

Docket No. 50-331

JUL 3 0 1975

Iowa Electric Light and Power Company
ATTN: Mr. Duane Arnold, President
Security Building
P. O. Box 351
Cedar Rapids, Iowa 52406

Gentlemen:

The Commission has issued the enclosed Amendment No. 10 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center. The amendment includes Change No. 11 to the Technical Specifications and is further documentation of our emergency authorization of June 30, 1975, in response to your request of June 27, 1975.

The amendment modifies the required Emergency Service Water (ESW) system flow rate based on river water temperature rather than requiring a flow rate of 1200 gpm regardless of river water temperature.

Copies of the related Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

151
George Lear, Chief
Operating Reactors Branch #3
Division of Reactor Licensing

Enclosures:

1. Amendment No. 10
2. Safety Evaluation
3. Federal Register Notice

cc: See next page

SEE PREVIOUS YELLOW FOR CONCURRENCE*

OFFICE >	ORB#3	ORB#3	AD:DRL/ORS	TR*	OELD*
SURNAME >	Paulson/dg	Lear <i>GL</i>	Goller		
DATE >	7/ 28 /75	7/ 29 /75	7/ 29 /75		

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George Lear, Chief
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DISTRIBUTION:

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SURNAME	CParrish kmf	WAPaulson	GLear	Ketchen	KRGoller
DATE	7/1/75	7/2/75	7/2/75	7/22/75	7/30/75

Iowa Electric Light & Power Company

cc: w/enclosure

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Mr. Dudley Henderson
Chairman, Linn County
Board of Supervisors
Cedar Rapids, Iowa 52406

Mr. Ed Vest
Environmental Protection Agency
Region VII Office
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Reference Service
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Cedar Rapids, Iowa 52401

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. 10
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, Central Iowa Power Cooperative, and Corn Belt Power Cooperative (the licensees) dated June 27, 1975, 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; and
 - 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.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 2.C.(2) of Facility 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, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 11."

3. This amendment is effective as of June 30, 1975.

FOR THE NUCLEAR REGULATORY COMMISSION

Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors
Division of Reactor Licensing

Attachment:
Change No. 11
Technical Specifications

Date of Issuance: JUL 3 0 1975

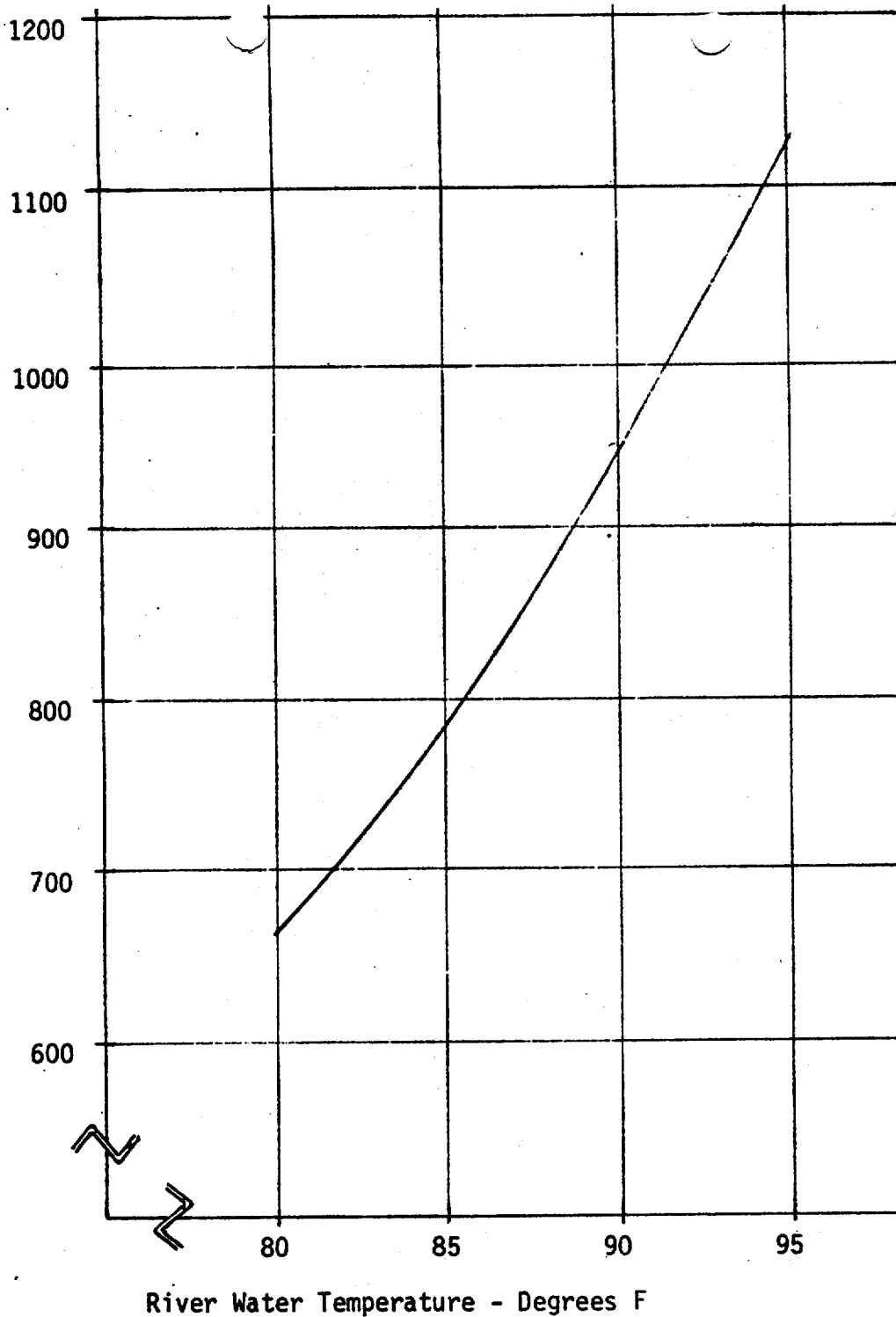
ATTACHMENT TO LICENSE AMENDMENT NO. 10
CHANGE NO. 11 TO THE TECHNICAL SPECIFICATIONS
FACILITY OPERATING LICENSE NO. DPR-49
DOCKET NO. 50-331

