

Sept. 30, 1977

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- BScharf (10)
- JMcGough

Docket No. 50-331

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

Gentlemen:

The Commission has issued the enclosed Amendment No. 39 to Facility License No. DPR-49 for the Duane Arnold Energy Center (DAEC). This amendment consists of changes to the Technical Specifications and is in response to your application dated June 24, 1977 (IE-77-1230), as supplemented by your letter of July 29, 1977 (IE-1453).

This amendment increases DAEC's maximum average planar linear heat generation rates (MAPLHGR).

Your submittals, as approved by this amendment, fulfill the requirements of our exemption of March 11, 1977. When operated in conformance with this amendment, DAEC will be in conformance with all requirements of 10 CFR Part 50 Section 50.46 and Appendix K to 10 CFR 50. Therefore, the exemption issued March 11, 1977 was terminated.

Copies of the related Safety Evaluation and the ~~FEDERAL~~ REGISTER Notice are also enclosed.

Sincerely,

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

Enclosures:

1. Amendment No. 39
2. Safety Evaluation
3. FEDERAL REGISTER Notice

cc w/enclosures: See next page

\*SEE PREVIOUS YELLOW FOR CONCURRENCES

Cont. 1  
60

OFFICE >	ORB#3:DOR	ORB#3:DOR	OELD	ORB#3:DOR		
SURNAME >	*CParrish	RClark	*	G.Lear		
DATE >	9/29/77	9/29/77	9/30/77	9/30/77		

Distribution

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- BJones (4)
- BScharf (10)
- JMcGough
- DEisenhut

- ACRS (16)
- OPA (Clare Miles)
- DRoss
- TBAbernathy
- JRBuchanan

Docket No. 50-331

Iowa Electric Light & Power Company  
 ATTN: Mr. Duane Arnold, President  
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This amendment increases DAEC's maximum average planar linear heat generation rates (MAPLHGR).

Your submittals, as approved by this amendment, fulfill the requirements of our exemption of March 11, 1977. When operated in conformance with this amendment, DAEC will be in conformance with all requirements of 10 CFR Part 50 Section 50.46 and Appendix K to 10 CFR 50. Therefore, there is no need to continue in force the exemption issued March 11, 1977 and the exemption is hereby rescinded.

Copies of the related Safety Evaluation and the FEDERAL REGISTER Notice are also enclosed.

Sincerely,

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

- Enclosures:
1. Amendment No.
  2. Safety Evaluation
  3. FEDERAL REGISTER Notice

cc w/enclosures:  
 See next page

*Handwritten notes:*  
 9/30/77  
 Make check on p. 283  
 9/30/77

OFFICE ➤	ORB #3	ORB #3	OELD	ORB #3		
SURNAME ➤	CParrish	RClark m.jf		GLear		
DATE ➤	9/29/77	9/29/77	/ /77	/ /77		



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

September 30, 1977

Docket No. 50-331

Iowa Electric Light & Power Company  
ATTN: Mr. Duane Arnold, President  
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This amendment increases DAEC's maximum average planar linear heat generation rates (MAPLHGR).

Your submittals, as approved by this amendment, fulfill the requirements of our exemption of March 11, 1977. When operated in conformance with this amendment, DAEC will be in conformance with all requirements of 10 CFR Part 50 Section 50.46 and Appendix K to 10 CFR 50. Therefore, the exemption issued March 11, 1977 has terminated.

Copies of the related Safety Evaluation and the FEDERAL REGISTER Notice are also enclosed.

Sincerely,

A handwritten signature in cursive script that reads "George Lear".

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

Enclosures:

1. Amendment No. 39
2. Safety Evaluation
3. FEDERAL REGISTER Notice

cc w/enclosures: See next page

September 30, 1977

cc:

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

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

Chairman, Linn County  
Board of Supervisors  
Cedar Rapids, Iowa 52406

Iowa Electric Light & Power Company  
ATTN: Ellery L. Hammond  
P. O. Box 351  
Cedar Rapids, Iowa 52406

Chief, Energy Systems Analysis Branch (AW-459)  
Office of Radiation Programs  
U. S. Environmental Protection Agency  
Room 645, East Tower  
401 M Street, S. W.  
Washington, D. C. 20460

U. S. Environmental Protection Agency  
Region VII  
ATTN: EIS COORDINATOR  
1735 Baltimore Avenue  
Kansas City, Missouri 64108

Cedar Rapids Public Library  
426 Third Avenue, S. E.  
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. 39  
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 24, 1977, as supplemented by letter dated July 29, 1977, 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.

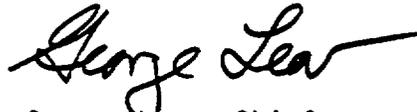
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 39, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 30, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 39  
TO THE TECHNICAL SPECIFICATIONS  
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 contain vertical lines indicating the area of change.

