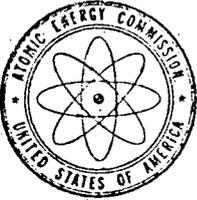


RO files



UNITED STATES  
ATOMIC ENERGY COMMISSION  
DIVISION OF COMPLIANCE  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

TELEPHONE  
(312) 858-2660

August 9, 1973

Iowa Electric Light and Power Company  
ATTN: Mr. Charles W. Sandford  
Vice President, Engineering  
Security Building  
P. O. Box 351  
Cedar Rapids, Iowa 52405

Docket No. 50-331

Gentlemen:

This refers to the inspection conducted by Messrs. Hunnicutt and Boyd of this office on July 1 - 2 and 11 - 12, 1973, of activities at the Duane Arnold site authorized by AEC Construction Permit No. CPPR-70 and to the discussion of our findings held by the inspector with Messrs. Hunt and Hammond of your staff at the conclusion of the inspection on July 2, 1973, and with Messrs. Hammond, Cook and other members of your staff at the conclusion of the inspection on July 12, 1973.

Areas examined during this inspection included functional testing of the core spray system, cold functional testing, hot functional testing, power ascension testing, containment leak rate testing, operating organization quality assurance program, operating instructions, preoperational/acceptance testing items, and initial fuel loading procedures. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with plant personnel, and observations by the inspectors.

No items of noncompliance with AEC requirements were identified within the scope of this inspection.

A copy of our report of this inspection is enclosed. In accordance with Section 2.790 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter with the enclosed inspection report will be placed in the AEC's Public Document Room. If the inspection report contains information which you or your contractors believe to be proprietary, it is necessary that you submit a written application to this office, within 20 days of the date of this letter, requesting that such information be withheld from public disclosure. If such an application is submitted, it must identify the basis for which information is claimed to

*Handwritten signature and number 50/331*

Iowa Electric Light and  
Power Company

- 2 -

August 9, 1973

be proprietary and should be prepared so that proprietary information identified is contained in a separate part of the document since the application, excluding this separate part, will also be placed in the Public Document Room. If we do not receive an application to withhold information, or are not otherwise contacted within the specified time period, the enclosed report will be placed in the Public Document Room with a copy of this letter.

Unless you wish to make application to withhold information, no reply to this letter is necessary; however, should you have questions concerning this inspection, we will be glad to discuss them with you.

Sincerely yours,

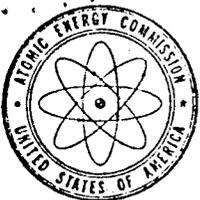
Boyce H. Grier  
Regional Director

Enclosure:

RO Inspection Rpt No. 050-331/73-07

cc: G. Hunt, Chief Engineer  
DAEC Site

bcc: RO Chief, FS&EB  
RO:HQ (4)  
Licensing (4)  
DR Central Files  
RO Files  
Regions I & II  
PDR  
Local PDR  
NSIC  
DTIE  
OGC, Beth, P-506A



UNITED STATES  
ATOMIC ENERGY COMMISSION

DIVISION OF COMPLIANCE  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

TELEPHONE  
(312) 858-2660

A. RO Inspection Report No. 050-331/73-07

Transmittal Date : August 9, 1973

Distribution:  
RO Chief, FS&EB  
RO:HQ (5)  
DR Central Files  
Regulatory Standards (3)  
Licensing (13)  
RO Files

Distribution:  
RO Chief, FS&EB  
RO:HQ (4)  
L:D/D for Fuel & Materials  
DR Central Files  
RO Files

B. RO Inquiry Report No. \_\_\_\_\_

Transmittal Date : \_\_\_\_\_

Distribution:  
RO Chief, FS&EB  
RO:HQ (5)  
DR Central Files  
Regulatory Standards (3)  
Licensing (13)  
RO Files

Distribution:  
RO Chief, FS&EB  
RO:HQ  
DR Central Files  
RO Files

C. Incident Notification From: \_\_\_\_\_

(Licensee & Docket No. (or License No.))

