used for the DCR, were still current. The inspector's concern, is that when extended periods of time have elapsed between DCR approval and DCR implementation that good engineering practice would be to review all applicable design documents and verify that they are still relevant, which apparently was not done in the above case. The inspector has requested the licensee to consider implementing a procedure which would require a review and verification of all DCR design documents for applicability just prior to the implementation of the change.
- 4) The inspector noted that although a review is conducted to determine the effects of fire on a design change, the effects of the design change on the area where it is to be installed, pertaining to the fire hazards analysis, appears not to be reviewed.

The inspector has requested the licensee to consider including such a review in the overall design change process. Such a review would include an evaluation based on the recommendations of Regulatory Guide 1.120.

5) In reviewing the following DCR packages the inspector noted that the time frame between work being completed on a design change, i.e. MAR signed off, and the package being returned to engineering for close out appeared to be inordinately long.

| DCR# | MAR#  | Work<br>Completed | Package Returned<br><u>To Engineering</u> | dt<br><u>Months</u> |
|------|-------|-------------------|---|---------------------|
| 796  | 23016 | 4/79              | 7/79                                      | 3                   |
| 797  | 23269 | 1/79              | 6/79                                      | 5                   |
| 777  | 23971 | 1/79              | 7/79                                      | 6                   |
| 766  | 2069  | 11/78             | 7/79                                      | 8                   |
| 532  | 8781  | 9/78              | 7/79                                      | 10                  |

The inspector has requested the licensee to consider revising their procedures to include a requirement that DCR packages, on which work is completed, be returned to engineering within a specific amount of time. In addition an engineering procedure should likewise be considered for revision requiring that a returned DCR package be closed and revised documents be issued within a specific amount of time. 6) In reviewing DCR packages the inspector noted that the installallation procedures ran the full gamut of complexity. Realizing that the complexity of an installation procedure is directly related to the work to be performed, none the less, it is felt that a more formalized and standardized procedure for writing such procedures should be considered.

In light of the above the inspector has requested the licensee to consider revising their DCR procedures to include a section relative to installation procedures which would standardize both approach and format.

- 7) The following items were discussed with Engineering to clarify how each item is actually handled. It appears that in each case a change to the procedures would eliminate confusion.
  - a) The 1200 series Administrative Control Procedures indicate that after a DCR has been disapproved by any person in the review chain and after the individuals concerns have been addressed, that the DCR is to be returned to the "appropriate" point in the review cycle. In actuality the DCR is routed again to all persons in the review chain.
  - b) The 1300 series ACP's indicate that responsibility for coordinating design activities between internal and external design groups is to be defined. It does not appear that the 1200 series ACP addressed this subject. The licensee stated that the responsibility for coordinating internal and external design groups is handled contractually on a case by case basis.
  - c) The 1200 series ACP's address "minor" changes to DCR's and a procedure for handling them, however, no mention is made of how major changes are handled. The licensee stated that all changes to DCR's are handled per the procedure for "minor" changes. The only difference between the two is that for "minor" changes the "Field Change Request" is approved and becomes part of the original DCR. For "major" changes the FCR is not approved and the entire DCR is returned to Engineering for evaluation.

# 7. Test and Experiments Program

The inspector reviewed the test and experiments program to verify that the administrative controls and their implementation met the requirements specified in the Duane Arnold Energy Center (DAEC) Technical Specifications and commitments of the DAEC Quality Assurance Program.

### a. Documentation Reviewed and Inspected

The following pertinent Quality Assurance Directives and Administrative Control Procedures were reviewed to verify the establishment of a mechanism for handling requests or proposals for safety related tests and experiments, requirements to utilize approved procedures, assignment of responsibilities for review and approval of test and experiment procedures, establishment of a system for review of proposed tests and experiments to determine whether they are described in the FSAR, assurance that a written safety evaluation is developed for applicable tests and experiments, and assignment of responsibility for reporting all tests and experiments conducted pursuant to 10 CFR 50.59:

QAD 1303.1, Control of Plant Design and Design Changes

QAD 1305.1, Plant Operating Procedures/Instructions

ACP 1408.4, Special Test Procedures

ACP 1402.3, Procedure/Instruction Review and Approval

b. Findings

Noncompliance

(a) 10 CFR 50.59 requires that records of tests and experiments include a written safety evaluation which provide the bases for determination that the change, test or experiment does not involve an unreviewed safety question. Technical Specification 6.5.2.7 further requires the Safety Committee to review safety evaluations for changes, tests or experiments to make the determination. Contrary to the above, while reviewing Special Test Procedure #25 and Safety Committee meeting minutes #115 it was found that the "Safety Analysis" section of the procedure contained no basis, but referred to the Safety Committee minutes for details which state only "reviewed and approved," thereby not providing any basis for making a determination as to whether or not it constitutes an unreviewed safety question.