<u>Remove</u>	<u>Replace</u>
vii	vii
3.12-1	3.12-1
3.12-4	3.12-4
3.12-6	3.12-6
3.12-9	3.12-9
3.12-11	3.12-11
3.12-13	3.12-13
3.12-14	3.12-14
3.12-15	3.12-15
3.12-16	3.12-16
3.12-17	3.12-17

## TECHNICAL SPECIFICATIONS

## LIST OF FIGURES

<u>Figure Number</u>	<u>Title</u>
1.1-1	Power/Flow Map
1.1-2	Relative Bundle Power Histogram for Power Distribution Used in Statistical Analysis
2.1-1	APRM Flow Biased Scram and Rod Blocks
2.1-2	(Deleted)
4.1-1	Instrument Test Interval Determination Curves
4.2-2	Probability of System Unavailability Vs. Test Interval
3.4-1	Sodium Pentaborate Solution Volume Concentration Requirements
3.4-2	Saturation Temperature of Sodium Pentaborate Solution
3.6-1	DAEC Operating Limits
6.2-1	DAEC Nuclear Plant Staffing
3.12-1	$K_f$ as a Function of Core Flow
3.12-2	Limiting Average Planar Linear Heat Generation Rate (Fuel Type 2)
3.12-3	Limiting Average Planar Linear Heat Generation Rate (Fuel Type 3)
3.12-4	Limiting Average Planar Linear Heat Generation Rate (Fuel Type 4, 7D230)
3.12-5	Limiting Average Planar Linear Heat Generation Rate (Fuel Type 8D274L)
3.12-6	Limiting Average Planar Linear Heat Generation Rate (Fuel Type 8D274H)

LIMITING CONDITION FOR OPERATIONSURVEILLANCE REQUIREMENT3.12 CORE THERMAL LIMITS4.12 CORE THERMAL LIMITSApplicability:

The Limiting Conditions for Operation associated with the fuel rods apply to those parameters which monitor the fuel rod operating conditions.

Applicability:

The Surveillance Requirements apply to the parameters which monitor the fuel rod operating conditions.

Objective

The Objective of the Limiting Conditions for Operation is to assure the performance of the fuel rods.

Objective

The Objective of the Surveillance Requirements is to specify the type and frequency of surveillance to be applied to the fuel rods.

SpecificationsSpecifications

A. Maximum Average Planar Linear Heat Generation Rate (MAPLHGR)

A. Maximum Average Planar Linear Heat Generation Rate (MAPLHGR)

During reactor power operation, the actual MAPLHGR for each type of fuel as a function of average planar exposure shall not exceed the limiting value shown in Figs. 3.12-2, -3, -4, -5 and -6. If at any time during reactor power operation it is determined by normal surveillance that the limiting value for MAPLHGR (LAPLHGR) is being exceeded, action shall then be initiated within 15 minutes to restore operation to within the prescribed limits. If the MAPLHGR (LAPLHGR) is not returned to within the prescribed limits within two hours, the reactor shall be brought to the cold shutdown condition within 36 hours. Surveillance and corresponding action shall continue until the prescribed limits are again being met.

The MAPLHGR for each type of fuel as a function of average planar exposure shall be determined daily during reactor operation at  $\geq 25\%$  rated thermal power.

## DAEC-1

### 3.12 BASES: CORE THERMAL LIMITS

#### A. Maximum Average Planar Linear Heat Generation Rate (MAPLHGR)

This specification assures that the peak cladding temperature following the postulated design basis loss-of-coolant accident will not exceed the limit specified in 10 CFR Part 50, Appendix K.

The peak cladding temperature following a postulated loss-of-coolant accident is primarily a function of the average heat generation rate of all the rods of a fuel assembly at any axial location and is only dependent secondarily on the rod to rod power distribution within an assembly. Since expected local variations in power distribution within a fuel assembly affect the calculated peak clad temperature by less than  $\pm 20^{\circ}\text{F}$  relative to the peak temperature for a typical fuel design, the limit on the average linear heat generation rate is sufficient to assure that calculated temperatures are within the 10 CFR Part 50, Appendix K limit. The limiting values for MAPLHGR's are shown in Figures 3.12-2, 3.12-3, 3.12-4, 3.12-5 and 3.12-6.

The calculational procedure used to establish the MAPLHGR's shown on Figures 3.12-2, 3.12-3, 3.12-4, and 3.12-5 and 3.12-6 is based on a loss-of-coolant accident analysis. The analysis was performed using General Electric (GE) calculational models which are consistent with the requirements of Appendix K to 10 CFR Part 50.

## DAEC-1

To assure that the fuel cladding integrity Safety Limit is not exceeded during any anticipated abnormal operational transient, the most limiting transients have been analyzed to determine which result in the largest reduction in critical power ratio (CPR). The type of transients evaluated were loss of flow, increase in pressure and power, positive reactivity insertion, and coolant temperature decrease.

The limiting transient which determines the required steady state MCPR limit is the turbine trip with failure of the turbine bypass. This transient yields the largest reduction in MCPR ( $\Delta$ MCPR). When the  $\Delta$ MCPR is added to the safety limit MCPR value, the required minimum operating limit MCPR of Specification 3.12.C is obtained.

Prior to the analysis of abnormal operational transients an initial fuel bundle MCPR was determined. This parameter is based on the bundle flow calculated by a GE multi-channel steady state flow distribution model as described in Section 4.4 of NEDO-20360<sup>(2)</sup>.