Replace page 3.8-6 with revised page 3.8-6.

Insert Figure 4.8.c-1, page 3.8-6a.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
<p>C. <u>Emergency Service Water System</u></p> <p>1. Except as specified in 3.8.C.2 below, both emergency service water system loops shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.</p> <p>2. From and after the date that one of the emergency service water system pumps or loops is made or found to be inoperable for any reason, reactor operation must be limited to seven days unless operability of that system is restored within this period. During such seven days all active components of the other Emergency Service Water System shall be operable, provided the requirements of 3.5.G are met.</p> <p>3. If the requirements of 3.5.C cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown condition within 24 hours.</p>	<p>C. <u>Emergency Service Water System</u></p> <p>1. Emergency Service Water Subsystem Testing</p> <p>a. Simulated automatic actuation test. each refueling outage</p> <p>b. Pump and motor operated valve operability once/3 months</p> <p>c. Flow Rate Test</p> <p>Each emergency service water pump shall deliver at least that flow determined from Figure 4.8.C-1 for the existing river water temperature. after major pump maintenance and every month except weekly during periods of time the river water temperature exceeds 80°F.</p> <p>2. When one emergency service water system pump or loop becomes inoperable, the operable pump and loop and diesel-generator required for operation of such components shall be demonstrated to be operable immediately and daily thereafter.</p>

Total Emergency Service Water Flow Required - GPM



Duane Arnold Energy Center
Iowa Electric Light and Power Company
Technical Specifications

DAEC Emergency Service
Water Flow Requirement
Figure 4.8.C-1

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

AMENDMENT NO. 10 TO FACILITY OPERATING

LICENSE NO. DPR-49

CHANGE NO. 11 TO THE TECHNICAL SPECIFICATIONS

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

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

Introduction

By telecopy request dated June 27, 1975, Iowa Electric Light and Power Company (IELP) requested emergency authorization to change the Technical Specifications appended to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center. The proposed change involves establishing the required Emergency Service Water (ESW) system flow rate based on river water temperature rather than requiring a flow rate of 1200 gpm regardless of river water temperature. Moreover, the proposed change is considered to be an interim procedural requirement until installation of modification kits or replacement pumps during the second cycle refueling outage in the first quarter of 1977.

Discussion

Section 4.8.C.1.c of the Duane Arnold Technical Specifications requires that each emergency service water pump shall deliver at least 1200 gpm at a total dynamic head of 170 feet or more. If this specification cannot be met for one of the redundant emergency service water systems, the Technical Specifications state that the flow rate and head requirements be restored within seven days or the reactor must be shut down.