This item is a deficiency.

(b) 10 CFR Part 50 Appendix B Section II requires documentation of the QA Program by written policies, procedures or instructions which shall be followed. Administrative Control Procedure 1402.3 specifies the review and approval process for Special Test Procedures. Contrary to the above, Special Test Procedure #55 was not reviewed or approved by the Reactor and Plant Performance Engineer as required.

This item is a deficiency.

## 8. Personnel Qualification Program

The inspector reviewed the licensee's administrative controls to ascertain their conformance with regulatory requirements and commitments in the Duane Arnold Energy Center Quality Assurance Plan.

## a. Documentation Reviewed

The inspector reviewed the facility Technical Specifications, Quality Assurance Directives 1301.5, 1310.1, Administrative Control Procedures 1206.1 "NDT Personnel Certification" and 1401.5 "Plant Indoctrination and Training Program" with respect to establishment of minimum educational, experience or qualification requirements and assignments of responsibilities for the following personnel positions:

Principal Operating Staff, First Level Supervisors, Onsite Technical Engineering Staff, Plant Craftsmen, Operators, Non Destructive Testing Personnel, Chemistry Technicians, Personnel Performing Receipt Inspections of Procured Materials and Supplies, and Principal Supervisory Positions in the Licensee's On and Offsite QA Organizations.

## b. Findings

(1) Licensee Identified Item

10 CFR Part 50, Appendix B, Section II states that "This Quality Assurance Program shall be documented by written policies, procedures, or instructions and shall be carried out throughout plant life in accordance with those policies, procedures or instructions," ACP 1401.5 states that "The Assistant Chief Engineer, the Training Coordinator, and the Plant Supervisors shall define the qualifications for each position within their area of responsibility..." Contrary to the above, the qualification requirements of non key supervisory personnel are not specified in the Training Program. This item was identified by the Safety Committee Audits of 1977 and 1979 and no corrective action had been proposed at the time of the inspection.

(2) Unresolved Item

Iowa Electric has committed to comply with ASME codes in the FSAR. Both Section 3 and 11 require that level III NDE inspection personnel be qualified to SNT-TC-1A-1975 by examination. Contrary to this the Supervising Engineer, Construction, has not been certified by examination and has signed various documents as a level III inspector. The question to be resolved is whether he has performed functions required by an NDE level III. The inspector was assured that the actual inspections and reviews have been performed by contractor personnel and that his signature as a level III for the company was not a required function.

However, this item will receive followup review by a specialist from the NRC Regional Office.

## 9. Test and Measurement Equipment Program

The inspector reviewed the licensee's administrative controls and their implementation relative to the control of test and measurement equipment to verify their conformance with Regulatory Requirements and commitments to ANSI N45.2.4-1971 and ANSI N18.7-1972.

#### a. Documentation Reviewed

The following documents were reviewed to verify that controls have been established which set forth the criteria and responsibility for assignment of calibration frequency, formal requirements for marking or identifying calibration status for each piece of equipment, a system which assures that each piece of equipment is calibrated on or before the required date, a written requirement, prohibiting the use of equipment beyond its calibration frequency, which describes controls preventing inadvertent use of such equipment and controls for out-of-calibration equipment and items previously tested or measured using the equipment.

ACD 1312.1, Control of Measuring and Test Equipment

ACP 1406.4, Control of Test Equipment

b. Findings

Unresolved Item

Several items were discovered which gave the impression of inadequate controls over non-surveillance covered instrument calibrations. The computer system which calls out these calibrations also generates a list of test equipment which is beyond it's scheduled calibration date. For the month of September, 1979 this list included 119 items. A review of the list and comparison with equipment in use revealed no out of calibration items currently in use. This is evidently due to the use of calibration stickers and the requirement that they be checked prior to use. It was also discovered that of the installed instruments referenced in Technical Specification 4.6.A.1, one (Bottom Head Drain TI 2713) had a 5 year recalibration period assigned and was scheduled to be recalibrated 5 years and 7 months after its last calibration, the other two (Recirculation Loops A and B TR 4603A&B) were not scheduled for recalibration and did not have a recalibration period assigned. The latter two had been recently calibrated due to major work in the system. The significance of the situation is that it is questionable whether all safety-related readout instruments are in calibration since there appears to be no way to administratively verify that calibration of all non-surveillance covered instruments is being done.

