

August 15, 1989

Docket No. 50-331

DISTRIBUTION:

Mr. Lee Liu
Chairman of the Board and
Chief Executive Officer
Iowa Electric Light and Power Company
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LKokajko

Dear Mr. Liu:

SUBJECT: AMENDMENT NO. 162 TO FACILITY OPERATING LICENSE NO. DPR-49
(TAC NO. 66032)

The Commission has issued the enclosed Amendment No. 162 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated June 30, 1987.

The amendment revises Technical Specification 3.5.G.3 to clarify the Limiting Condition for Operation (LCO) which requires that certain emergency core cooling equipment be available when work is performed which has the potential for draining the reactor vessel. Additional restrictions (TS 3.5.G.4(d) and 3.5.G.5) would prohibit operations which have the potential for draining the reactor vessel when the suppression pool water supply is not adequate. Moreover, various administrative changes were made to the above specifications and to the bases.

A copy of the Safety Evaluation is also enclosed. Notice of issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

/s/

James R. Hall, Project Manager
Project Directorate III-3
Division of Reactor Projects - III,
IV, V & Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 162 to License No. DPR-49
2. Safety Evaluation

cc w/enclosures:
See next page

Office: LA/PDI-3 PE/PDI-3
Surname: PKreutzer LKokajko
Date: 8/13/89 8/13/89

PM/PDI-3 PD/PDI-3
RHall JHannon
8/13/89 8/13/89

OGC-WF1
8/17/89

OFOI
1/1

Handwritten notes: "all STATE & SEC Del number", "Subject To Change", "CP/PM", "8/15/89"

Mr. Lee Liu
Iowa Electric Light and Power Company

Duane Arnold Energy Center

cc:

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Kathleen H. Shea, Esquire
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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. 162
License No. DPR-49

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Iowa Electric Light and Power Company, et al., dated June 30, 1987 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:

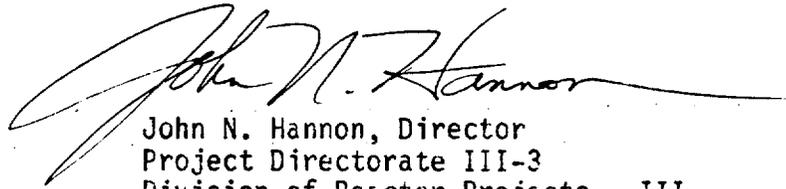
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(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 162, 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 and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John N. Hannon, Director
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Charges to the Technical
Specifications

Date of Issuance: August 15, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 162

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 areas are indicated by marginal lines.

Pages

Remove

3.5-10
3.5-10a
3.5-23

Insert

3.5-10
3.5-10a
3.5-23

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENT

that the remaining diesel generator and all the low pressure core and containment cooling subsystems supported by the OPERABLE diesel generator are OPERABLE. If this requirement cannot be met, an orderly SHUTDOWN shall be initiated and the reactor shall be placed in the COLD SHUTDOWN Condition within 24 hours.

2. Any combination of inoperable components in the core and containment cooling systems shall not defeat the capability of the remaining OPERABLE components to fulfill the cooling functions.

3. When irradiated fuel is in the reactor vessel and the reactor is in the COLD SHUTDOWN Condition or Refuel Mode:

- a. If no work is being performed which has the potential for draining the reactor vessel, both core spray and RHR systems may be inoperable; or

- b. If work is being performed which has the potential for draining the reactor vessel, at least two of any combination of core spray and/or RHR (LPCI or shutdown cooling mode) pumps shall be OPERABLE (including the capability to inject water into the reactor vessel with suction from the suppression pool) except as specified in Specification 3.5.G.3.b(1) and (2), below. A diesel generator required for operation of at least one of these pumps shall be OPERABLE.

- (1) With one of the two pumps inoperable, restore the inoperable pump to OPERABLE status within four hours or suspend all operations with a potential for draining the reactor vessel.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
<p>(2) With both pumps inoperable, suspend all operations with a potential for draining the reactor vessel.</p> <p>4. During a refueling outage, CORE ALTERATIONS may continue with the suppression pool volume below the minimum values specified in Specification 3.7.A.1 provided all of the following conditions are met:</p> <p>(a) The reactor head is removed, the cavity is flooded, the spent fuel pool gates are removed and spent fuel pool water level is maintained within the limits of Specification 3.9.C.</p> <p>(b) At least one core spray subsystem is operable with suction aligned to the condensate storage tank(s).</p> <p>(c) The condensate storage tanks contain at least 75,000 gallons of water which is available to the core spray subsystem. Condensate storage tank(s) level shall be recorded at least every 12 hours.</p> <p>(d) No work is being performed which has the potential for draining the reactor vessel.</p> <p>5. If the requirements of Specification 3.5.G.4 cannot be met, suspend CORE ALTERATIONS.</p>	

