PDR

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

In the Matter of	)	
	)	
NORTHERN STATES POWER COMPANY	)	Docket No. 50-263
	)	
(Monticello Nuclear Generating Plant)	)	

ORDER FOR MODIFICATION OF LICENSE

I.

The Northern States Power Company (the licensee) is the holder of facility license DPR-22, which authorizes operation of the Monticello Nuclear Generating Plant in Monticello, Wright County, Minnesota. This license provides, among other things, that it is subject to all rules, regulations and orders of the Commission now or hereafter in effect.

II.

Pursuant to the requirements of the Commission's regulations in 10 CFR §§ 50.46, "Acceptance Criteria and Emergency Core Cooling Systems for Light Water Nuclear Power Reactors", on August 20, 1974 and December 11, 1974, the licensee submitted an evaluation of ECCS cooling performance calculated in accordance with an evaluation model developed by the General Electric Company ("th

vendor"), along with certain proposed technical specifications necessary to bring reactor operation into conformity with the results of the evaluation.

The evaluation model developed by the vendor has been analyzed by the Regulatory staff for conformity with the requirements of 10 CFR Part 50, Appendix K, "ECCS Evaluation Models". The Regulatory staff's evaluation of the vendor's model is described in two previously published documents: Status Report by the Directorate of Licensing in the Matter of General Electric ECCS Evaluation Model Conformance to 10 CFR Part 50, Appendix K, issued October 15, 1974, and a Supplement to the Status Report, issued November 13, 1974. Based on its evaluation, the Regulatory staff has concluded that the vendor's evaluation model was not in complete conformity with the requirements of Appendix K and that certain modifications described in the above-mentioned documents were required in order to achieve such conformity. The Regulatory staff assessments were reviewed by the Commission's Advisory Committee on Reactor Safeguards in meetings held on October 26, 1974 and November 14, 1974.

In its Report to the Chairman of the AEC, dated November 20, 1974, the Advisory Committee has concluded that "the four light-water reactor vendors have developed Evaluation Models which, with additional modifications required by the Regulatory staff, will conform to Appendix K to Part 50".

Since the licensee's evaluation of ECCS cooling performance is based upon the vendor's evaluation model, the licensee's evaluation is similarly deficient. The Regulatory staff has assessed the effect of the changes required in the evaluation model upon the results of the evaluation of ECCS performance for the Monticello facility submitted on August 20, 1974. This is described in the Safety Evaluation Report of the Monticello Nuclear Generating Plant, Docket No. 50-263, dated December 27, 1974. On the basis of its review, the Regulatory staff has determined that changes in operating conditions for the plant, in addition to those proposed in the licensee's submittals of December 11, and August 20, 1974, are necessary to assure that the criteria set forth in §§ 50.46(b) are satisfied. These additional changes, which are set forth in Appendix A to the Safety Evaluation Report, consist of modifications to the limit governing maximum average planar linear heat generation rate. These further restrictions will assure that ECCS cooling performance will conform to all of 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.

These restrictions were established on the basis of studies of the effect of model changes on the previously submitted evaluations. The Regulatory staff believes that these restrictions should be

verified by a re-analysis based upon an approved evaluation model, in conformity with 10 CFR §§ 50.46 and Appendix K. During the interim, before an evaluation in conformity with the requirements of 10 CFR §§ 50.46 can be submitted and evaluated, the Regulatory staff has concluded that continued conformance to the requirements of the Commission's Interim Acceptance Criteria*, and conformance to the restrictions contained in the licensee's August 20 and December 11, 1974 submittal together with the additional limitations set forth in Appendix A of the Staff Safety Evaluation Report dated December 27, 1974, will provide reasonable assurance that the public health and safety will not be endangered. These additional restrictions are set forth as Appendix A to this Order.

III.

