



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. 111
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 17, 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. 111, 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: February 5, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 111

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 contains vertical lines indicating the area of changes.

AFFECTED PAGES

3.1-4
3.1-6
3.1-21

TABLE 3.1-1 (Continued)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

Minimum No. of Operable Instrument Channels for Trip System (1)	Trip Function	Trip Level Setting	Modes in Which Function Must be Operable			Number of Instrument Channels Provided By Design	Action (1)
			Refuel (6)	Startup	Run		
2	High Drywell Pressure	≤ 2.0 psig	X(7)	X(8)	X	4 Instrument Channels	A
2	Reactor Low Water Level	$> +170''$ Indicated Level (15)	X	X	X	4 Instrument Channels	A
2	High Water Level in Scram Discharge Volume	≤ 60 Gallons	X(2)	X	X	4 Instrument Channels	A
2	Main Steam Line High Radiation	$< 3 \times$ Normal Rated Power Background*	X	X	X	4 Instrument Channels	A
4	Main Steam Line Isolation Valve Closure	$\leq 10\%$ Valve Closure	X(3)	X(13)	X(13)	8 Instrument Channels	A or C
2	Turbine Control Valve Fast Closure (Loss of Control Oil Pressure)	Within 30 milliseconds of the Start of Control Valve Fast Closure			X(4)	4 Instrument Channels	A or D
4	Turbine Stop Valve Closure	$\leq 10\%$ Valve Closure			X(4)	8 Instrument Channels	A or D
2	First Stage	Bypass below 155 psig	X	X	X	4 Instrument Channels	A or D

*Alarm setting $\leq 1.5 \times$ Normal Rated Power Background

Amendment No. 111

3.1-4

DAEC-1

3. A main steam line isolation valve closure trip bypass is effective when the reactor mode switch is in the shutdown, refuel or startup positions.

4. Bypassed when turbine first stage pressure is less than 155 psig (corresponding to 30% of rated core power). This value of first stage pressure assumes that the second stage reheaters are not in-service below 30% of rated core power.

5. IRM's are bypassed when APR's are on-scale and the reactor mode switch is in the run position.

6. When the reactor is subcritical and the reactor water temperature is less than 212°F, only the following trip functions need to be operable:
 - a. Mode switch in shutdown

 - b. Manual scram

 - c. High flux IRM

 - d. Scram discharge volume high level - may be bypassed in the refuel and shutdown modes for the purpose of resetting the scram.

 - e. APRM 15% flux

to the Refuel mode during reactor power operation does not diminish the protection provided by the reactor protection system.

Turbine stop valve closure trip occurs at approximately 10% of valve closure. Below 155 psig turbine first stage pressure (corresponding to 30% of rated core power), the scram signal due to turbine stop valve closure is by-passed because the flux and pressure scrams are adequate to protect the reactor below 30% of rated core power.

Turbine Control valve fast closure scram trip shall initiate within 30 milliseconds of the start of control valve fast closure. The trip level setting is verified by measuring the time interval from energizing the fast acting solenoid (from valve test switch) to pressure switch response; the measured result is compared to base line data taken during each refueling outage. Turbine control valve fast closure is sensed by measuring disc dump electro-hydraulic oil line pressure (Relay Emergency Trip Supply) which decreases rapidly upon generator load rejection. This scram is only effective when turbine first stage pressure is above 155 psig (corresponding to 30% of rated core power).

The requirement that the IRM's be inserted in the core when the APRM's read 5 as indicated on the scale in the Startup and Refuel modes assures that there is proper overlap in the neutron monitoring system functions and thus, that adequate coverage is provided for all ranges of reactor operation.