

August 24, 1984

Docket No. 50-331

Mr. Lee Liu  
Chairman of the Board and  
Chief Executive Officer  
Iowa Electric Light and Power Company  
Post Office Box 351  
Cedar Rapids, Iowa 52406

Dear Mr. Liu:

The Commission has issued the enclosed Amendment No. 105 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center (DAEC). This amendment consists of changes to the Technical Specifications in response to your application dated April 12, 1984.

This amendment revises the Technical Specifications to incorporate the changes in response to a new regulation, 10 CFR 50.73, and a revision to an existing regulation, 10 CFR 50.72. The amendment also incorporates some administrative changes. Of the following changes, items (1), (2), (3), (4), (5), (6), (7) and (10) are in response to the Commission's regulations, and items (8) and (9) are administrative changes.

1. Table of Contents updated to reflect changes of terminology.
2. Definition of Reportable Event added to Section 1.0.
3. Section 3.6.D note regarding prompt notification requirement deleted. Prompt notification requirements are covered by 10 CFR 50.72.
4. Section 3.8.B.4 is deleted. This section referred to reporting auxiliary electrical equipment out of service. This reporting is adequately addressed by requirements of 10 CFR 50.72 and 10 CFR 50.73.
5. Sections 6.5.1.6.f and 6.5.2.7.g revised to incorporate new terminology.
6. Section 6.6.1 revised to be consistent with model Technical Specifications and DAEC organizational structure.
7. Section 6.10 revised to indicate that all "Licensee Event Reports" shall be retained.
8. Section 6.11.1.c is revised to delete a reference to an inappropriate NRC office and to simplify the section.
9. The heading and introductory paragraph for section 6.11.3 is added. This paragraph was inadvertently deleted by a previous amendment.
10. Section 6.11.3.e is deleted to remove the reference to deleted section 3.8.B.4.

Additionally several blank pages have been deleted and the information moved to allow for this deletion.

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Mr. Lee Liu

- 2 -

A copy of the related Safety Evaluation is also enclosed.

Sincerely,

Original signed by/

Mohan C. Thadani, Project Manager  
Operating Reactors Branch #2  
Division of Licensing

Enclosures:

1. Amendment No. 105 to  
License No. DPR-49
2. Safety Evaluation

cc w/enclosures:  
See next page

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Mr. Lee Liu  
Iowa Electric Light and Power Company  
Duane Arnold Energy Center

cc:

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

IOWA ELECTRIC LIGHT AND POWER COMPANY  
CENTRAL IOWA POWER COOPERATIVE  
CORN BELT POWER COOPERATIVE

DOCKET NO. 50-331

DUANE ARNOLD ENERGY CENTER

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 105  
License No. DPR-49

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Iowa Electric Light & Power Company, et al, dated April 12, 1984, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-49 is hereby amended to read as follows:

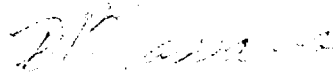
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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 105, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: August 24, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 105

FACILITY OPERATING LICENSE NO. DPR-49

DOCKET NO. 50-331

Revise the Appendix "A" Technical Specifications by removing the current pages and inserting the revised pages listed below. The revised areas are identified by vertical lines.

<u>Remove</u>	<u>Insert</u>
iv	iv
vi	vi
1.0-8	1.0-8
3.6-6	3.6-6
3.8-5	3.8-5
6.5-3	6.5-3
6.5-7	6.5-7
6.6-1	6.6-1
6.10-1	6.10-1
6.11-3	6.11-3
6.11-4	6.11-4
6.11-5	6.11-5
6.11-6	6.11-6
6.11-7 (deleted)	
6.11-8 (deleted)	
6.11-9 (deleted)	
6.11-10 (deleted)	
6.11-11 (deleted)	
6.11-14 (deleted)	

5.0 Design Features	5.1-1
5.1 Site	5.1-1
5.2 Reactor	5.2-1
5.3 Reactor Vessel	5.3-1
5.4 Containment	5.4-1
5.5 Spent and New Fuel Storage	5.5-1
6.0 Administrative Controls	6.1-1
6.1 Management - Authority and Responsibility	6.1-1
6.2 Plant Staff Organization	6.2-1
6.3 Plant Staff Qualifications	6.3-1
6.4 Retraining and Replacement Training	6.4-1
6.5 Review and Audit	6.5-1
6.6 Reportable Event	6.6-1
6.7 Action to be Taken if a Safety Limit is Exceeded	6.7-1
6.8 Plant Operating Procedures	6.8-1
6.9 Radiological Procedures	6.9-1
6.10 Records Retention	6.10-1
6.11 Plant Reporting Requirements	6.11-1
6.12 Deleted	
6.13 Environmental Qualification	6.13-1

TABLE NO.TITLEPAGE NO.