TABLE 3.12-1

SIGNIFICANT INPUT PARAMETERS TO THE DUANE ARNOLD  
LOSS-OF-COOLANT ACCIDENT ANALYSIS

## COOLANT PARAMETERS:

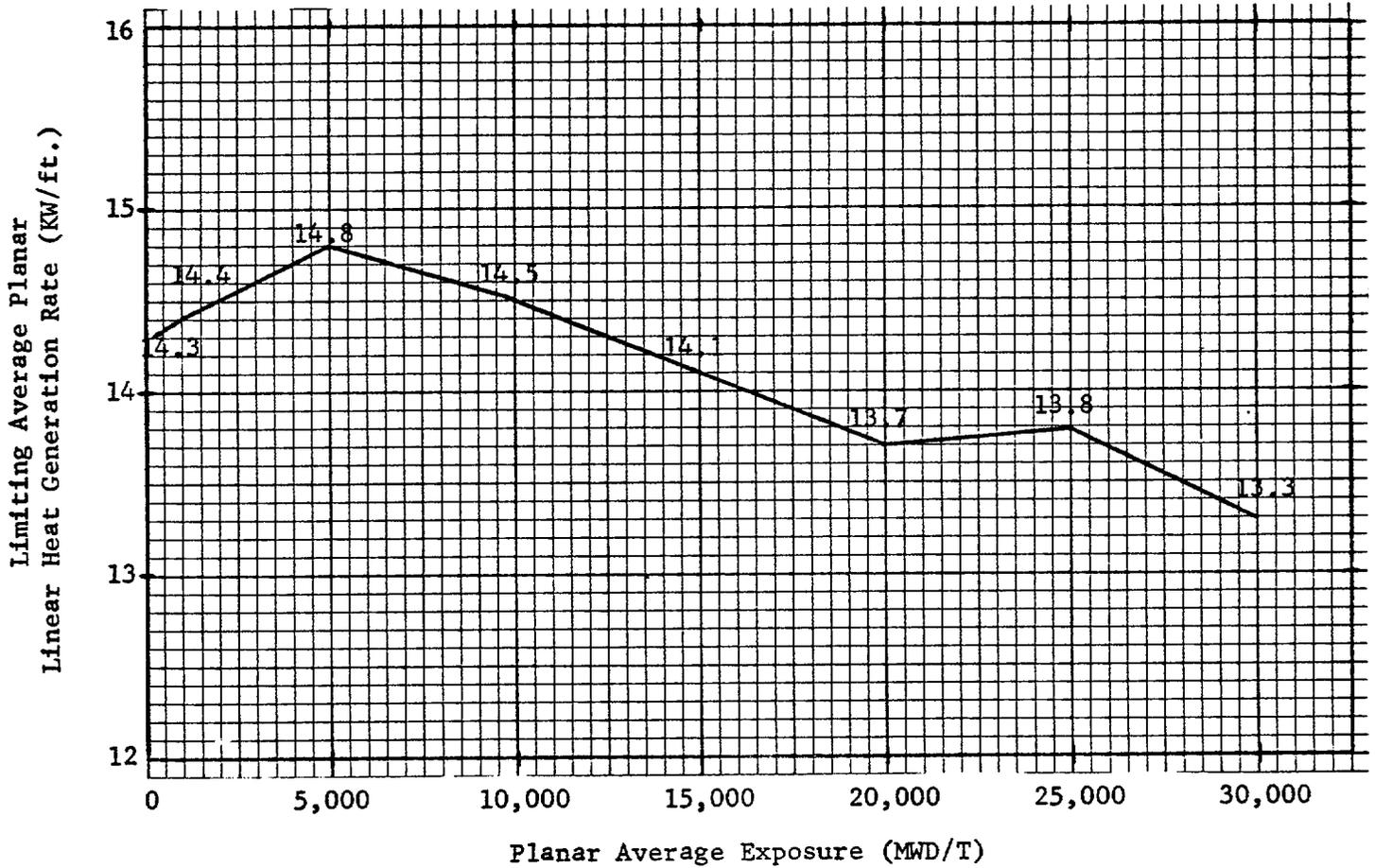
Core Thermal Power	$\frac{1655 \text{ MWt}}{105\%}$ which corresponds to vessel rated steam output	
Vessel Steam Output	$7.16 \times 10^6$ Lbm/h which corresponds to 105% of vessel rated steam output	
Vessel Steam Dome Pressure	1055 psia	
Recirculation Line Break Area for Large Breaks (ft <sup>2</sup> )	2.51 (DBA)	
Recirculation Line Break Area for Small Breaks (ft <sup>2</sup> )	1.0	0.05 (WSB)

## FUEL PARAMETERS:

<u>Fuel Type</u>	<u>Fuel Bundle Geometry</u>	<u>Peak Technical Specification Linear Heat Generation Rate (KW/ft)</u>	<u>Design Axial Peaking Factor</u>	<u>Initial Minimum Critical Power Ratio</u>
Initial Core Type 2	7 x 7	18.5	1.5	1.2
Initial Core Type 3	7 x 7	18.5	1.5	1.2
7D230 Type 4	7 x 7	18.5	1.5	1.2
8D274L	8 x 8	13.4	1.4	1.2
8D274H	8 x 8	13.4	1.4	1.2