No items of noncompliance or deviations were identified.

## 10. Surveillance Testing and Calibration Control Program

The inspector examined controls for surveillance testing, calibration and inspection required by Section 4 of the Technical Specifications; inservice inspection of pumps and valves as described in 10 CFR 50.55a.(g); and calibration of safety related instrumentation not specifically controlled by Technical Specifications. A review was conducted of the master surveillance and calibration schedules for test frequency, group responsibility and status. Responsibility has been assigned for approval, performance, acceptance criteria verification, and maintaining an up-to-date schedule.

a. Documentation Reviewed

ACD 1311.1, Plant Surveillance Program

ACP 1408.3, Surveillance Program

b. Findings

Noncompliance

One apparent item of noncompliance was identified in this area, an infraction as set forth in Appendix A, Paragraph C. 10 CFR 50 Appendix B requires that QA Program implementing instructions, procedures and policies be followed.

ACD 1311.1 states "The Surveillance Program shall implement the requirements of the DAEC Technical Specifications." Further, "The Surveillance Program shall identify all surveillance tests by a number, the organization responsible for performing each activity, the frequency of performance, and the test title." Also, "The program shall establish controls to assure that surveillance tests and inspection results are evaluated to determine that test requirements have been satisfied, long-range effects are evaluated, actions taken where deficiencies are noted, and the records are adequate."

Duane Arnold Energy Center Technical Specification 3.64.6.A.1 sets forth the Limiting Condition for operation and related surveillance requirement. As follows: "The average rate of reactor coolant temperature change during normal heatup or cooldown shall not exceed 100 Q°F/hr when averaged over a one-hour period. ...the following temperatures shall be permanently logged at least every 15 minutes until the difference between any two readings taken over a 45 minute period is less than 5 Q°F: Bottom head drain, Recirc. loops A and B."

Contrary to this, Technical Specification Surveillance requirement 4.6.A.1 is not controlled by the surveillance program but by the Integrated Plant Operating Instructions, nor is it included in the Master Surveillance Schedule. As discussed in paragraph 9 an additional concern is that all instruments utilized to provide readouts which are monitored to assure Technical Specification compliance be controlled by an adequate system.

## 11. Maintenance Program

The inspector reviewed the licensee's Maintenance Program to ascertain whether the QA Program relating to maintenance activities is being conducted in accordance with the Operational Quality Assurance Plan, 10 CFR 50 Appendix B requirements and commitments in the QA Plan.

The following items were considered during this review; written procedures have been established for initiating requests for routine and emergency maintenance; criteria and responsibilities have been designated for performing inspection of work during maintenance activities; provisions and responsibilities have been established for the identification of appropriate inspection hold points; methods and responsibilities have been designated for performing testing following maintenance work; methods and responsibilities for equipment control have been clearly defined; and administrative controls for special processes have been established.

The inspector also reviewed the licensee's Preventive Maintenance Program and verified that a written program has been established which includes; responsibility for the program, a master schedule, and provisions for documentation and review upon completion of activities.

a. Documentation Reviewed

ACP 1401.4, Control of Plant Work

ACP 1404.5, Hold-Off Procedure

ACP 1406.1, Preventive Maintenance Program

ACP 1406.2, Maintenance Procedures

ACP 1406.7, Welding, Cutting, and Hot Work

QAD 1305.3, Control of Plant Work

QAD 1309.1, Welding

QAD 1309.2, Nondestructive Examination

QAD 1314.1, Equipment Status Control Procedures

QAD 1319.1, Mechanical and Electrical Maintenance

QAD 1319.2, Mechanical and Electrical Corrective Maintenance Repair

b. Findings

### Noncompliance

During the review of the licensee's control of plant work, the inspector identified discrepancies relating to the implementation of procedures. The discrepancies identified are as follows:

(a) ACP 1401.4 "Control of Plant Work" Section 6.3 requires that the originator's supervisor shall review Maintenance Activity Requests (MAR) and if he approves he shall initial the MAR in the lower left corner of Section 1.

Contrary to this ACP the following safety related maintenance activity requests were not initialed by the originator's supervisor indicating his approval: MAR 24560/SR79-197; MAR 24999/SR 78-442; MAR 24998/ SR78-443; MAR24993/ SR78-440; MAR 24997/SR 78-431; MAR 24825/SR 78-284; MAR 24688/SR79-289.