In view of the foregoing and, in accordance with the provisions of §§ 50.[illegible](a)(2)(v), the Acting Director of Licensing has found that the evaluation of ECCS cooling performance submitted by the licensee is not consistent with the requirements of 10 CFR § 50.46(a)(1) and, therefore, that the further restrictions of facility operation, set forth in Appendix A to this Order, are required to protect the public health and safety. The Acting Director of Licensing has also found that the public health, safety, and interest require that the following Order be made effective immediately. Pursuant to the Atomic Energy Act of 1954, as amended, the Commission's regulations in 10 CFR §§ 2.204, 50.46, and 50.54

*See next page

IT IS ORDERED THAT:

1. As soon as practicable, but in no event later than six months from the date of publication of this order in the FEDERAL REGISTER, or prior to any license amendment authorizing any core reloading, whichever occurs first, the licensee shall submit a re-evaluation of ECCS cooling performance calculated in accordance with an acceptable evaluation model which conforms with the provisions of 10 CFR Part 50, § 50.46. Such evaluation may be based upon the vendor's evaluation model as modified in accordance with the changes described in the Staff Safety Evaluation Report of the Monticello Nuclear Generating Plant, dated December 27, 1974. The evaluation shall be accompanied by such proposed changes in Technical Specifications or license amendments as may be necessary to implement the evaluation results.

2. Effective immediately reactor operation shall continue only within the limits of:

(a) The requirements of the Interim Acceptance Criteria, the Technical Specifications, and license conditions imposed by the Commission in accordance with the requirements of the Interim Acceptance Criteria, and

(b) The limits of the proposed Technical Specifications submitted by the licensee on August 20 and December 11, 1974, as modified by the further restrictions set forth in Appendix A, attached hereto.

---

*Interim Acceptance Criteria for Emergency Core Cooling Systems for Light Water Power Reactors, 36 F.R. 12247, June 29, 1971, as amended 36 F.R. 24082, December 18, 1971

The license shall conform operation to the foregoing limitations until such time as the proposed Technical Specifications required to be submitted in accordance with paragraph 1 above are approved or modified and issued by the Commission. Subsequent notice and opportunity for hearing will be provided in connection with such action.

IV.

Within thirty (30) days from the date of publication of this Order in the FEDERAL REGISTER the licensee may file a request for a hearing with respect to this Order. Within the same thirty (30) day period any other person whose interest may be affected may file a request for a hearing with respect to this Order in accordance with the provisions of 10 CFR §§ 2.714 of the Commission's Rules of Practice. If a request for a hearing is filed within the time prescribed herein, the Commission will issue a notice of hearing or an appropriate order.

For further details with respect to this action, see (1) the licensee's submittals dated August 20, 1974 and December 11, 1974 and vendor's topical reports referenced in the licensee's submittal, which describe the vendor's evaluation model, (2) the Status Report by the Directorate of Licensing in the Matter of General Electric ECCS Evaluation Model Conformance to 10 CFR 50, Appendix K, (3) Supplement 1 thereto dated November 13, 1974,

(4) the Safety Evaluation Report dated December 27, 1974, and (5) Report of the Advisory Committee on Reactor Safeguards dated November 20, 1974. All of these items are available at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and at the Environmental Conservation Library, Minneapolis Public Library, 300 Nicollet Mall, Minneapolis, Minnesota 55401. A single copy each of items (2) through (5) may be obtained upon request addressed to the U. S. Atomic Energy Commission, Washington, D. C. 20545, Attention: Deputy Director for Reactor Projects, Directorate of Licensing, Regulation.

Dated At Bethesda, Maryland, this DEC 2 7 1974

FOR THE ATOMIC ENERGY COMMISSION

Edson G. Case, Acting Director
Directorate of Licensing

NOTICE OF AVAILABILITY

Copies of Appendix A to Order for Modification of License, dated December 27, 1974, are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., or may be obtained upon request addressed to the Deputy Director for Reactor Projects, Directorate of Licensing, U. S. Atomic Energy Commission, Washington, D. C. 20545.

APPENDIX A

MONTICELLO OPERATION RESTRICTIONS

The proposed Technical Specification limiting conditions of operation present two limitations on power distribution related to the LOCA analysis. These are the limiting assembly maximum average planar linear heat generation rate, MAPLHGR, and the minimum critical power ratio limit related to boiling crisis, MCPR. The MCPR value used in the LOCA analysis was 1.19. The limiting value of MAPLHGR included with the proposed Technical Specifications submitted on August 5, 1974, have been revised to account for the General Electric ECCS Evaluation Model deficiencies which have been discussed in this report. The revised values are given in Figures B.3.11-1A and B.3.11-1B. Operation shall conform to these values. Operation shall also conform to a MCPR value of 1.20 as proposed by the licensee.

