

March 13, 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. 95 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center. This

amendment consists of changes to the Technical Specifications in response to your application dated December 20, 1982.

The amendment revises the Duane Arnold Energy Center Technical Specifications to incorporate the following changes:

- (1) Pages 3.7-31, 32, and 32a are revised to reflect modifications made as part of the Mark I Containment Modification Program.
- (2) Section 6.5.1.6, items i. and j. (p 6.5-3) are revised to remove reference to the Chairman of the Safety Committee.
- (3) Section 6.5.2.1, items i. and j. (p 6.5-5) are added to comply with ANSI-N18.7.
- (4) Section 6.5.2.2 (p 6.5-5) is reworded and items a. through g. are deleted to avoid redundancy with Section 6.5.2.1.
- (5) Section 6.5.2.6 (p 6.5-6) is revised to clarify Safety Committee quorum requirements.
- (6) Section 6.5.2.8, item e. (p 6.5-8) is revised to increase the frequency of auditing the Emergency Plan to comply with 10CFR50.54(t).
- (7) Section 6.5.2.8, item f. (p 6.5-8) is revised to increase the frequency of auditing the Security Plan to comply with 10CFR73.40(d).

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Mr. Lee Liu

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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. 95 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. 95  
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 December 20, 1982, 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. 95, 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: March 13, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 95

FACILITY OPERATING LICENSE NO. DPR-49

DOCKET NO. 50-331

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of changes.

AFFECTED PAGES

- 3.7-31
- 3.7-32
- 3.7-32a
- 6.5-3
- 6.5-5
- 6.5-6
- 6.5-8

The pressure suppression pool water provides the heat sink for the reactor primary system energy release following a postulated rupture of the system. The pressure suppression chamber water volume must absorb the associated decay and structural sensible heat released during primary system blowdown from 1000 psig. Since all of the gases in the drywell are purged into the pressure suppression chamber air space during a loss-of-coolant accident, the pressure resulting from isothermal compression plus the vapor pressure of the liquid must not exceed 62 psig, the suppression chamber maximum allowable pressure. The design volume of the suppression chamber (water and air) was obtained by considering that the total volume of reactor coolant to be condensed is discharged to the suppression chamber and that the drywell volume is purged to the suppression chamber.

Using the minimum or maximum water volumes given in the specification, containment pressure during the design basis accident is approximately 54 psig which is below the design pressure of 56 psig. The minimum volume of 58,900 ft<sup>3</sup> results in a submergence of approximately 3 feet. Based on Humboldt Bay, Bodeqa Bay, and Marviken test facility data as utilized in General Electric Company document number NEOE-21885-P and data presented in Nutech document, Iowa Electric document number 7884-M325-002, the following technical assessment results were arrived at:

1. Condensation effectiveness of the suppression pool can be maintained for both short and long term phases of the Design Basis Accident (DBA), Intermediate Break Accident (IBA), and Small Break Accident (SBA) cases with three feet submergence.

2. There is no significant thermal stratification in the condensation oscillation regime after LOCA with three feet submergence.
3. There is some thermal stratification in the chugging regime for all break sizes. However, this will not inhibit the pressure suppression function of the suppression pool.
4. Seismic induced waves will not cause downcomer vent uncovering with three feet submergence.
5. Post-LOCA pool waves will not cause downcomer vent uncovering with three feet submergence.
6. Maximum post-LOCA drawdown will not cause downcomer vent uncovering and condensation effectiveness of the suppression pool will be maintained.

Therefore, with respect to downcomer submergence, this specification is adequate. The maximum temperature at the end of blowdown tested during the Humbolt Bay and Bodega Bay tests was 170°F and this is conservatively taken to be the limit for complete condensation of the reactor coolant, although condensation would occur for temperatures above 170°F.

Should it be necessary to drain the suppression chamber, this should only be done when there is no requirement for core standby cooling systems operability as explained in Basis 3.5.G or the requirements of Specification 3.5.G.4 are met.

Using a 50°F rise (Table 5.2-1, FSAR) in the suppression chamber water temperature and a minimum water volume of 58,900 ft<sup>3</sup>, the 170°F temperature which is used for complete condensation would be approached only if the suppression pool temperature is 120°F prior to the DBA-LOCA. Maintaining a pool temperature of 95°F will assure that the 170°F limit is not approached.

## 2. Inerting

Safety Guide No. 7 assumptions for metal-water reactions result in hydrogen concentrations in excess of the Safety

- 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 those Reportable Occurrences requiring 24 hour notification to the Commission.
- 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.

- c. Chemistry and radiochemistry.
- d. Metallurgy.
- e. Instrumentation and control.
- f. Radiological safety.
- g. Mechanical and electrical engineering.
- h. Quality assurance practices.
- i. Non-destructive testing.
- j. Administration.