(b) ACP 1404.5 "Hold-off Procedure" Section 5.3 requires the individual, or responsible supervisor, for whom the Hold card or Warning tag is installed shall verify that the proper card or tag is in place with his name and shall verify the proper configuration of the system prior to initiation of work.

Discussion with plant personnel indicates that the above requirement is not always complied with. Specifically, during the review of maintenance activity request MAR 25323 which involved repairing a leak on the HPCI/RCIC drain to the main condenser, four safety related valves (CV2411, CV2212, V22-9 and V24-28) were isolated and tags were hung on these valves. Discussion with personnel for whom the valves were tagged out revealed that installation of tags was not verified for two valves (V 22-9 and V 24-28). The inspector informed the licensee representatives that the above examples of failure to follow procedures is considered an item of noncompliance.

With regard to section b. above, the inspector pointed out that <u>independent verification</u> of tagging of equipment as required by ACP 1404.5 is consistent with section 5.1.5 of ANSI N 18.7.

#### c. Discussion

For a number of MAR's, section 4 of the MAR had not been completely filled out. For example, for MAR 24946/SR79-001, the isolation and radiation protection blocks were marked "yes" but the time and initials spaces were not filled in. This was discussed in the exit interview.

## 12. Document Control Program

The inspector reviewed the program to ascertain whether the licensee is implementing a QA Program relating to document control that is in conformance with Technical Specifications, regulatory requirements, commitments in the FSAR and applicable industry guides and standards.

# a. Documents Reviewed

QAD 1306.1, Document Control

ACP 1402.2, Revisions to Plant Procedures/Instructions

ACP 1402.3, Procedure/Instruction Review and Approval

ACP 1409.2, Control of Design Documents

ACP 1409.3, Plant Control Documents

ACP 1207.3, Design Document Control

ACP 1202.2, Design Document Processing

ACP 1207.4, Distribution of Routine Documents

b. Findings

Noncompliance

10 CFR 50, Appendix B, Criterion VI states in part that measures shall assure that documents such as drawings are distributed to and used at the location where the prescribed activity is performed. Also, QAP 1306.1 revision 1 dated 11/1/77 section 5.6 requires that all design documents shall be controlled as necessary to preclude the use of outdated or inappropriate documents.

Contrary to the above requirements, the inspector found that two drawings in the Control Room area stamped "Controlled Document" were outdated. The drawings in question were P & ID M115 revision 7 and P&ID M149 revision 18. The DAEC Master Document List dated 10/2/79 indicates that the current revision for these drawings is 8 and 19 respectively.

This is considered to be an item of noncompliance.

The inspector noted, however, that the DAEC Document Room had current revisions for both drawings.

c. Discussion

The following items were discussed with licensee representatives:

- (1) ACP 1400 Cross Reference/Administrative Control Procedure Manual to Operating Quality Assurance Manual is not being maintained current. The following procedure's have been deleted but are still being referenced in ACP 1400: ACP 1401.2, 1402.5, 1406.6 and 1409.4. Also, the 1400 series procedures make reference to 1300 series directives which are no longer applicable.
- (2) ACP 1402.3 "Procedure/Instruction Review and Approval" section 6.1.4 states that procedures/instructions should be reviewed at least on an annual basis. The inspector stated that plant procedures/instructions must be reviewed no less frequently than every two years to determine if changes are necessary or desirable. A revision of a procedure constitutes a procedure review. This requirement is stated in section 5.2.1.5 of ANSI N18.7-1976.
- (3) ACP 1401.1 dated 5/3/77 states that the Quality Supervisor shall have overall responsibility and authority for preparing and revising ACP's. With the new organization structure, where the Quality Supervisor reports to the Corporate Office, it appears that this responsibility is no longer valid since he is now independent of the station organization.

Station ACP's need to be reviewed to determine their applicability to the restructured QA organization.

## 13. Records Program

The records program was reviewed to ascertain whether the licensee is implementing a program relating to the control of records that is in conformance with Regulatory requirements and applicable plant procedures and directives.

#### a. Documents Reviewed

The following documents were reviewed to verify that requirements and provisions to maintain records have been established, that record storage controls have been established and that provisions have been made which establish the retention periods for records.

ACP 1402.1, Records Management

QAD 1317.1, Records Management

ACP 1207.1, Engineering Record Control

ACP 1297.2, Corporate Services Records Control

### b. Findings

Unresolved Item

QAD 1317.1, rev. 1, "Records Management" dated 2/15/78 requires that retention periods of quality assurance records shall begin on the date upon which satisfactory operation of the item has been demonstrated.