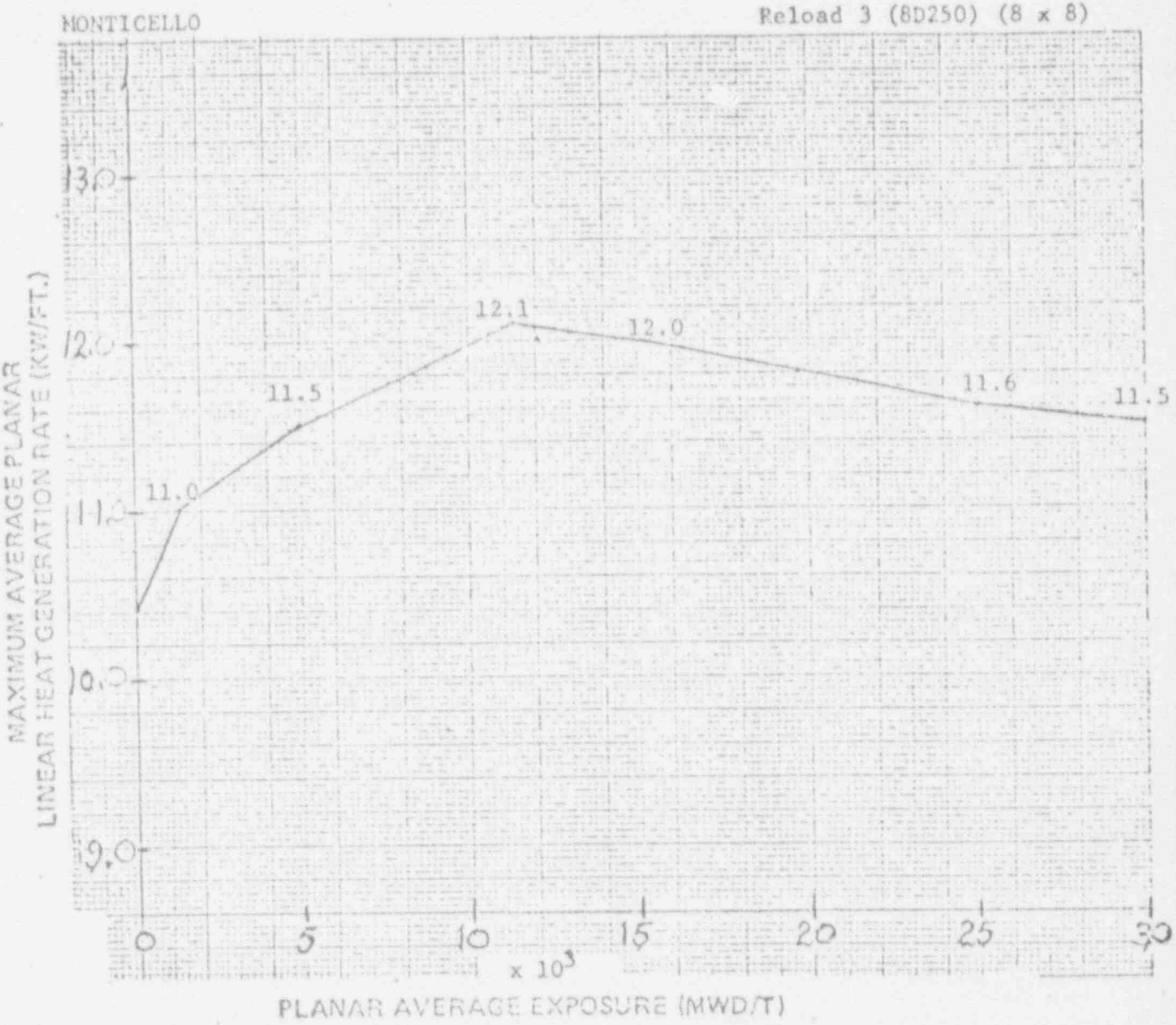

FIGURE A-1 MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE VERSUS PLANAR AVERAGE EXPOSURE