Transmittal Date : \_\_\_\_\_

Distribution:  
RO Chief, FS&EB  
RO:HQ (4)  
Licensing (4)  
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RO Files

Distribution:  
RO chief, FS&EB  
RO:HQ (4)  
L:D/D for Fuel & Materials  
DR Central Files  
RO Files

U. S. ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

RO Inspection Report No. 050-331/73-07

Licensee: Iowa Electric Light and Power Company  
Security Building  
P. O. Box 351  
Cedar Rapids, Iowa 52405

Duane Arnold Energy Center  
Palo, Iowa

License No. CPPR-70  
Category: B

Type of Licensee: BWR, 538 Mwe

Type of Inspection: Routine, Unannounced

Dates of Inspection: July 1 - 2 and 11 - 12, 1973

Dates of Previous Inspection: May 16 - 18, 1973

Principal Inspector: *D. M. Hunnicutt*  
for D. C. Boyd (July 11 and 12)

8/8/73  
(Date)

Accompanying Inspector: *D. M. Hunnicutt*  
D. M. Hunnicutt (July 1 and 2)

8/8/73  
(Date)

Other Accompanying Personnel: None

Reviewed By: *D. M. Hunnicutt*  
D. M. Hunnicutt, Chief  
Reactor Testing and Startup Branch

8/8/73  
(Date)

## SUMMARY OF FINDINGS.

### Enforcement Action

There were no enforcement actions identified as a result of this inspection.

### Licensee Action on Previously Identified Enforcement Matters

All previously identified enforcement matters have been satisfactorily resolved.

### Design Changes

Comments relative to design changes will be identified in reports prepared by the Directorate of Regulatory Operations, Construction Branch.

### Unusual Occurrences

No unusual occurrences were determined or identified as a result of this inspection.

### Other Significant Findings

#### A. Current Findings

##### Status Report

1. Engineering - 97.5% complete.
2. Construction - 90.5% complete.
3. Fuel load target date - September 1973.
4. Preoperational/acceptance test procedures written - 92%.
5. Preoperational/acceptance test procedures approved for performance - 50%.
6. Preoperational/acceptance test procedures performed - 12%.

#### B. Status of Previously Reported Unresolved Items

The inspector's determination of the status of previously identified outstanding or unresolved items are as follows:

1. Initiation of Safety Committee Functions

This committee is now functional. (Paragraph 2.f)

2. Plant Protective System Channel Response Time Measurements

Clarification of the testing requirements has been achieved.  
This item is considered to be closed. (Paragraph 2.g)

Management Interview (July 2, 1973)

A management interview was conducted with Messrs. G. Hunt and E. Hammond on July 2, 1973. The inspector stated that observations indicated that the licensee had verified the status of equipment and instrumentation and performed the core spray test in accordance with the approved procedure. The licensee and the inspector agreed that the visual appearance of the core spray patterns indicated that the entire core area was adequately covered. However, the final results will be determined subsequent to evaluation of the films taken during the core spray tests. (Paragraph 1.b)

Management Interview (July 12, 1973)

Persons Present

Iowa Electric Light and Power Company

- E. Hammond, Assistant Chief Engineer
- D. Wilson, Results Engineer
- H. Rehrauer, Project Engineering Supervisor
- G. Cook, Quality Assurance Manager
- D. Essig, Quality Assurance Inspector

Directorate of Regulatory Operations, Region III

D. Boyd, Principal Inspector

Subjects Discussed

The following subjects were discussed:

- A. Preoperational/acceptance testing status. (Paragraph 1)
- B. Cold functional testing procedure. (Paragraph 3.a)
- C. Hot functional testing procedure. (Paragraph 3.b)
- D. Power ascension testing procedure. (Paragraph 3.c)

- E. Integrated containment leak rate testing. (Paragraph 3.d)
- F. Operating organization quality assurance program. (Paragraph 3.e)
- G. Plant operating instructions. (Paragraph 3.f)
- H. Miscellaneous item from the inspector's outstanding inspection item list. (Paragraph 5)
- I. Operational Readiness Activities

- 1. Preoperational/Acceptance Testing Status

This testing program is in progress and is approximately 12% complete. (Paragraph 1)

- 2. Cold Functional Testing Procedure

Final assimilation of reviewer comments is in progress. This procedure will be available for RO:III review during the month of August 1973. (Paragraph 2.a)

- 3. Hot Functional Testing Procedure

Final assimilation of reviewer comments is in progress. This procedure will be available for RO:III review during the month of August 1973. (Paragraph 2.a)

- 4. Power Ascension Testing

The test specifications have been issued. A Regulatory review indicates several areas requiring further consideration. (Paragraph 2.b)

