

January 23, 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. 92 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 May 4, 1983.

This change to the Technical Specifications revises the minimum critical power ratio (MCPR) operating limits to support the turbine control valve modification required to reduce turbine blade and wheel damage on the high pressure turbine.

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. 92 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. 92
License No. DPR-49

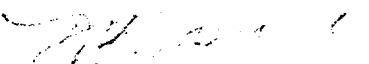
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Iowa Electric Light & Power Company, et al, dated August 20, 1982, as revised November 24, 1982, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 92, 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: January 23, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 92

FACILITY OPERATING LICENSE NO. DPR-49

DOCKET NO. 50-331

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

AFFECTED PAGE

3.12-9a

DAEC-1

TABLE 3.12-2

MCPR LIMITS

Fuel Type

8 x 8	1.25*
8 x 8R/P8 x 8R	1.27*

*After conversion of the Turbine Control Valves from Partial Arc to Full Arc Admission the MCPR Operating Limits will become as follows:

8 x 8	1.27
8 x 8R/P8 x 8R	1.29



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 92 TO LICENSE NO. DPR-49

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

DOCKET NO. 50-331

DUANE ARNOLD ENERGY CENTER

1.0 Introduction

By letter dated May 4, 1983, the Iowa Electric Light and Power Company (the licensee) made application to amend the Technical Specifications for the Duane Arnold Energy Center (DAEC) in order to permit operation of the turbine control valve in a synchronous manner. Currently, at rated power, three of the valves are fully open and the fourth is only 32 percent open. In order to reduce the probability of turbine blade damage the licensee wishes to operate the valves so that all are at approximately 54 percent open at full power.

2.0 Evaluation

In the event of load rejection without bypass, the proposed change in the control valve operation would result in a more rapid reduction in steam flow due to more rapid valve closure, a larger pressure pulse resulting in collapsing of the voids, and an inadequate margin of operating critical power ratio (CPR) over the minimum critical power ratio (MCPR) limits.

The licensee reanalyzed this event assuming new valve settings to determine the adequacy of the CPR margin above the MCPR limit. The results of the licensee's analysis indicate that the operating limits of CPR must be changed to assure that the resulting CPR is within the range of values expected for this quantity. Based on the results of his analysis the licensee has proposed to increase the operating CPR margin above the MCPR from 1.25 to 1.27 for 8x8 fuel and from 1.27 to 1.29 for 8x8R fuel. The licensee has shown that this corrective change to the operating CPR margin would completely offset the increased challenge to the MCPR limits that would be likely when the operation of the turbine control valves is changed, and would return the system performance characteristic to those that were found acceptable for the case of load rejection without bypass transient analyzed by the staff

for Cycle 7. Therefore, the turbine control valve modification in conjunction with the revised CPR operating limits is not likely to result in a change in the frequency of MCPR limit challenges or their consequences in the event of a transient due to load rejection without bypass.

We have reviewed the licensee's analysis and find that the licensee's analysis was performed using an NRC-approved computational code (ODYN) and that the resulting CPR values proposed by the licensee are within the range of values expected for this quantity. We, therefore, conclude that the proposed Technical Specification changes are acceptable.

3.0 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.

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 Reviewer: W. Brooks

Dated: January 23, 1984