4.2-D	Minimum Test and Calibration Frequency for Radiation Monitoring Systems	3.2-29
4.2-E	Minimum Test Calibration Frequency for Drywell Leak Detection	3.2-30
4.2-F	Minimum Test Calibration Frequency for Surveillance Instrumentation	3.2-31
4.2-G	Minimum Test and Calibration Frequency for Recirculation Pump Trip	3.2-34
4.2-H	Accident Monitoring Instrumentation Surveillance Requirements	3.2-34a
3.6-1	Number of Specimens by Source	3.6-33
4.6-3	Safety Related Snubbers Accessible During Normal Operation	3.6-42
4.6-4	Safety Related Snubbers Inaccessible During Normal Operation	3.6-44
4.6-5	Safety Related Snubbers in High Radiation Area During Shutdown and/or Especially Difficult to Remove	3.6-48
3.7-1	Containment Penetrations Subject to Type "B" Test Requirements	3.7-20
3.7-2	Containment Isolation Valves Subject to Type "C" Test Requirements	3.7-22
3.7-3	Primary Containment Power Operated Isolation Valves	3.7-25
4.7-1	Summary Table of New Activated Carbon Physical Properties	3.7-50
4.10-1	Summary Table of New Activated Carbon Physical Properties	3.10-7
3.12-1	Deleted	
3.12-2	MCPR Limits	3.12-9a
3.13-1	Fire Detection Instruments	3.13-11
3.13-2	Required Fire Hose Stations	3.13-12
6.2-1	Minimum Shift Crew Personnel and License Requirements	6.2-3
6.9-1	Protection Factors for Respirators	6.9-8
6.11-1	Reporting Summary - Routine Reports	6.11-12
6.11-2	Deleted	



## 26. SURVEILLANCE FREQUENCY

Periodic surveillance tests, checks, calibrations and examinations shall be performed within the specified surveillance intervals. These intervals may be adjusted plus or minus 25%. The operating cycle interval as pertaining to instrument and electrical surveillance shall never exceed 15 months. In cases where the elapsed interval has exceeded 100% of the specified interval, the next surveillance interval shall commence at the end of the original specified interval.

## 27. FIRE SUPPRESSION WATER SYSTEM

A fire suppression water system shall consist of a water source, pumps, and distribution piping with associated sectionalizing control or isolation valves. Such valves include yard hydrant curb valves, the first valve ahead of the water flow alarm device on each sprinkler, hose standpipe or deluge system riser.

## 28. REACTOR TRIP SYSTEM RESPONSE TIME

Reactor trip system response time is the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until deenergization of the scram pilot valve solenoids.

## 29. REPORTABLE EVENT

A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

## LIMITING CONDITION FOR OPERATION

2.
    - a. From and after the date that the safety valve function of one relief valve is made or found to be inoperable, continued reactor operation is permissible only during the succeeding thirty days unless such valve function is sooner made operable.
    - b. From and after the date that the safety valve function of two relief valves is made or found to be inoperable, continued reactor operation is permissible only during the succeeding seven days unless such valve function is sooner made operable.
  3. If Specification 3.6.D.1 is not met, an orderly shutdown shall be initiated and the reactor coolant pressure shall be reduced to atmospheric within 24 hours.
- E. Jet Pumps
1. Whenever the reactor is in the startup or run modes, all jet pumps shall be operable. If it is determined that a jet pump is inoperable, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.

## SURVEILLANCE REQUIREMENT

2. At least one of the relief valves shall be disassembled and inspected each refueling outage.
  3. With the reactor pressure  $> 100$  psig and turbine bypass flow to the main condenser, each relief valve shall be manually opened and verified open by turbine bypass valve position decrease and pressure switches and thermocouple readings downstream of the relief valve to indicate steam flow from the valve once per operating cycle.
- E. Jet Pumps
1. Whenever there is recirculation flow with the reactor in the startup or run modes, jet pump operability shall be checked daily by verifying that the following conditions do not occur simultaneously:
    - a. The two recirculation loops have a flow imbalance of 15% or more when the pumps are operated at the same speed.