IELP has stated that although the ESW pumps met the requirements of the Technical Specifications during preoperational testing, there has been evidence of a general degradation in performance as the pumps have accumulated hours of operation. One of the ESW pumps was tested during the current shutdown and it was determined that the pump could not meet the flow (1200 gpm) and head (170 feet or more) performance required by the current Technical Specifications.



IELP has calculated the ESW system flow rates required to provide adequate component cooling at river water temperatures of 80°F, 85°F, 90°F, and 95°F as shown on table 1 and figure 1 attached hereto. The requirement for only 1129 gpm flow at 95°F compared to 1200 gpm in the current Technical Specifications is the result of a reduction of 75 gpm in the diesel generator flow requirement as determined by the manufacturer based on a review of actual cooling requirements. Based on the flow rates shown on table 1 and figure 1, IELP stated that the pump that was recently tested can supply adequate ESW system cooling flow only at a river water temperature of 91°F or less.

IELP's proposed change to the Technical Specifications would establish the required ESW system flow rate by using the system flow rate versus river water temperature shown on table 1 and figure 1. The flow rate of each ESW system will be measured periodically and after specific events, e.g., after major pump maintenance and on a monthly schedule except weekly measurements will be taken when the river water temperature exceeds 80°F. The river water temperature is logged hourly by the plant computer.

The proposed Technical Specification will require that the total flow rate of an ESW system meet or exceed the required flow rate shown on figure 1 for the measured river water temperature. If the total flow rate of an ESW system does not meet this specification, the flow rate must be restored to the specified value within seven days or the reactor must be shut down.

Evaluation

The basis for the specification of the ESW system flow rate is to assure that there will be adequate cooling supplied to the components shown on table 1 (and on Figure 1) in case of a postulated accident. Based on our review and analysis of IELP's proposed ESW system flow rates as a function of river water temperature, we find that adequate cooling will be provided to the emergency equipment if the flow rates of each ESW system equal or exceed the flow rates for the river water temperatures as shown on figure 1 and in table 1. Accordingly, we have determined that specification of an ESW flow rate of 1200 gpm under all circumstances and without regard to river water temperature is not required to meet the limiting conditions of operation of the ESW system for this facility. Further, either the ESW pumps are required to provide adequate flows at the temperatures shown on Figure 4.8.C-1 (Section 4.8.C.1.c of the Technical Specifications) or the facility must be shut down; thus, adequate cooling will be provided in the unlikely event of an accident during reactor operation. We conclude that IELP's proposed Technical Specification is acceptable.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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.

Dated: JUL 3 0 1975

Enclosures:

1. Table 1
2. Figure 1

TABLE 1**EMERGENCY SERVICE WATER SYSTEM**

Flow rates required for various river water temperatures.

	Service Water Temperature			
	<u>95°F</u>	<u>90°F</u>	<u>85°F</u>	<u>80°F</u>
Diesel-generator	575	500	440	400
RHR & Core Spray Room Cooler	115	115	97	69
RCIC Room Cooler	12	12	10	7
HPCI Room Cooler	35	35	29	20
Control Room Chiller	310	220	160	125
RHR Pump Seal Coolers (2)	50	38	30	25
Core Spray Pump Motor Cooler	25	19	15	13
H & V Instrument Air Compressor	3	3	3	3
RHR Service Water Pump Motor Coolers	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>
Total Flow (gpm)	1129	946	788	666