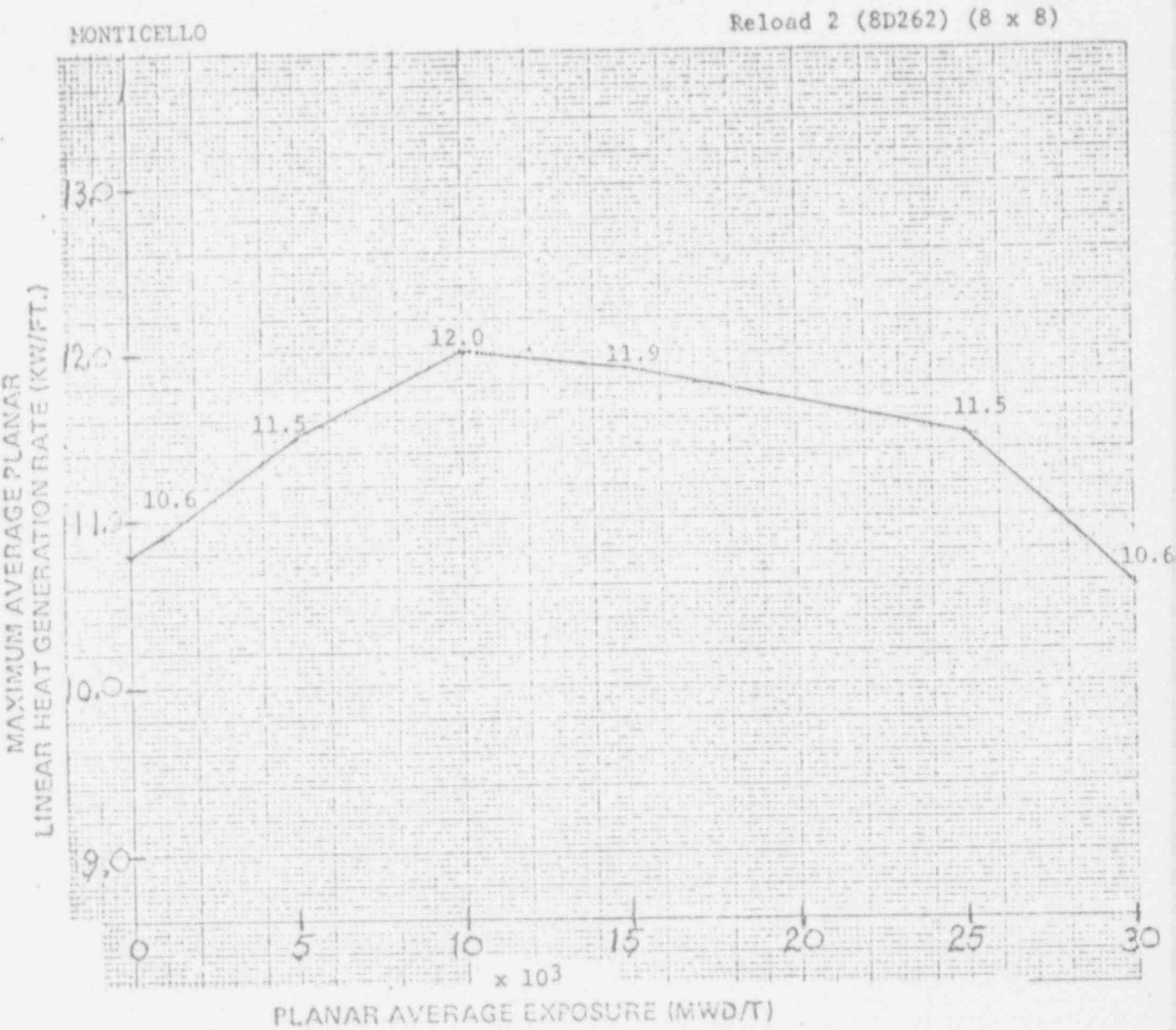

FIGURE A-2 MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE VERSUS PLANAR AVERAGE EXPOSURE