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- e. Investigation of all violations of the Technical Specifications including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence to the Director-Nuclear Generation and to the Chairman of the Safety Committee.
- f. Review of all Reportable Events.
- g. Review of facility operations to detect potential safety hazards.
- h. Performance of special reviews, investigations or analyses and reports thereon as requested by the Chairman of the Safety Committee.
- i. Review of the Plant Security Plan and implementing procedures.
- j. Review of the Emergency Plan and implementing procedures.

#### 6.5.1.7 Authority

The Operations Committee shall:

- a. Recommend to the Plant Superintendent-Nuclear written approval or disapproval of items considered under Specification 6.5.1.6 (a) through (d) above.

#### 6.5.2.7 Review

The Safety Committee shall review:

- a. The safety evaluations for (1) changes to procedures, and (2) tests or experiments completed under the provision of Section 50.59, 10 CFR, to verify that such actions did not constitute an unreviewed safety question.
- b. Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.
- c. Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.
- d. Proposed changes in Technical Specifications or licenses.
- e. Violations of applicable statutes, codes, regulations, orders, technical specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.
- f. Significant operating abnormalities or deviations from normal and expected performance of plant equipment that affect nuclear safety.
- g. All Reportable Events.
- h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of safety-related structures, systems, or components.

6.6      REPORTABLE EVENT ACTION

6.6.1      The following actions shall be taken for REPORTABLE EVENTS.

- a.    Each REPORTABLE EVENT shall be reviewed by the Operations Committee, and a report shall be submitted to the Safety Committee and the Director, Nuclear Generation and
- b.    The Commission shall be notified and a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50.

## 6.10 RECORDS RETENTION

6.10.1 The following records shall be retained for at least 5 years:

1. Records and logs of facility operation covering time interval at each power level.
2. Records and logs of principal maintenance activities, inspections, and repair and replacement of principal items of equipment related to nuclear safety.
3. All Licensee Event Reports.
4. Records of surveillance activities, inspections and calibrations required by these Technical Specifications.
5. Records of reactor tests and experiments.
6. Records of changes made to Operating Procedures.
7. Records of radioactive shipments.
8. Records of sealed source leak test and results.
9. Records of annual physical inventory verifying accountability of sources on record.

- c. Monthly Operating Report Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the appropriate Regional Office, to arrive no later than the 15th of each month following the calendar month covered by the report.
- d. Table 6.11-1 lists some of the routine reports required by 10 CFR Parts 20, 40, 50 and 70, including those listed in Specification 6.11.1.
- e. Annual Safety/Relief Valve Challenge A report documenting safety/relief valve challenges shall be submitted within 60 days of January 1 each year.



6.11.2 Deleted.

6.11.3. UNIQUE REPORTING REQUIREMENTS

Special reports shall be submitted to the Director of Inspection and Enforcement Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification.

- a. Reactor vessel base, weld and heat affected zone metal test specimens (Specification 4.6.A.2).
- b. I-131 dose equivalent exceeding 50% of equilibrium value (Specification 4.6.B.1.h).
- c. Inservice inspection (Specification 4.6.G).
- d. Reactor Containment Integrated Leakage Rate Test (Specification 4.7.A.2.f).
- e. deleted
- f. Fire Protection Systems (Specifications 3.13.A.3, 3.13.B.3, 3.13.C.3, and 3.13.D.3).

TABLE 6-11-1  
REPORTING SUMMARY - ROUTINE REPORTS

<u>Requirement</u>	<u>Report</u>	<u>Timing of Submittal</u>
TS	Annual Safety/ Relief Valve Challenge	Within 60 days after January 1.
TS	Annual Exposure	Within 60 days after January 1.
§20.407	Personnel Exposure and Monitoring	Within first quarter of each calendar year.
§20.408	Personnel Exposure on Termination of Employment or Work	Within 30 days after the exposure of the individual has been determined or 90 days after date of termination of employment or work assignment, whichever is earlier.
§40.64(a)	Transfer of Source Material	Promptly upon transfer.
§40.64(a)	Receipt of Source Material	Within 10 days after material is received.
§40.64(b)	Source Material Inventory	Within 30 days after September 30 of each year.