## 3.12 REFERENCES

1. Duane Arnold Energy Center Loss-of-Coolant Accident Analysis Report, NEDO-21082-02-1A, Class I, June 1977, Appendix A.
2. General Electric EWR Generic Reload Application for 8 x 8 Fuel, NEDO-20360, Revision 1, November 1975.
3. "Fuel Densification Effects on General Electric Boiling Water Reactor Fuel", Supplements 6, 7 and 8, NEDM-19735, August 1973.
4. Supplement 1 to Technical Reports on Densifications of General Electric Reactor Fuels, December 14, 1973 (AEC Regulatory Staff).
5. Communication: V. A. Moore to I. S. Mitchell, "Modified GE Model for Fuel Densification", Docket 50-321, March 27, 1974.
6. R. B. Linford, Analytical Methods of Plant Transient Evaluations for the GE BWR, February 1973 (NEDO-10802).
7. General Electric Company Analytical Model for Loss-of-Coolant Analysis in Accordance with 10 CFR Part 50, Appendix K, NEDE-20566 (Draft), August 1974.
8. Duane Arnold Energy Center Reload Number Two Licensing Submittal, NEDO-21082-02, Class I, January 1977.
9. Duane Arnold Energy Center Reload Number Two Licensing Submittal, Supplement 1, Partially Drilled Core, NEDO-21082-02-01, Class I, June 1977.
10. Duane Arnold Energy Center Loss of Coolant Accident Analysis Report, NEDO NEDO-21082-02-1A, Class I, July 1977, Appendix A, Revision 1.



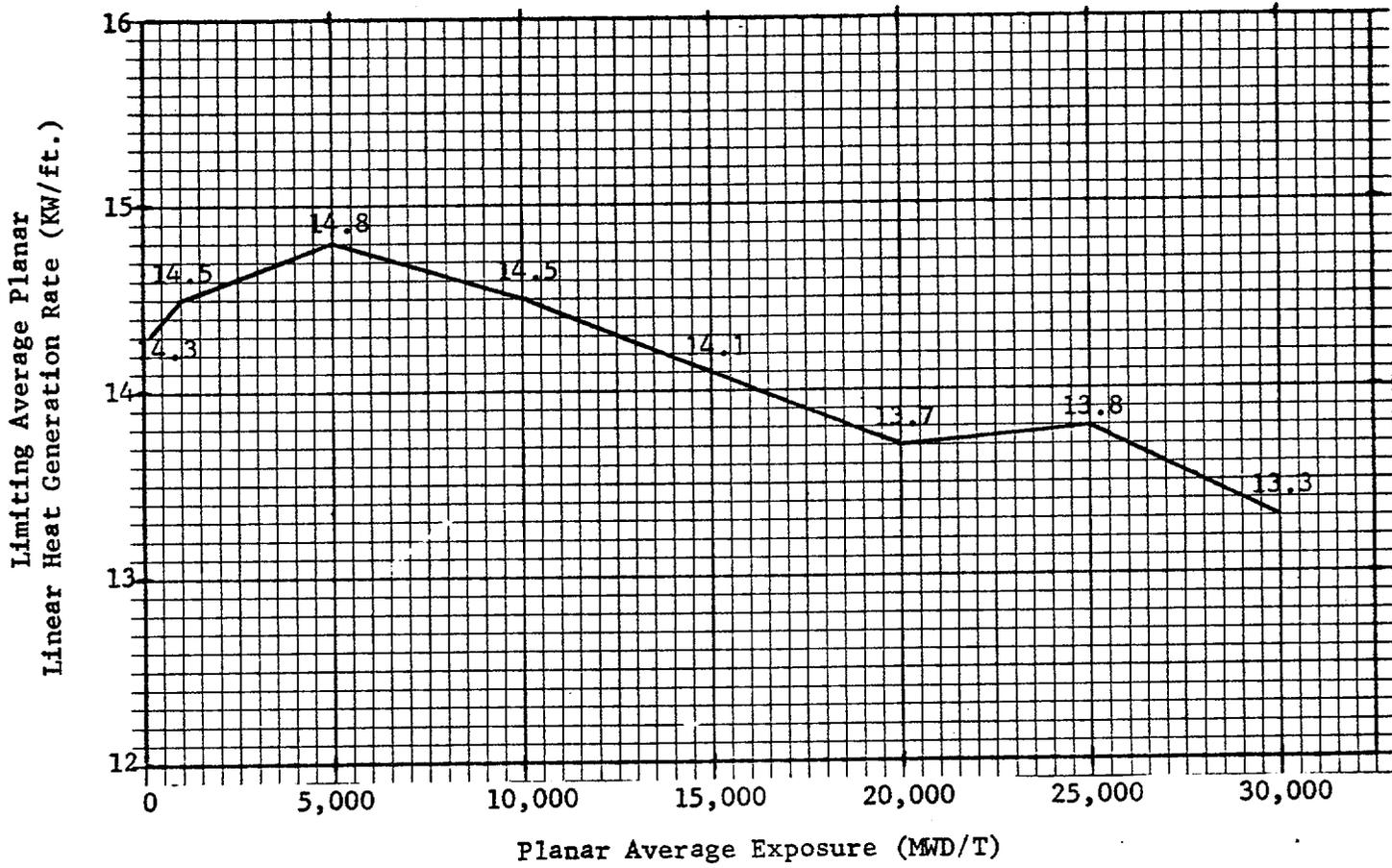
DUANE ARNOLD ENERGY CENTER  
 IOWA ELECTRIC LIGHT AND POWER COMPANY  
 TECHNICAL SPECIFICATIONS