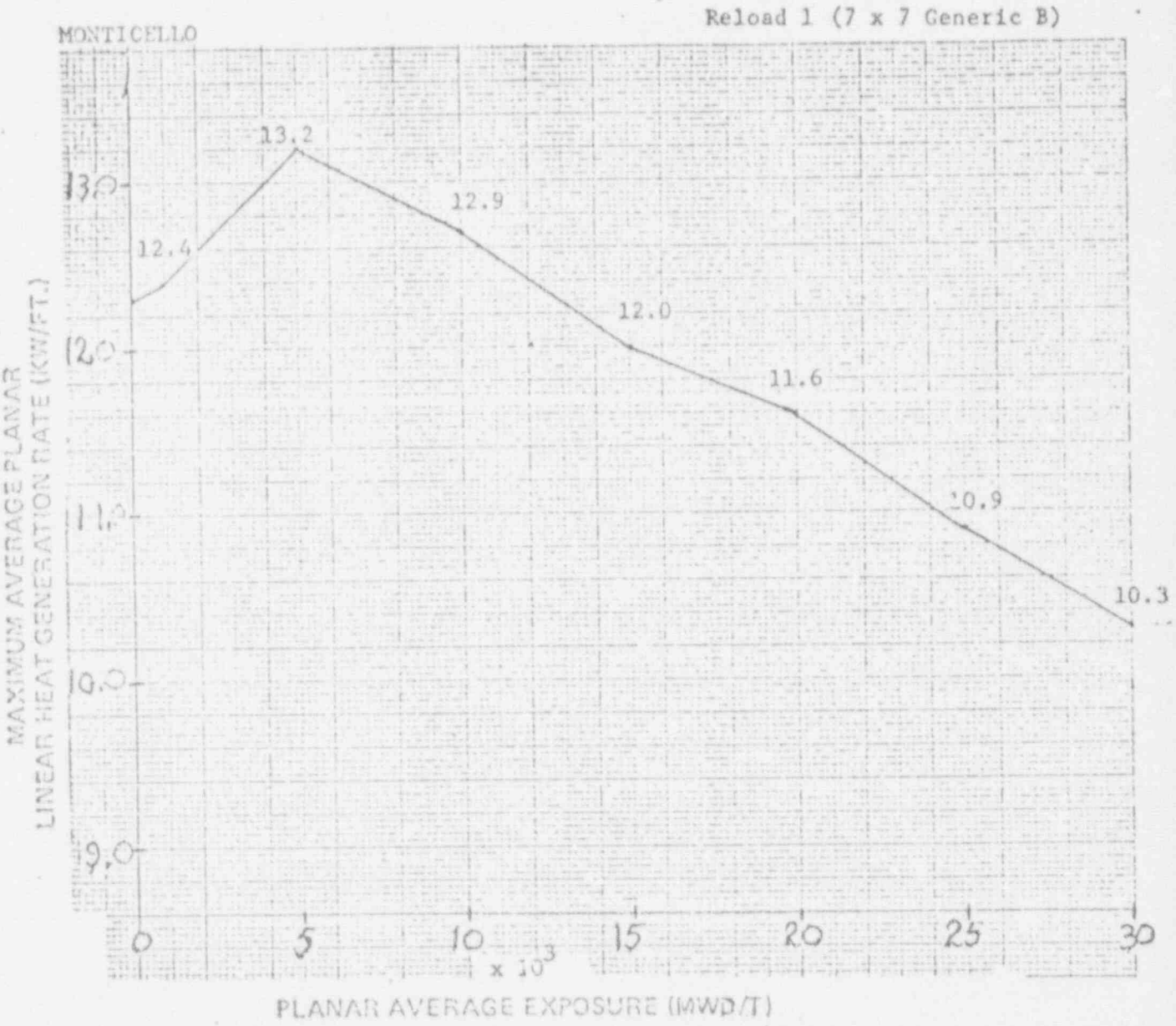

FIGURE A-3 MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE VERSUS PLANAR AVERAGE EXPOSURE