- 5. Integrated Leak Rate Testing

The preparation of the approved copy of this procedure is in progress. The test is tentatively scheduled to be performed in September 1973. (Paragraph 2.c)

- 6. Operating Organization Quality Assurance

The administrative procedures (directives) manual is in final preparation. This portion of the operating organization quality assurance program will be available for RO:III review during the month of August 1973. (Paragraph 2.d)

7. Plant Operating Instructions

The major portion of the plant operating instructions and systems descriptions have been approved and issued. Regulatory review is in progress. (Paragraph 2.e)

REPORT DETAILS

Persons Contacted

Iowa Electric Light and Power Company (IEL&P)

- L. Root, DAEC Assistant Project Manager
- G. Hunt, DAEC Chief Engineer
- E. Hammond, DAEC Assistant
- H. Rehrauer, IEL&P Project Engineering Supervisor
- D. Essig, IEL&P Quality Assurance Control Engineer
- G. Cook, IEL&P Quality Assurance Manager
- D. Wilson, Results Engineer
- D. Moen, DAEC Technical Staff Supervisor
- D. Flanagan, IEL&P Project Engineer

General Electric Company (GE)

- J. Nickle, GE Start-up Engineer
- M. May, GE Start-up Engineer

Nuclear Services Corporation (NSC)

- G. Engle, DAEC Technical Staff (on contract from NSC)

1. Preoperational/Acceptance Test Program Status

- a. The inspector met with the DAEC Results Engineer and other members of DAEC management to determine the current status of this program. As of July 12, 1973, the status is as follows:

	<u>Preoperational Tests</u>	<u>Acceptance Tests</u>
Approved by Iowa Electric	25	26
Bechtel Startup preparing approval copy	0	2
Initial Review by Iowa Electric in progress	4	3
Initial Review by Bechtel in progress	15	14

	<u>Preoperational Tests</u>	<u>Acceptance Tests</u>
Procedures remaining to be written	4	5
Tests complete - review complete	5	3
Tests complete - under review	5	2
Tests in progress	7	3
Tests not yet started	38	45

- b. A Region III inspector observed portions of the preoperational testing of the core spray system which was performed on July 1 and 2, 1973. The purpose of this test was to demonstrate that the core spray system would function automatically and reliably in the event of a loss-of-coolant accident and that all core spray control and indicating components performed within the specified limits.

The inspector verified that the prerequisites to performing the test had been completed and signed off as required by the procedure.

A preliminary test was conducted on July 1, 1973, to assure that valve lineups were correct and that equipment and instrumentation installations and special test equipment were functional and operated as required. Minor discrepancies identified during the preliminary test were corrected satisfactorily prior to start of the official test.

On July 2, 1973, the inspector observed the core spray density patterns during portions of the test. The patterns appeared to meet the acceptable density criteria; however, the final acceptability will be determined by an analysis of the photographs (taken directly above the center of the core) of the core spray patterns. These photographs are included in the preoperational test package records.

## 2. Operational Readiness Activities

### a. Cold and Hot Functional Testing

Discussions with IEL&P and DAEC management indicates that the preparation of these integrated system functional testing

programs are progressing on schedule. Tentatively both programs will be ready for RO:III review during the month of August 1973.

b. Power Ascension Testing

An RO:III review of the start-up test specifications prepared by the General Electric start-up organization has resulted in several areas requiring further discussion and clarification. These areas, which appear to deviate from the promulgated guide for the planning of initial start-up programs,<sup>1/</sup> relates to the calibration of control rods; prediction of the control rod configuration at initial criticality; and plant response to generator trips at various power levels. RO:III will pursue these items in future inspections.

c. Integrated Leak Rate Testing

Drafts of the test procedure have been provided to Regulatory Operations and to the Directorate of Reactor Licensing (L) for review. Pending the resolution of reviewer comments and the approval of the pertinent technical specifications, an approved procedure will be provided for final RO:III review. According to the licensee, the test is tentatively scheduled to be performed in September 1973.

d. Operating Organization Quality Assurance Program

The preparation of this program and the implementing procedures are progressing on schedule. According to the licensee, the operating Quality Assurance Manual (directives) will be ready for RO:III review by the end of July 1973.

The inspector reaffirmed that RO:III expects to see this program and the implementing procedures approved and the program implemented prior to initial fuel loading. The licensee stated that this is their understanding and intent.

e. Plant Operating/Instructions

The preparation, review, and approval of the plant operating instructions is progressing on schedule. During the inspection the inspector was provided with nine volumes of approved plant operating instructions and three volumes of integrated plant operating instructions. An RO:III review of these is in progress.