---

LIMITING AVERAGE PLANAR LINEAR HEAT  
 GENERATION RATE AS A FUNCTION OF PLANAR  
 AVERAGE EXPOSURE

FUEL TYPE: INITIAL CORE TYPE 2

FIGURE 3.12-2



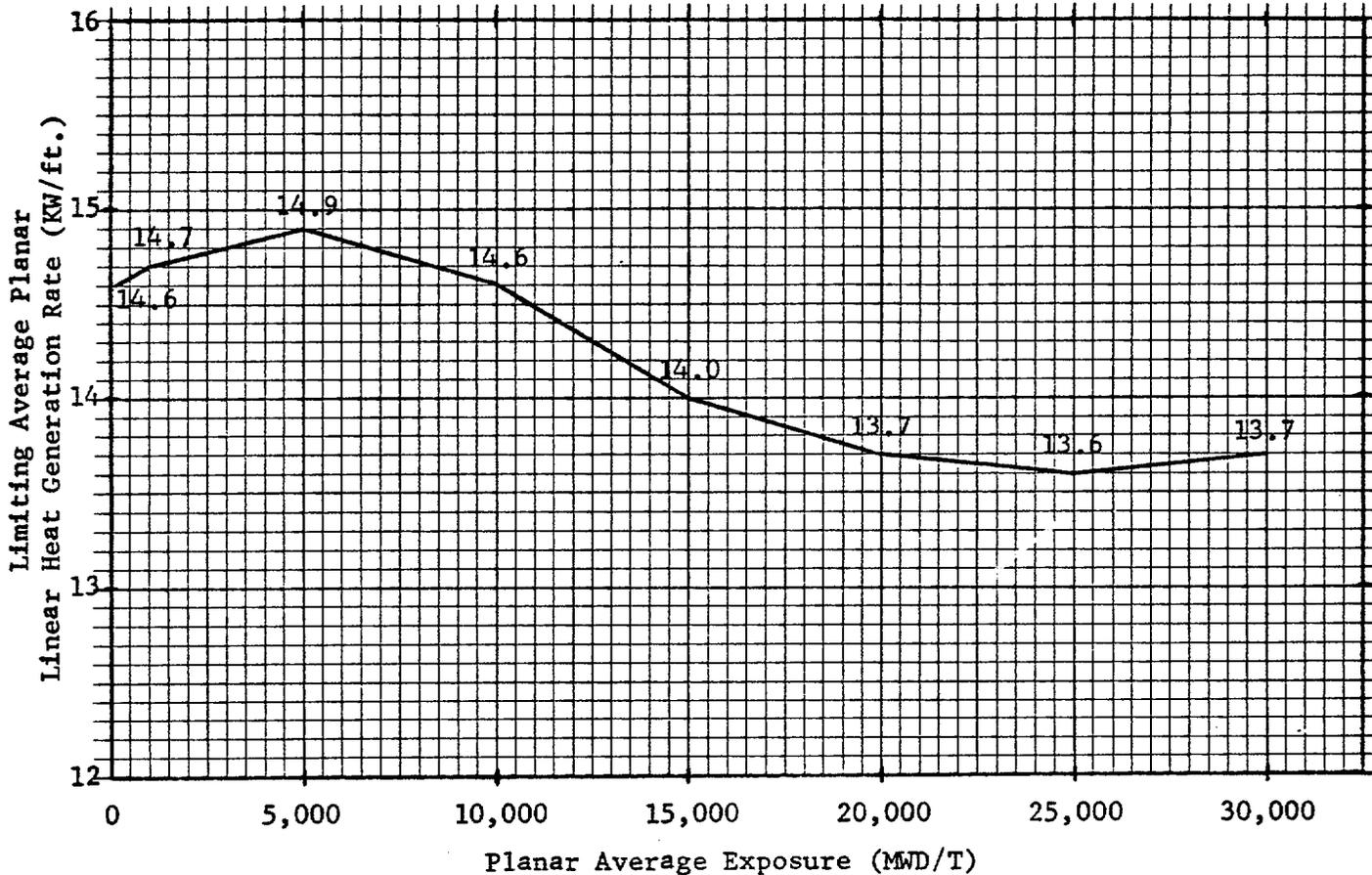
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 TECHNICAL SPECIFICATIONS