G. Minimum Low Pressure Cooling and Diesel Generator Availability

The purpose of Specification G is to assure that adequate core cooling equipment is available at all times. It is during refueling outages that major maintenance is performed and during such time that all low pressure core cooling systems may be out of service. This specification provides that should this occur, no work will be performed on the primary system which could lead to draining the vessel. This work would include work on certain control rod drive components and recirculation system. Thus, the specification precludes the events which could require core cooling. If work must be performed which has the potential for draining the vessel, Specification 3.5.G.3.b requires that certain low pressure core cooling subsystems be available and capable of injecting water into the reactor vessel from the suppression pool water supply. The condensate storage tanks are not considered to be an appropriate water supply as they are not safety related and could provide makeup water for core cooling for only a finite period of time.

The makeup capability of either one core spray pump or one low pressure coolant injection (LPCI) pump is more than double the leakage rate expected from a postulated failure of the control rod velocity limiter section. Since the system cannot be pressurized during refueling, the potential need for core flooding only exists and the specified combination of the core spray or the LPCI system can provide this. Specification 3.8 must also be consulted to determine other requirements for the diesel generators. To prevent extensive wear and stress on the diesel engines, the diesels are manually started and the speed incrementally increased to synchronous speed.

H. Maintenance of Filled Discharge Pipe

If the discharge piping of the core spray, LPCI subsystem, HPCI, and RCIC are not filled, a water hammer can develop



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 162 TO FACILITY OPERATING 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 June 30, 1987, Iowa Electric Light and Power Company, et al. (the licensee) submitted an application for amendment to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center. The proposed amendment would revise Technical Specification (TS) 3.5.G.3 to clarify the Limiting Condition for Operation (LCO) which requires that certain emergency core cooling equipment be available when work is performed which has the potential for draining the reactor vessel. New TS's 3.5.G.4.(d) and 3.5.G.5 would apply additional restrictions prohibiting operations which have the potential for draining the reactor vessel when the suppression pool water supply is not adequate. Moreover, administrative changes were requested to the above TS's and the associated bases.

2.0 EVALUATION

The licensee proposed to revise TS 3.5.G.3 to clearly define the low pressure core cooling systems that must be operable when work is being performed which has the potential to drain the reactor vessel. Analysis indicated that the worst case loss of reactor vessel inventory would be caused by the failure of the velocity limiter section of a control rod while maintenance was being performed. This would allow coolant to drain from the reactor vessel through the control rod drive housing. The maximum leakage flow rate for this scenario would be 1328 gallons per minute (gpm), which is less than one-half of the makeup capacity of either one core spray pump (3020 gpm) or one low pressure coolant injection pump (4800 gpm). Further, the revised LCO would require an independent onsite power source (at least one emergency diesel generator) that is capable of supplying backup power to the core spray and the low pressure coolant injection pumps. The revision to TS 3.5.G.3 would clarify the specification regarding the low pressure core cooling system operability and prevent operator confusion in interpreting the TS. Section 3.5.G of the Bases would also be revised to reflect the changes to TS 3.5.G.3.

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The licensee proposed to add two new specifications, TS 3.5.G.4.(d) and TS 3.5.G.5. These specifications would place an additional restriction on the licensee. TS 3.5.G.4.(d) would prohibit work that has the potential for draining the reactor vessel if the suppression pool water inventory is below the TS minimum value. TS 3.5.G.5 would explicitly require suspension of core alterations if the requirements of TS 3.5.G.4 cannot be met. These new specifications would provide clear guidance in this area during core alteration activities.

In TS 3.5.G.4, the licensee proposed to administratively change the wording of "refueling operations" to "core alterations." This is a more correct description of activities in regards to the TS and is a defined TS term.

In summary, the staff finds that the proposed changes will either clarify existing requirements or place additional restrictions on the licensee during operations which have the potential for draining the reactor vessel. Therefore, the staff concludes that the proposed changes to the Technical Specifications, as requested in the licensee's letter dated June 30, 1987, are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes a surveillance requirement. 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 the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the 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 the amendment.

4.0 CONCLUSION

The staff has 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 the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Lawrence E. Kokajko

Dated: August 15, 1989