<sup>1/</sup> USAEC Guide for the Planning of Initial Startup Programs, 12-7-70.

The inspector reaffirmed that RO:III expects to see a complete set of approved plant operating instructions prior to initial fuel loading. The licensee stated that this is their understanding and intent.

f. Safety Committee

The inspector's review of documentation and discussions with members of Iowa Electric Light and Power management establishes that; the safety committee charter is approved; all safety committee members and their alternates have been identified; and a listing of prime consultants to the safety committee has been prepared. These records establish that the safety committee is now capable of functioning as described in the facility final safeguards analysis report, and in accordance with the facility's proposed technical specifications.

g. Reactor Protection System Channel Response Time Measurements

Discussions between the licensee, the inspector, and members of the Directorate of Reactor Licensing, have resulted in the clarification of the requirements to satisfy proposed Technical Specification 3.1 in regard to the measurement of channel response times. Basically, the channel response time measurement will be made from the time of actuation of the sensor contacts or trip point to the time of actuation of the scram solenoid relay. The verification of these channel response times will be made initially during the performance of preoperational test No. 58, Reactor Protection System, and will be verified periodically in accordance with the facility technical specifications. The functioning and calibration of the various protective system instruments and sensors will be performed in accordance with the surveillance requirements currently being prepared for inclusion in the facility technical specifications.

3. Miscellaneous Items

Limitorque Valve Operator Program

According to the licensee, this program, which was discussed during a previous inspection,<sup>2/</sup> is in the final stages of completion. The program includes all safety related limitorque valves and provides the records and documentation to assure that each valve is installed

<sup>2/</sup> RO Inspection Report No. 050-331/73-06.

and set up to operate in accordance with the engineered recommendation. The records, according to the licensee, will provide the engineered recommendations for the maximum and minimum torque switch settings and the recommended sizing of the thermal overload protective devices. These settings will be compared to the verified actual settings to assure that all safety related valves are set to operate in accordance with the engineered recommendations. The ultimate verification of the operability of these valves will be attained during the preoperational testing, the cold functional testing, the hot functional testing, and the start-up testing programs identified for this facility.

The inspector stated that a Regulatory review of above valve setting data, and a finding of adequacy was required prior to initial loading. The licensee stated that these records would be provided to the inspector for review.

DR Central



UNITED STATES  
ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

TELEPHONE  
(312) 858-2660

August 9, 1973.

Iowa Electric Light and Power Company  
ATTN: Mr. Charles W. Sandford  
Vice President, Engineering  
Security Building  
P. O. Box 351  
Cedar Rapids, Iowa 52405

Docket No. 50-331

Gentlemen:

This refers to the inspection conducted by Messrs. Hunnicutt and Boyd of this office on July 1 - 2 and 11 - 12, 1973, of activities at the Duane Arnold site authorized by AEC Construction Permit No. CPPR-70 and to the discussion of our findings held by the inspector with Messrs. Hunt and Hammond of your staff at the conclusion of the inspection on July 2, 1973, and with Messrs. Hammond, Cook and other members of your staff at the conclusion of the inspection on July 12, 1973.

Areas examined during this inspection included functional testing of the core spray system, cold functional testing, hot functional testing, power ascension testing, containment leak rate testing, operating organization quality assurance program, operating instructions, preoperational/ acceptance testing items, and initial fuel loading procedures. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with plant personnel, and observations by the inspectors.

No items of noncompliance with AEC requirements were identified within the scope of this inspection.

A copy of our report of this inspection is enclosed. In accordance with Section 2.790 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter with the enclosed inspection report will be placed in the AEC's Public Document Room. If the inspection report contains information which you or your contractors believe to be proprietary, it is necessary that you submit a written application to this office, within 20 days of the date of this letter, requesting that such information be withheld from public disclosure. If such an application is submitted, it must identify the basis for which information is claimed to

176

Iowa Electric Light and  
Power Company

- 2 -

August 9, 1973

be proprietary and should be prepared so that proprietary information identified is contained in a separate part of the document since the application, excluding this separate part, will also be placed in the Public Document Room. If we do not receive an application to withhold information, or are not otherwise contacted within the specified time period, the enclosed report will be placed in the Public Document Room with a copy of this letter.