---

LIMITING AVERAGE PLANAR LINEAR HEAT  
 GENERATION RATE AS A FUNCTION OF PLANAR  
 AVERAGE EXPOSURE

FUEL TYPE: INITIAL CORE TYPE 3

FIGURE 3.12-3



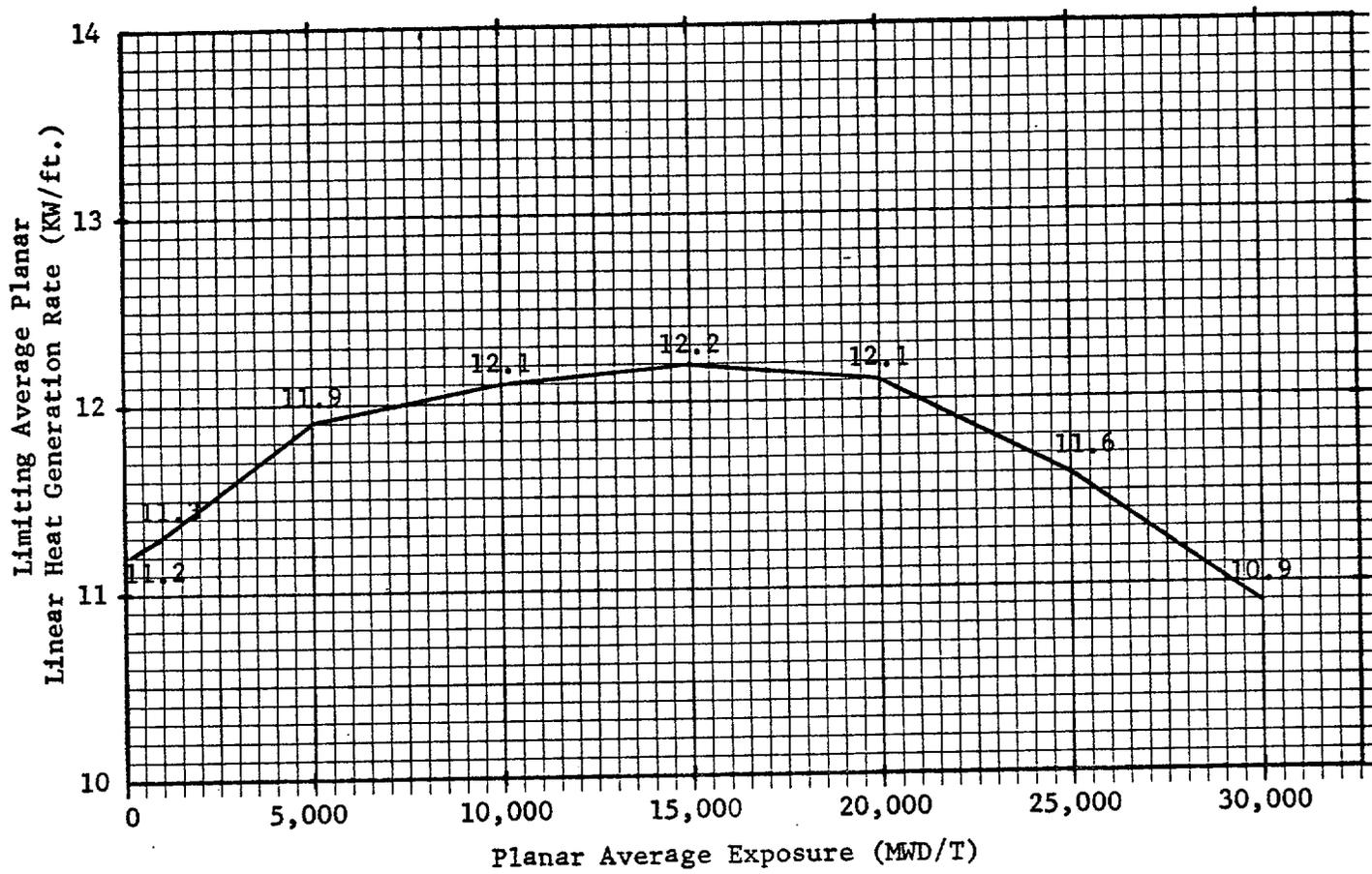
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 IOWA ELECTRIC LIGHT AND POWER COMPANY  
 TECHNICAL SPECIFICATIONS