This directive also requires that these records shall be stored and controlled in accordance with written procedures based on the applicable guidance of ANSI N 45.7.9 - 1974.

During the review of Maintenance Activity Request records, the inspector was unable to find plant procedures that address how these records are controlled prior to the time that they are microfilmed.

At the exit interview, the inspector stated that this item will be reviewed in a subsequent inspection.

The inspector noted however, that microfilmed maintenance activity requests are being stored and controlled in accordance with applicable requirements at the plant and at the Corporate Services Department.

No items of noncompliance or deviations were identified.

## 14. Housekeeping/Cleanliness Program

The inspector reviewed the licensee's Housekeeping and Cleanliness Program to verify that the licensee is implementing adequate housekeeping and cleanliness controls to assure that the quality of safety related systems is not degraded. Items considered during the review were: Control of housekeeping during work activities; establishment of housekeeping zones; control of conbustible material and debris; establishment of cleanliness classifications for plant systems; and establishment of requirements for material accountability in critical clean areas.

a. Documents Reviewed

QAD 1309.3, Cleaning Procedures

QAD 1319.3, Cleanliness Control

QAD 1319.4, Housekeeping

CCP-1, Cleanliness Control Procedure

HCP-1, Housekeeping Control Procedure

b. Findings

Housekeeping and Cleanliness procedures appear adequate and appear to meet the requirements of ANSI N 18.7 and ANSI N 45.2.3.

A physical inspection of the plant areas will be conducted during a subsequent inspection.

No items of noncompliance or deviations were identified.

### 15. Procurement Program

The inspector reviewed the program to verify that the administrative controls and their implementation were within the requirements and commitments as set forth in the DAEC Operating Quality Assurance Manual, ANSI N 18.7-1972 and ANSI N 45.2.13.

a. Documentation Reviewed

The following directives and instructions were reviewed to verify the establishment of administrative controls for procurement documentation for safety related items, assignment of responsibilities and an acceptable method of qualifying a vendor, supplier or contractor.

- QAD 1304.1, Procurement Program
- ACP 1203.1, Procurement Control
- ACP 1203.2, Engineering Specifications
- ACP 1203.3, Bid Analysis and Supplier Selection

ACP 1203.4, Review of Supplier Technical Documents

ACP 1403.1, Procurement Process

### b. Findings

The inspector confirmed that administrative controls have been written which comply with the requirements of the DAEC Operating Quality Assurance Manual. The implementation of these controls will be inspected during a subsequent inspection.

No items of noncompliance or deviations were identified.

## 16. Receipt, Storage and Handling of Equipment and Materials Program

The inspector reviewed the program to verify that the administrative controls and their implementation were in conformance with regulatory requirements, the DAEC Quality Assurance Plan, ANSI N18.7-1972 and ANSI N45.2.2-1972.

#### a. Documents Reviewed

QAD 1307.1, Receiving Inspection

QAD 1307.2, Vendor Qualification and Control

QAD 1308.1, Materials, Parts and Components Identification Requirements

QAD 1308.2, Inventory Control

QAD 1403.2, Receiving

ACP 1403.3, Materials, Parts and Components Identification and Inventory Control

ACP 1403.4, Storage

ACP 1403.5, Preservation

ACP 1403.6, Storeroom Issues

ACP 1403.7, Shipping

b. Findings

The inspector identified a number of concerns relating to requirements for level B storage, storage of items with limited life requirements and items requiring special storage requirements.

In a letter from S. J. Tuthill to J. G. Keppler, dated March 15, 1976, the licensee has committed to preserve and store safety-

related componenets in accordance with QAD 1313.1, ACP 1403.4, and ACP 1403.5 by December 31, 1979. Implementation of these procedures will be inspected during a subsequent inspection.

No items of noncompliance or deviations were identified.

## 17. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed throughout the report.

# 18. Exit Interview

The inspectors met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on November 20, 1979. The purpose and scope of the inspection was summarized and the inspectors then discussed the enforcement findings in each area.

Certain other items were brought to the attention of the licensee. While the items had not resulted in items of noncompliance that were detected, they do represent weaknesses in the program that could result in enforcement actions. The items were discussed during the exit interview and the licensee agreed to evaluate them.

Actions taken regarding weaknesses in the program and the unresolved items will be reviewed in subsequent followup inspections.

Licensee rèpresentatives had no significant questions or comments regarding the findings which were discussed.