Unless you wish to make application to withhold information, no reply to this letter is necessary; however, should you have questions concerning this inspection, we will be glad to discuss them with you.

Sincerely yours,

Boyce H. Grier  
Regional Director

**Enclosure:**

RO Inspection Rpt No. 050-331/73-07

cc: G. Hunt, Chief Engineer  
DAEC Site

bcc: RO Chief, FS&EB  
RO:HQ (4)  
Licensing (4)  
DR Central Files  
RO Files  
Regions I & II  
PDR  
Local PDR  
NSIC  
DTIE  
OGC, Beth, P-506A



UNITED STATES  
ATOMIC ENERGY COMMISSION  
DIVISION OF COMPLIANCE  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

TELEPHONE  
(312) 858-2660

A. RO Inspection Report No. 050-331/73-07

Transmittal Date : August 9, 1973

Distribution:  
RO Chief, FS&EB  
RO:HQ (5)  
DR Central Files  
Regulatory Standards (3)  
Licensing (13)  
RO Files

Distribution:  
RO Chief, FS&EB  
RO:HQ (4)  
L:D/D for Fuel & Materials  
DR Central Files  
RO Files

B. RO Inquiry Report No. \_\_\_\_\_

Transmittal Date : \_\_\_\_\_

Distribution:  
RO Chief, FS&EB  
RO:HQ (5)  
DR Central Files  
Regulatory Standards (3)  
Licensing (13)  
RO Files

Distribution:  
RO Chief, FS&EB  
RO:HQ  
DR Central Files  
RO Files

C. Incident Notification From: \_\_\_\_\_  
(Licensee & Docket No. (or License No.)

Transmittal Date : \_\_\_\_\_

Distribution:  
RO Chief, FS&EB  
RO:HQ (4)  
Licensing (4)  
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Distribution:  
RO chief, FS&EB  
RO:HQ (4)  
L:D/D for Fuel & Materials  
DR Central Files  
RO Files

U. S. ATOMIC ENERGY COMMISSION  
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

RO Inspection Report No. 050-331/73-07

Licensee: Iowa Electric Light and Power Company  
Security Building  
P. O. Box 351  
Cedar Rapids, Iowa 52405

Duane Arnold Energy Center  
Palo, Iowa

License No. CPPR-70  
Category: B

Type of Licensee: BWR, 538 Mwe

Type of Inspection: Routine, Unannounced

Dates of Inspection: July 1 - 2 and 11 - 12, 1973

Dates of Previous Inspection: May 16 - 18, 1973

Principal Inspector: *D. M. Hunnicutt*  
for D. C. Boyd (July 11 and 12)

8/8/73  
(Date)

Accompanying Inspector: *D. M. Hunnicutt*  
D. M. Hunnicutt (July 1 and 2)

8/8/73  
(Date)

Other Accompanying Personnel: None

Reviewed By: *D. M. Hunnicutt*  
D. M. Hunnicutt, Chief  
Reactor Testing and Startup Branch

8/8/73  
(Date)

## SUMMARY OF FINDINGS

### Enforcement Action

There were no enforcement actions identified as a result of this inspection.

### Licensee Action on Previously Identified Enforcement Matters

All previously identified enforcement matters have been satisfactorily resolved.

### Design Changes

Comments relative to design changes will be identified in reports prepared by the Directorate of Regulatory Operations, Construction Branch.

### Unusual Occurrences

No unusual occurrences were determined or identified as a result of this inspection.

### Other Significant Findings

#### A. Current Findings

##### Status Report

1. Engineering - 97.5% complete.
2. Construction - 90.5% complete.
3. Fuel load target date - September 1973.
4. Preoperational/acceptance test procedures written - 92%.
5. Preoperational/acceptance test procedures approved for performance - 50%.
6. Preoperational/acceptance test procedures performed - 12%.