Total Emergency Service Water Flow Required - GPM

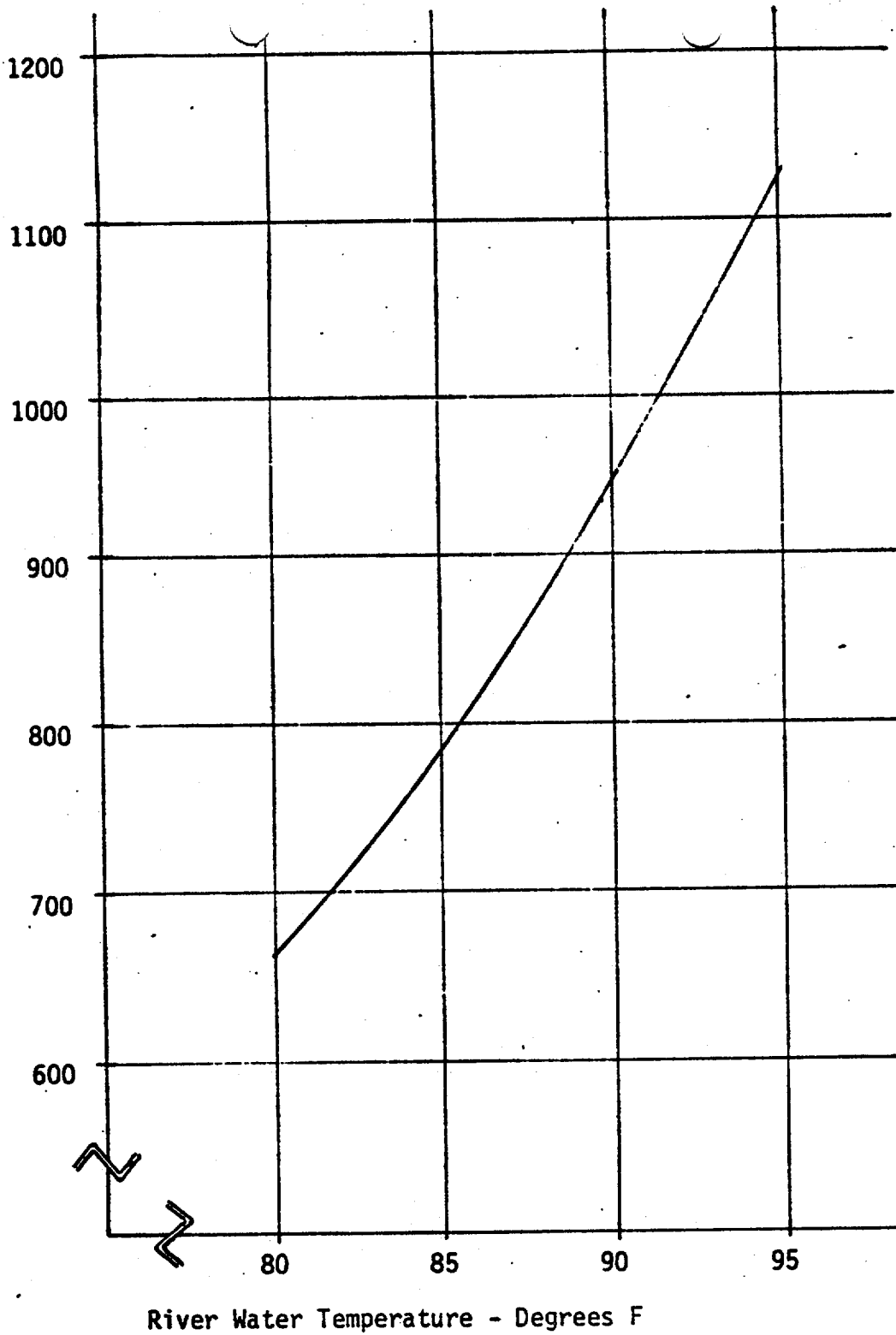


FIGURE 1

Duane Arnold Energy Center
Iowa Electric Light and Power Company
Technical Specifications

DAEC Emergency Service
Water Flow Requirement

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-331

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

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 10 to Facility Operating License No. DPR-49 issued to Iowa Electric Light and Power Company, Central Iowa Power Cooperative, and Corn Belt Power Cooperative, which revised Technical Specifications for operation of the Duane Arnold Energy Center, located in Cedar Rapids, Iowa. The amendment is effective as of its date of issuance.

The amendment establishes the required Emergency Service Water (ESW) system flow rate based on river water temperature rather than on a requirement for a flow rate of 1200 gpm regardless of river water temperature.

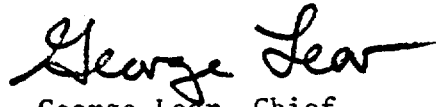
The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment is not required since the amendment does not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendment dated June 27, 1975, (2) Amendment No. 10 to License No. DPR-49, with Change No. 11, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W. Washington, D. C. and at the Cedar Rapids Public Library, 426 Third Avenue, S. E., Cedar Rapids, Iowa 52401.

A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Reactor Licensing.

Dated at Bethesda, Maryland, this 30th day of July, 1975.

FOR THE NUCLEAR REGULATORY COMMISSION



George Lear, Chief
Operating Reactors Branch #3
Division of Reactor Licensing