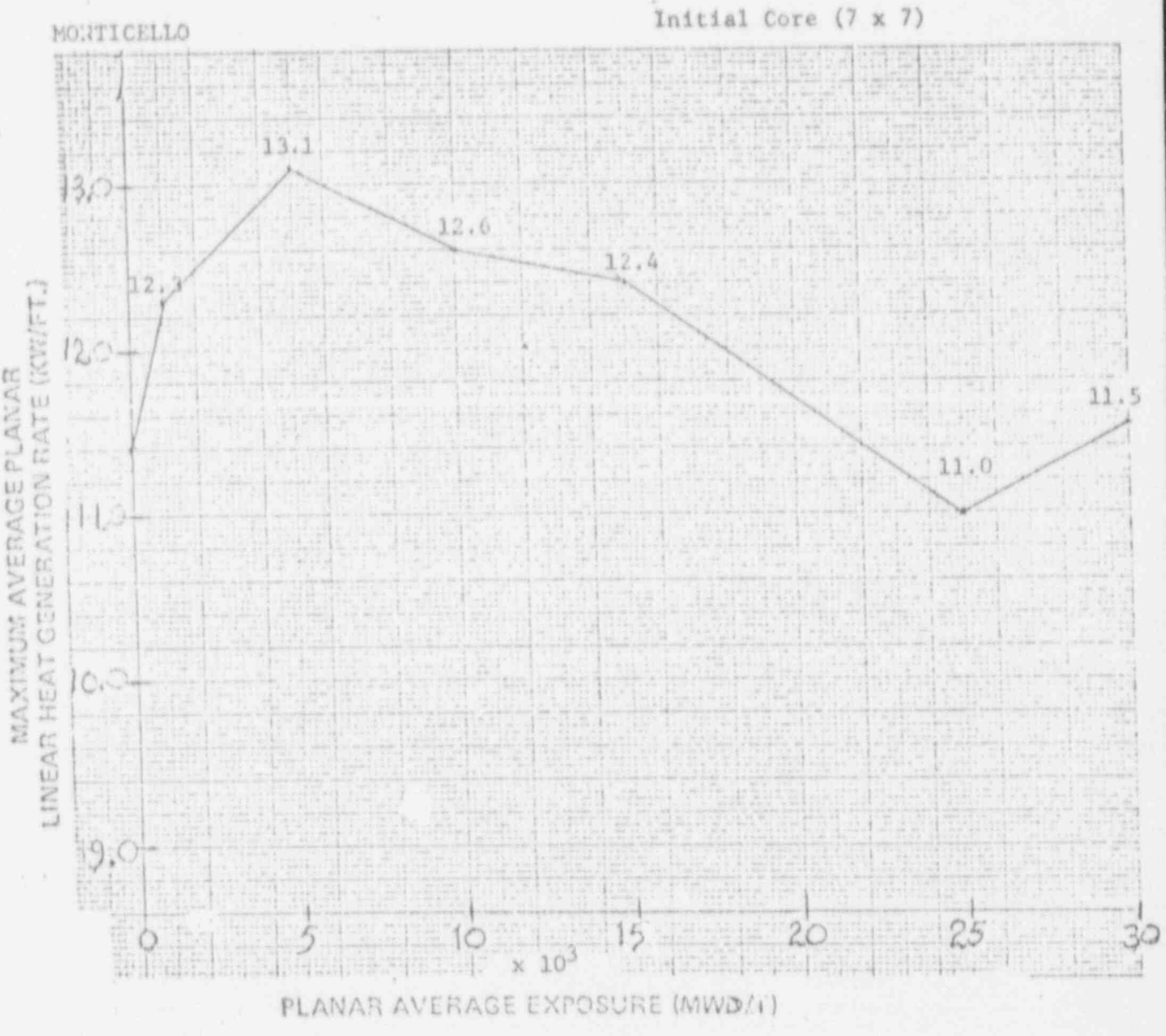

FIGURE A-4 MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE VERSUS PLANAR AVERAGE EXPOSURE