#### 6.5.2.2 Composition

The Safety Committee shall be composed of persons who have been appointed in writing by the President to serve on a permanent basis and who collectively have or have access to applicable technical and experimental expertise in the areas listed in section 6.5.2.1, items a through j.

#### 6.5.2.3 Alternates

All alternate members shall be appointed in writing by the President to serve on a permanent basis.

#### 6.5.2.4 Consultants

Consultants shall be utilized as determined by the Safety Committee Chairman to provide expert advice to the Safety Committee.

#### 6.5.2.5 Meeting Frequency

The Safety Committee shall meet at least once per calendar quarter during the initial year of facility operation following fuel loading and at least once per six months thereafter.

#### 6.5.2.6 Quorum

A quorum of the Safety Committee shall consist of the Chairman or Vice Chairman and at least four members with a maximum of two alternates as voting members. No more than a minority of the voting members shall have line responsibility for operation of the facility.

- i. Reports and meeting minutes of the Operations Committee.

#### 6.5.2.8 Audits

Audits of facility activities shall be performed under the cognizance of the Safety Committee. These audits shall encompass:

- a. The conformance of facility operation to all provisions contained within the Technical Specifications and applicable license conditions at least once per 24 months.
- b. The performance, training and qualifications of the entire facility staff at least once per 24 months.
- c. The results of all actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety at least once per six months.
- d. The performance of all activities required by the Quality Assurance Program to meet the criteria of Appendix "B", 10CFR50, at least once per 24 months.
- e. The Emergency Plan and implementing procedures at least once per 12 months.
- f. The Security Plan and implementing procedures at least once per 12 months.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 95 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 letter dated December 20, 1982 (IELP NG-82-2761) the Iowa Electric Light and Power Company (the licensee) requested changes to the Technical Specifications (Appendix A) appended to Facility Operating License No. DPR-49 for Duane Arnold Energy Center (DAEC). The proposed amendment and the revised Technical Specifications would incorporate the following administrative changes into the DAEC Technical Specifications: modifications made as part of Mark I Containment Modifications Program; removal of a reference to the Chairman of Safety Committee; additions complying with ANSI-N18.7; editorial changes to avoid a redundancy; clarification of Safety Committee quorum requirements; increase in Emergency Plan auditing frequency in compliance with 10CFR50.54(t); increase in Security Plan auditing frequency in compliance with 10CFR73.40(d); and a revision specifying frequency of performing Design Change Request Safety Evaluation audits. Since the receipt of the licensee's request, the affected pages were revised as a result of subsequently issued amendments 80 and 81. We have therefore based our review on the current version of the affected pages which differ from those submitted at the time of the licensee's request.

2.0 Discussion

The requested changes to the Technical Specifications were described in the Commission's Notice of the licensee's application published pursuant to Public Law 97-415 on

3.0 Evaluation

The first proposed change revising the Technical Specifications to clarify the Mark I Containment Modification Program, involves only the bases to the Technical Specifications. Since no changes in Limiting Conditions for Operation or Surveillance Requirements are involved, this change is determined to be a clarification of existing Technical Specifications and as such is administrative. We have, therefore, determined that this change is acceptable.

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This second proposed change deletes the reference to the Chairman of the Security Committee to Plant Security Plan and Emergency Plan are no longer submitted to the Chairman of the Safety Committee. Since the impacted function is not identified as a Safety Committee function, the deletion of reference to the Chairman of Safety Committee is considered to enhance consistency of the Technical Specifications. The requested change is considered administrative only and is acceptable to us.

The third proposed change adds non-destructive testing and administration under the review and audit functions of the Safety Committee to comply with ANSI-N18.7. The addition of this function to the Safety Committee review and audit authority will enhance quality of the non-destructive testing and administration, and is acceptable to us.

The fourth change deletes the list of items (a) through (g) from section 6.5.2.2 and references the same in section 6.5.2.1. This change was requested to eliminate redundancy between the two sections and as such is considered administrative only. This change is acceptable to us.

The fifth requested change, which clarifies the Safety Committee quorum requirements, has been previously approved by Amendment 80, dated January 7, 1983 and therefore is not considered in the Safety Evaluation.

The sixth proposed change increases the frequency of auditing the Emergency Plan to comply with 10CFR50.54(t) from once every 24 months to once every 12 months. This change would enhance the control on the quality of the emergency plan and complies with the latest Commission regulations. This change is therefore acceptable to us.

The seventh proposed change increases the frequency of auditing the Security Plan to comply with 10CFR73.40(d) from once every 24 months to once every 12 months. This change is acceptable to us for the same reason as cited in the above paragraph.

The eighth proposed change specifies the frequency of performing design change request audits. This change was previously approved in Amendment 80, and is not considered in this Safety Evaluation.

#### 4.0 Environmental Considerations

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact, and pursuant to 10 CFR §51.5(d)(4), that an environmental

impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### 5.0 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 Reviewer: M. Thadani

Dated: March 13, 1984