TABLE 6-11-1 (cont)  
REPORTING SUMMARY - ROUTINE REPORTS

<u>Requirement</u>	<u>Report</u>	<u>Timing of Submittal</u>
§50.59(b)	Changes, Tests, and Experiments	Within 60 days after January 1.
§70.53	Special Nuclear Material Status	Within 30 days after March 31 and September 30 of each year.
§70.54	Transfer of Special Nuclear Material	Promptly upon transfer
§70.54	Receipt of Special Nuclear Material	Within 10 days after material is received
Appendix G to 10 CFR Part 50	Fracture Toughness	On an individual-case basis at least 3 years prior to the date when the predicted fracture toughness levels will no longer satisfy section V.B. of Appendix G to 10 CFR Part 50.
Appendix H to 10 CFR Part 50	Reactor Vessel Material Surveillance	Completion of tests after each capsule withdrawal.
Appendix J to 10 CFR Part 50	Reactor Containment Building Integrated Leak Rate Test	Approximately 3 months following conduct of test.

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<sup>1</sup>Technical Specifications



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 105 TO LICENSE NO. DPR-49

IOWA ELECTRIC LIGHT AND POWER COMPANY  
CENTRAL IOWA POWER COOPERATIVE  
CORN BELT POWER COOPERATIVE

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

1.0 Introduction

By a letter dated April 12, 1984, Iowa Electric Light and Power Company (the licensee) requested changes to the Technical Specifications (TSs) for the Duane Arnold Energy Center (DAEC) pertaining to compliance with the Commission's regulations, 10 CFR 50.72 and 10 CFR 50.73, and some administrative changes. Of the following requested changes, items (1), (2), (3), (4), (5), (6), (7) and (10) are in response to the Commission's regulations, and items (8) and (9) are administrative changes.

1. Table of Contents updated to reflect changes of terminology.
2. Definition of Reportable Event added to Section 1.0.
3. Section 3.6.D note regarding prompt notification requirement deleted. Prompt notification requirements are covered by 10 CFR 50.72.
4. Section 3.8.B.4 is deleted. This section referred to reporting auxiliary electrical equipment out of service. This reporting is adequately addressed by requirements of 10 CFR 50.72 and 10 CFR 50.73.
5. Sections 6.5.1.6.f and 6.5.2.7.g revised to incorporate new terminology.
6. Section 6.6.1 revised to be consistent with model Technical Specifications and DAEC organizational structure.
7. Section 6.10 revised to indicate that all "Licensee Event Reports" shall be retained.
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9. The heading and introductory paragraph for section 6.11.3 is added. This paragraph was inadvertently deleted by a previous amendment.
10. Section 6.11.3.e is deleted to remove the reference to deleted section 3.8.B.4.

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Additionally several blank pages have been deleted and the information moved to allow for this deletion.

## 2.0 Evaluation

Effective January 1, 1984, the Commission revised the section 50.72 and added a new section 50.73 to 10 CFR 50. The revised section 50.72 modified the immediate notification requirements, while the new section 50.73 revised the Licensee Event Report system. The new requirements of 10 CFR 50.73 replaced the requirements previously placed on the licensee in its Technical Specifications. On December 19, 1983, the Commission issued the Generic Letter 83-43, which provided guidance on the implementation of the reporting requirements of sections 50.72 and 50.73 of 10 CFR 50. The generic guidance included the model technical specifications showing the revisions to be made to the "Definitions" and "Administrative Control" sections of the licensee's Technical Specifications. On April 12, 1984, the licensee submitted a response to Generic Letter 83-43. Also, included in the licensee's submittal were two administrative changes to correct the errors in the Technical Specifications.

We have reviewed the licensee's submittals provided in response to our requirements contained in 10 CFR 50.72 and 10 CFR 50.73, and find that the proposed changes meet our guidance and are acceptable. Additionally, the correction of the reference from AEC to NRC, and the addition of the section 6.11.3 heading paragraph, which was inadvertently deleted in a previous amendment, constitute administrative changes, and are acceptable.

## 3.0 Environmental Considerations

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

## 4.0 Conclusion

We have concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations,

and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: M. Thadani

Dated: August 24, 1984