---

LIMITING AVERAGE PLANAR LINEAR HEAT  
 GENERATION RATE AS A FUNCTION OF PLANAR  
 AVERAGE EXPOSURE

FUEL TYPE: 7D230 TYPE 4

FIGURE 3.12-4



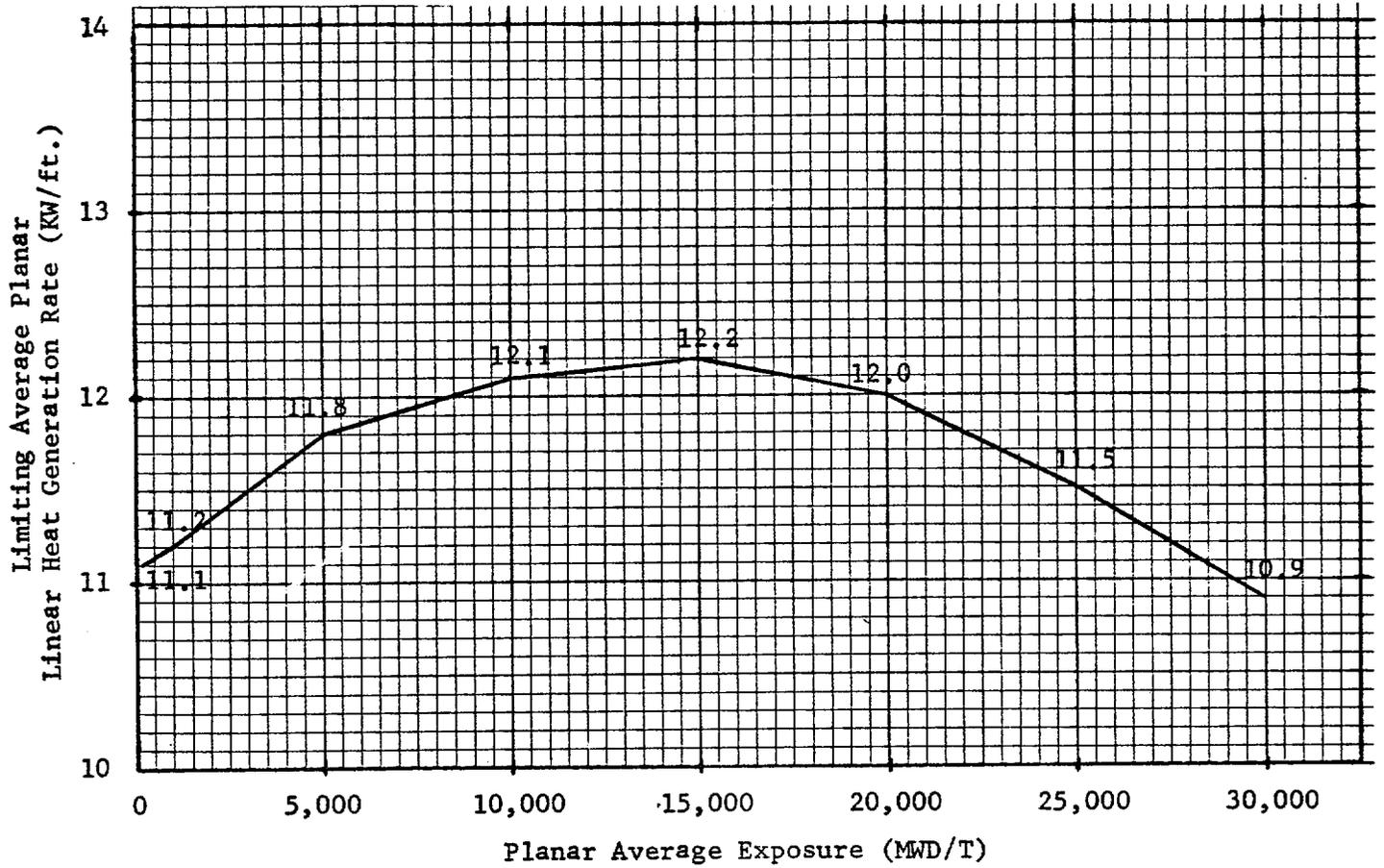
DUANE ARNOLD ENERGY CENTER  
 IOWA ELECTRIC LIGHT AND POWER COMPANY  
 TECHNICAL SPECIFICATIONS

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LIMITING AVERAGE PLANAR LINEAR HEAT  
 GENERATION RATE AS A FUNCTION OF PLANAR  
 AVERAGE EXPOSURE

FUEL TYPE: 8D274L

FIGURE 3.12-5



DUANE ARNOLD ENERGY CENTER  
 IOWA ELECTRIC LIGHT AND POWER COMPANY  
 TECHNICAL SPECIFICATIONS

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LIMITING AVERAGE PLANAR LINEAR HEAT  
 GENERATION RATE AS A FUNCTION OF PLANAR  
 AVERAGE EXPOSURE

FUEL TYPE: 8D274H

FIGURE 3.12-6



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 39 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

Introduction

By letter dated June 24, 1977, supplemented by a letter dated July 29, 1977, Iowa Electric Light and Power Company (the licensee) requested changes to the Technical Specifications (Appendix A) appended to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center (DAEC). On March 11, 1977, NRC issued to DAEC an interim Exemption to the requirements of 10 CFR §50.46. The Exemption confirmed the appropriateness of the licensee's voluntary action of agreeing to submit, on a timely basis, a re-evaluation of the Emergency Core Cooling System (ECCS) cooling performance using a General Electric ECCS evaluation model approved by the staff and permitted operation of DAEC while the required calculations and re-evaluation were being performed. The proposed amendment and revised Technical Specifications have responded to the above requirement in the Exemption and reflect the results of the ECCS re-evaluation. This licensing action was noticed in the FEDERAL REGISTER on July 28, 1977 (42FR38442).

Discussion

In accordance with the requirements of the Commission's ECCS Acceptance Criteria 10 CFR §50.46, the licensee submitted on January 31, 1977, an ECCS evaluation for proposed operation with a reload containing certain new fuel elements. This evaluation included limits on average planar linear heat generation rates in proposed Technical Specification Figures 3.5-1C and 3.5-1D. The ECCS performance evaluation submitted by the licensee was based upon an ECCS evaluation model developed by General Electric Company (GE) the designer of the facility. The GE ECCS evaluation model had been previously found to conform to the requirements of the Commission's ECCS Acceptance Criteria, 10 CFR Part 50 §50.46 and Appendix K. The evaluation indicated that with the average planar linear heat generation rate limited as set forth in the evaluation, and with other limits set forth in the facility's Technical Specifications, the ECCS cooling performance for the facility would conform with the criteria contained in 10 CFR §50.46(b) which govern calculated peak clad temperature, maximum cladding oxidation, maximum hydrogen generation, coolable geometry and long-term cooling.

In December 1976, the NRC staff was informed by General Electric that several errors had been discovered in the computer codes used to calculate peak clad temperature and the clad oxidation percentage in the General Electric ECCS evaluation model. These errors had been discovered by GE during a continuing internal Quality Assurance (QA) audit of their LOCA evaluation model codes. Based on a preliminary assessment, including information and supportive calculations by General Electric, the NRC staff determined that the combined effect of the code errors, when corrected, could produce ECCS evaluation results which would require no reduction in operating limits for Duane Arnold.