#### B. Status of Previously Reported Unresolved Items

The inspector's determination of the status of previously identified outstanding or unresolved items are as follows:

1. Initiation of Safety Committee Functions

This committee is now functional. (Paragraph 2.f)

2. Plant Protective System Channel Response Time Measurements

Clarification of the testing requirements has been achieved.  
This item is considered to be closed. (Paragraph 2.g)

Management Interview (July 2, 1973)

A management interview was conducted with Messrs. G. Hunt and E. Hammond on July 2, 1973. The inspector stated that observations indicated that the licensee had verified the status of equipment and instrumentation and performed the core spray test in accordance with the approved procedure. The licensee and the inspector agreed that the visual appearance of the core spray patterns indicated that the entire core area was adequately covered. However, the final results will be determined subsequent to evaluation of the films taken during the core spray tests. (Paragraph 1.b)

Management Interview (July 12, 1973)

Persons Present

Iowa Electric Light and Power Company

E. Hammond, Assistant Chief Engineer  
D. Wilson, Results Engineer  
H. Rehrauer, Project Engineering Supervisor  
G. Cook, Quality Assurance Manager  
D. Essig, Quality Assurance Inspector

Directorate of Regulatory Operations, Region III

D. Boyd, Principal Inspector

Subjects Discussed

The following subjects were discussed:

- A. Preoperational/acceptance testing status. (Paragraph 1)
- B. Cold functional testing procedure. (Paragraph 3.a)
- C. Hot functional testing procedure. (Paragraph 3.b)
- D. Power ascension testing procedure. (Paragraph 3.c)

- E. Integrated containment leak rate testing. .(Paragraph 3.d)
- F. Operating organization quality assurance program. (Paragraph 3.e)
- G. Plant operating instructions. (Paragraph 3.f)
- H. Miscellaneous item from the inspector's outstanding inspection item list. (Paragraph 5)
- I. Operational Readiness Activities

- 1. Preoperational/Acceptance Testing Status

This testing program is in progress and is approximately 12% complete. (Paragraph 1)

- 2. Cold Functional Testing Procedure

Final assimilation of reviewer comments is in progress. This procedure will be available for RO:III review during the month of August 1973. (Paragraph 2.a)

- 3. Hot Functional Testing Procedure

Final assimilation of reviewer comments is in progress. This procedure will be available for RO:III review during the month of August 1973. (Paragraph 2.a)

- 4. Power Ascension Testing

The test specifications have been issued. A Regulatory review indicates several areas requiring further consideration. (Paragraph 2.b)

- 5. Integrated Leak Rate Testing

The preparation of the approved copy of this procedure is in progress. The test is tentatively scheduled to be performed in September 1973. (Paragraph 2.c)

- 6. Operating Organization Quality Assurance

The administrative procedures (directives) manual is in final preparation. This portion of the operating organization quality assurance program will be available for RO:III review during the month of August 1973. (Paragraph 2.d)

7. Plant Operating Instructions

The major portion of the plant operating instructions and systems descriptions have been approved and issued. Regulatory review is in progress. (Paragraph 2.e)

REPORT DETAILS

Persons Contacted

Iowa Electric Light and Power Company (IEL&P)

L. Root, DAEC Assistant Project Manager  
G. Hunt, DAEC Chief Engineer  
E. Hammond, DAEC Assistant  
H. Rehrauer, IEL&P Project Engineering Supervisor  
D. Essig, IEL&P Quality Assurance Control Engineer  
G. Cook, IEL&P Quality Assurance Manager  
D. Wilson, Results Engineer  
D. Moen, DAEC Technical Staff Supervisor  
D. Flanagan, IEL&P Project Engineer

General Electric Company (GE)

J. Nickle, GE Start-up Engineer  
M. May, GE Start-up Engineer

Nuclear Services Corporation (NSC)

G. Engle, DAEC Technical Staff (on contract from NSC)

1. Preoperational/Acceptance Test Program Status

- a. The inspector met with the DAEC Results Engineer and other members of DAEC management to determine the current status of this program. As of July 12, 1973, the status is as follows:

	<u>Preoperational Tests</u>	<u>Acceptance Tests</u>
Approved by Iowa Electric	25	26
Bechtel Startup preparing approval copy	0	2
Initial Review by Iowa Electric in progress	4	3
Initial Review by Bechtel in progress	15	14

	<u>Preoperational Tests</u>	<u>Acceptance Tests</u>
Procedures remaining to be written	4	5
Tests complete - review complete	5	3
Tests complete - under review	5	2
Tests in progress	7	3
Tests not yet started	38	45

- b. A Region III inspector observed portions of the preoperational testing of the core spray system which was performed on July 1 and 2, 1973. The purpose of this test was to demonstrate that the core spray system would function automatically and reliably in the event of a loss-of-coolant accident and that all core spray control and indicating components performed within the specified limits.

The inspector verified that the prerequisites to performing the test had been completed and signed off as required by the procedure.

