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Docket No. 50-331

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

Gentlemen:

In response to your request dated April 13, 1976, the Commission has issued the enclosed Amendment No. 20 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center.

The amendment consists of changes in the Technical Specifications that modify the usage of existing automatic isolation valves associated with the installation of a nitrogen recirculation system.

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

Sincerely,

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

Enclosures:

1. Amendment No. 20 to License DPR-49
2. Safety Evaluation
3. Federal Register Notice

OFFICE	ORB#2	ORB#3	DOR	OELD	ORB#3
SURNAME	RDiggs	WPaulson:acr	ASchwencer	WDPatterson	GLear
DATE	4/15/76	4/15/76	4/15/76	4/16/76	4/16/76

cc:

Jack R. Newman, Esquire
Harold F. Reis, Esquire
Lowenstein, Newman, Reis and Axelrad
1025 Connecticut Avenue, N. W.
Washington, D. C. 20036

Cedar Rapids Public Library
426 Third Avenue, S. E.
Cedar Rapids, Iowa 52401

Office for Planning and Programming
523 East 12th Street
Des Moines, Iowa 50319

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



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

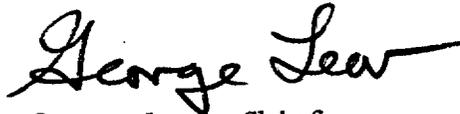
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 20
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 April 13, 1976, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink that reads "George Lear". The signature is written in a cursive style with a long horizontal stroke at the end.

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 16, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 20

FACILITY OPERATING LICENSE NO. DPR-49

DOCKET NO. 50-331

Replace page 3.7-25 with the attached revised page. The changed area on the revised page is shown by a marginal line.

TABLE 3.7-3

PRIMARY CONTAINMENT POWER OPERATED ISOLATION VALVES

<u>Isolation Group (Note 1)</u>	<u>Valve Identification</u>	<u>Number of Power Operated Valves</u>	<u>Maximum Operating Time (Seconds)</u>	<u>Normal Position</u>	<u>Action on Initiating Signal</u>
1	*Main Steam Line	8	3<T<5	O	GC
1	Main Steam Line Drain	2	15	C	SC
1	Recirculation Loop Sample	2	NA	C	SC
1	Recirculation Pump Seal Purge	2	5	O	GC
3	O ₂ Analyzer	20	NA	O	GC
2	Drywell Floor Drain Discharge	2	4	O	GC
2	Drywell Equipment Drain Discharge	2	4	O	GC
3	Drywell Purge Inlet	3	5	C	SC
3	Drywell Purge Outlet	3	5	C	SC
3	Torus Purge Outlet	3	5	C	SC
3	Drywell and Torus Nitrogen Makeup	3	NA	O	GC
4	RHR Shutdown Cooling Supply	2	22	C	SC
3	*Containment Compressor Suction	2	25	O	GC
3	Suppression Pool/Drywell and Suppression Pool Purge Inlet	2	5	O	GC



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 20 TO LICENSE NO. DPR-49

IOWA ELECTRIC LIGHT AND POWER COMPANY

CENTRAL IOWA POWER COMPANY

CORN BELT POWER COOPERATIVE

DOCKET NO. 50-331

DUANE ARNOLD ENERGY CENTER

Introduction

By letter dated April 13, 1976, Iowa Electric Light and Power Company, Central Iowa Power Company, and Corn Belt Power Cooperative (the licensees) requested an amendment to Operating License No. DPR-49 for the Duane Arnold Energy Center. The request involves revisions to the Technical Specifications with regard to the modification of usage of existing automatic isolation valves associated with the installation of a nitrogen recirculation system.

Background

As a result of recent structural analyses performed in conjunction with a generic review of pressure-suppression pool dynamic loads for the General Electric BWR Mark I containments, it was determined that if pool dynamic loads resulting from a postulated loss-of-coolant accident (LOCA) are considered, the margin of safety in the containment design for the Duane Arnold Energy Center is lower than originally intended. Subsequently, the licensee agreed to institute a "differential pressure control system" to mitigate the pool dynamic loads and thereby restore the margin of safety in the containment design. The differential pressure control system would establish a positive differential pressure between the drywell and torus regions of the containment. This would reduce the height of the water leg in the downcomers and subsequently would reduce the LOCA hydrodynamic loads.

To control combustible gases following a postulated loss-of-coolant accident, the drywell atmosphere is inerted with nitrogen during normal operation. The inclusion of a positive differential pressure between the drywell and torus results in a loss of nitrogen from the drywell to the torus airspace from leakage through the vacuum breakers on the vent headers. To minimize the loss of nitrogen from the system, the licensee has proposed a recirculation system which would collect the nitrogen in the torus and return it to the drywell.

Discussion and Evaluation

The recirculation system provides a connection between the existing suppression chamber and drywell purge line and the containment compressor suction line. The recirculation system takes suction from the common suppression chamber and drywell purge line and branches into two parallel flow paths, each containing two shutoff valves, a blower with an integral check valve, and downstream shutoff valves in series. The parallel lines rejoin and discharge into the containment compressor suction line. The existing isolation valve (CV-4306) in the common suppression pool and drywell purge inlet line and the suppression chamber purge inlet valve (CV-4308) would be changed from a normally closed position to a normally open position to provide the flow path from the torus airspace to the drywell.

We have reviewed the proposed recirculation system for the Duane Arnold Energy Center with regard to both containment isolation capability and potential adverse effects on a postulated loss-of-coolant accident. Isolation valves CV-4306 and CV-4308 as well as the redundant isolation valves in the containment compressor suction line, will close on a Group 3 isolation signal (reactor low water level, or high drywell pressure, or high/low radiation level in the reactor building ventilation exhaust plenum or refueling floor). The position of both valves will be indicated in the control room, and the valves will be leak tested in accordance with Appendix J to 10 CFR Part 50.

A recirculation system could have an effect on the consequences of a postulated loss-of-coolant accident by allowing steam bypass of the pressure-suppression pool by direct communication of the drywell and the suppression chamber airspace. However, one section of the recirculation line is a one and one-half inch diameter pipe. The low mass flow rate associated with this size line in conjunction with the redundant capability to isolate both the suppression chamber purge line and the containment compressor suction line will result in a negligible amount of steam bypass. In addition, there will be a check valve integral with each blower, which would prevent reverse flow from the drywell and further lessen the chance of steam bypass. Therefore, the proposed design assures that the installation would have a negligible effect on a loss-of-coolant accident.

Environmental Consideration

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

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the changes do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the changes do 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: April 16, 1976

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. 20 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 Linn County, Iowa. The amendment is effective as of its date of issuance.

The amendment consists of changes in the Technical Specifications that modify the usage of existing automatic isolation valves associated with the installation of a nitrogen recirculation system.

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 was not required since the amendment does not involve a significant hazards consideration.

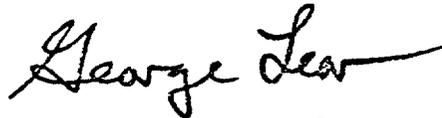
The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for license amendment dated April 13, 1976, (2) Amendment No. 20 to License No. DPR-49, 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 Operating Reactors.

Dated at Bethesda, Maryland, this 16 day of April 1976

FOR THE NUCLEAR REGULATORY COMMISSION



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