In the absence of any safety problem associated with operation of the DAEC facility during the period until the computer computations were completed, there appeared to be no public interest consideration favoring restriction of the operation of the facility. Accordingly, the Commission determined that an exemption in accordance with 10 CFR §50.12 was appropriate. The specific exemption was issued on March 11, 1977 and was limited to the period of time necessary to complete computer calculations <sup>(1)</sup>. The exemption was conditioned as follows:

- (1) As soon as possible, the licensee shall submit a re-evaluation of ECCS cooling performance calculated in accordance with General Electric Company's Evaluation Model approved by the NRC staff and corrected for the errors described herein and any other corrections in the model of which the licensee is aware at the time the calculations are performed.

The corrected analyses required by the exemption were provided for the present core in letters dated June 24, 1977 <sup>(2)</sup> and July 29, 1977 <sup>(3)</sup>. The corrected analyses included correction of all input errors previously made and correction of all computer code errors. The corrected analyses were performed using a calculational model which contains several model changes approved by the NRC staff in a Safety Evaluation issued April 12, 1977 <sup>(4)</sup>, which is incorporated by reference in the present evaluation.

### Evaluation

We have reviewed the corrected analyses submitted for Duane Arnold Energy Center (DAEC) in References 2 and 3. We conclude that DAEC will be in conformance with all requirements of 10 CFR §50.46 and Appendix K to 10 CFR §50.46 when: 1) it is operated in accordance with the "MAPLHGR VERSUS AVERAGE PLANAR EXPOSURE" values given in Tables 5a, 5b, 5c, 5d, and 5e of Reference 3; and 2) when it is operated at a Minimum Critical Power Ratio (MCPR) equal to or greater than 1.20 (more restrictive MCPR limits are currently required for reasons not connected with the Loss-of-Coolant-Accident).

This analyses is the "lead plant" submittal using the corrected model for BWR 4's without low-pressure coolant injection (LPCI) system modification. The analyses provide all information requested in the NRC letter to GE on June 30, 1977<sup>(5)</sup> on break spectrum and documentation requirements for the new analyses.

The limiting size and location break for DAEC is the largest double-ended guillotine break of the recirculation suction line, which is the largest diameter recirculation line in the plant. The large size of this break causes it to have the earliest time to departure-from-nucleate boiling (DNB time) for any break since the high flow out the break causes very rapid decay of the core flow. Early DNB time causes less stored heat to be eliminated before DNB occurs, and a higher peak clad temperature (PCT) results. The high flow out of this (largest) break also causes the core to uncover the earliest of any break, which results in loss of film boiling at an earlier time than for other breaks, also ultimately causing a higher PCT. In addition, for this particular plant (DAEC), results were provided to show that the time interval during which the core remains uncovered is longest for this largest break. While the first two effects (DNB and uncover) are expected to be most limiting (earliest) for the largest break on all BWR 4 plants, this latter effect (uncovered time interval) is a plant specific function of break area, bypass flow area, bypass flow resistance, and core volume. For plants where the longest uncover time interval occurs for the largest break, as it does on DAEC, then all of the above mentioned effects combine to cause the highest PCT, clearly demonstrating that the largest break is the most limiting. Therefore, the results of the corrected analysis are based upon the most conservative set of conditions and are acceptable for DAEC.

#### ENVIRONMENTAL CONSIDERATION

The environmental impacts associated with the Duane Arnold facility have been previously examined in the Final Environmental Statement issued by the Commission on March 1973. That environmental review was based upon plant operations at a power level of 1658 MW thermal. As a result of this amendment, the operating power level of the facility may be able to be increased by approximately 7% under certain control rod patterns. However, even with this amendment, the maximum power level will be limited to 1593 MW thermal due to other restrictions, which is a power level less than that previously evaluated for this facility in the FES. Thus this amendment does not authorize a change in effluent types or total amounts from those which have previously been examined and found acceptable.

This amendment will have no other environmental effects. We conclude that this amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.55(d)(4) that an environmental statement, negative declaration, or environmental impact 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 amendment 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 amendment 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.

Date: September 30, 1977

## References

1. Letter from E. G. Case (NRC) to L. Liv (Iowa Electric),  
March 11, 1977.
2. Letter from L. Liv (Iowa Electric) to E. G. Case (NRC), June  
24, 1977.
3. Letter from L. Liv (Iowa Electric) to E. G. Case (NRC), July  
29, 1977.
4. Letter from K. Goller (NRC) to G. Sherwood (GE), Changes to  
GE-ECCS-EM, April 12, 1977.
5. Letter D. G. Eisenhut (NRC) to E. D. Fuller (GE), Subject:  
Documentation of the Reanalysis Results for the Loss-of-Coolant  
Accident (LOCA) for Lead and Non-Lead Plants, June 30, 1977.

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

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 39 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 to the Technical Specifications to increase DAEC's maximum average planar linear heat generation rates (MAPLHGR).

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. Notice of Proposed Issuance of Amendment to Facility Operating License in connection with this action was published in the FEDERAL REGISTER on July 28, 1977 (42FR38442). No request for a hearing or petition for leave to intervene was filed following notice of the proposed action.

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 impact statement or negative declaration and 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 amendment dated June 24, 1977, as supplemented by letter dated July 29, 1977, (2) Amendment No. 39 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, 30th day of September, 1977.

FOR THE NUCLEAR REGULATORY COMMISSION



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