A preliminary test was conducted on July 1, 1973, to assure that valve lineups were correct and that equipment and instrumentation installations and special test equipment were functional and operated as required. Minor discrepancies identified during the preliminary test were corrected satisfactorily prior to start of the official test.

On July 2, 1973, the inspector observed the core spray density patterns during portions of the test. The patterns appeared to meet the acceptable density criteria; however, the final acceptability will be determined by an analysis of the photographs (taken directly above the center of the core) of the core spray patterns. These photographs are included in the preoperational test package records.

## 2. Operational Readiness Activities

### a. Cold and Hot Functional Testing

Discussions with IEL&P and DAEC management indicates that the preparation of these integrated system functional testing

programs are progressing on schedule. Tentatively both programs will be ready for RO:III review during the month of August 1973.

b. Power Ascension Testing

An RO:III review of the start-up test specifications prepared by the General Electric start-up organization has resulted in several areas requiring further discussion and clarification. These areas, which appear to deviate from the promulgated guide for the planning of initial start-up programs,<sup>1/</sup> relates to the calibration of control rods; prediction of the control rod configuration at initial criticality; and plant response to generator trips at various power levels. RO:III will pursue these items in future inspections.

c. Integrated Leak Rate Testing

Drafts of the test procedure have been provided to Regulatory Operations and to the Directorate of Reactor Licensing (L) for review. Pending the resolution of reviewer comments and the approval of the pertinent technical specifications, an approved procedure will be provided for final RO:III review. According to the licensee, the test is tentatively scheduled to be performed in September 1973.

d. Operating Organization Quality Assurance Program

The preparation of this program and the implementing procedures are progressing on schedule. According to the licensee, the operating Quality Assurance Manual (directives) will be ready for RO:III review by the end of July 1973.

The inspector reaffirmed that RO:III expects to see this program and the implementing procedures approved and the program implemented prior to initial fuel loading. The licensee stated that this is their understanding and intent.

e. Plant Operating/Instructions

The preparation, review, and approval of the plant operating instructions is progressing on schedule. During the inspection the inspector was provided with nine volumes of approved plant operating instructions and three volumes of integrated plant operating instructions. An RO:III review of these is in progress.

<sup>1/</sup> USAEC Guide for the Planning of Initial Startup Programs, 12-7-70.

The inspector reaffirmed that RO:III expects to see a complete set of approved plant operating instructions prior to initial fuel loading. The licensee stated that this is their understanding and intent.

f. Safety Committee

The inspector's review of documentation and discussions with members of Iowa Electric Light and Power management establishes that; the safety committee charter is approved; all safety committee members and their alternates have been identified; and a listing of prime consultants to the safety committee has been prepared. These records establish that the safety committee is now capable of functioning as described in the facility final safeguards analysis report, and in accordance with the facility's proposed technical specifications.

g. Reactor Protection System Channel Response Time Measurements

Discussions between the licensee, the inspector, and members of the Directorate of Reactor Licensing, have resulted in the clarification of the requirements to satisfy proposed Technical Specification 3.1 in regard to the measurement of channel response times. Basically, the channel response time measurement will be made from the time of actuation of the sensor contacts or trip point to the time of actuation of the scram solenoid relay. The verification of these channel response times will be made initially during the performance of preoperational test No. 58, Reactor Protection System, and will be verified periodically in accordance with the facility technical specifications. The functioning and calibration of the various protective system instruments and sensors will be performed in accordance with the surveillance requirements currently being prepared for inclusion in the facility technical specifications.

3. Miscellaneous Items

Limitorque Valve Operator Program

According to the licensee, this program, which was discussed during a previous inspection,<sup>2/</sup> is in the final stages of completion. The program includes all safety related limitorque valves and provides the records and documentation to assure that each valve is installed

2/ RO Inspection Report No. 050-331/73-06.

and set up to operate in accordance with the engineered recommendation. The records, according to the licensee, will provide the engineered recommendations for the maximum and minimum torque switch settings and the recommended sizing of the thermal overload protective devices. These settings will be compared to the verified actual settings to assure that all safety related valves are set to operate in accordance with the engineered recommendations. The ultimate verification of the operability of these valves will be attained during the preoperational testing, the cold functional testing, the hot functional testing, and the start-up testing programs identified for this facility.

The inspector stated that a Regulatory review of above valve setting data, and a finding of adequacy was required prior to initial loading. The licensee stated that these records would be provided to the inspector for review.