

UNITED STATES ATOMIC ENERGY COMMISSION

NORTHERN STATES POWER COMPANY

Monticello Nuclear Generating Plant

Docket No. 50-263

REQUEST FOR AUTHORIZATION OF
A CHANGE IN TECHNICAL SPECIFICATIONS
OF APPENDIX A

PROVISIONAL OPERATING LICENSE NO. DPR-22

(Change Request Dated February 28, 1974)

Northern States Power Company, a Minnesota corporation, requests authorization for changes to the Technical Specifications as shown on the attachments labeled Exhibit A and Exhibit B. Exhibit A describes the proposed changes along with reasons for change. Exhibit B is a set of Technical Specification pages incorporating the proposed changes.

This request contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By

Wade Larkin

Wade Larkin

Group Vice President - Power Supply

On this 28 day of February, 1974, before me a notary public in and for said County, personally appeared Wade Larkin, Group Vice President - Power Supply, and being first duly sworn acknowledged that he is authorized to execute this document in behalf of Northern States Power Company, that he knows the contents thereof and that to the best of his knowledge, information and belief, the statements made in it are true and that it is not interposed for delay.

John J. Smith
John J. Smith

JOHN J. SMITH
Notary Public, Hennepin County, Minnesota
My Commission Expires March 3, 1976

EXHIBIT A

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263

CHANGE REQUEST DATED FEBRUARY 28, 1974

PROPOSED CHANGES TO THE TECHNICAL SPECIFICATIONS
APPENDIX A OF PROVISIONAL OPERATING
LICENSE NO. DPR-22

Pursuant to 10CFR50.59, the holders of the above-mentioned license hereby propose the following changes to Appendix A, Technical Specifications.

1. PROPOSED CHANGE

On page 108A, TS 3.5.J, change "...of 11.5 kw/ft." to read
"...shown in Figure 3.5.1."

REASON FOR CHANGE

Reference 1 provides guidance on calculational methods approved by the AEC Staff for determining the effects of fuel densification. Reference 2 discussed the application of these methods. In applying these methods, the constant value for MAPLHGR becomes exposure-dependent as shown in Figure 3.5.1.

2. PROPOSED CHANGE

On page 108B, TS 3.5.K, expand the lines:
"LHGR_d = Design LHGR = 17.5 kw/ft
($\Delta P/P$) max = Maximum power spiking penalty = 0.036"
to read as follows:
"LHGR_d = Design LHGR
= 17.5 kw/ft for 7x7 fuel
= 13.4 kw/ft for 8x8 fuel
($\Delta P/P$) max = Maximum power spiking penalty
= 0.033 for 7x7 fuel
= 0.024 for 8x8 fuel"

REASON FOR CHANGE

This change expands the Specification to include the design LHGR of 8x8 fuel as discussed in Reference 3. The calculated power spike penalty for 8x8 fuel is discussed in Reference 4 and the recalculated penalty for 7x7 fuel is discussed in Reference 5. These references show the power spike penalty as a function of length for various pellet densities. The following is a tabulation of data pertinent to Monticello fuel types:

EXHIBIT A

- 2 -

<u>Fuel Type</u>	<u>% of T.D</u>	<u>($\Delta P/P$) max</u>
Initial Core (7x7)	95.04	0.033
Reload-1 (7x7)	94.94	0.033
Reload-2 (8x8)	95.44	0.024

3. PROPOSED CHANGE

Insert a new page, 108C, designated Figure 3.5.1.

REASON FOR CHANGE

This figure is the result of the recalculation described in Item 1. above. The curves are a composite of two limiting conditions; LHGR for low exposures and peak cladding temperature during LOCA for higher exposures. Figures A-1 through A-3 of this exhibit are included to provide additional information in this regard. The alpha curve shows the MAPLHGR based on design LHGR limitations only. The omega curve is the composite limitation; it becomes more restrictive than the alpha curve when the calculated LOCA peak cladding temperature reaches the current limit of 2300°F.

4. PROPOSED CHANGES

On page 113A, TS Bases 3.5.J, replace the third paragraph with the words, "The maximum average planar LHGR curves shown in Figure 3.5.1 were calculated for the various Monticello fuel types in the manner discussed in Section 4.3 of General Electric topical report, "GEGAP-III: A Model for the Prediction of Pellet-Cladding Thermal Conductance in BWR Fuel Rods", NEDO-20181, Revision 1, November 1973. These curves show the composite limitation based on the design LHGR of the fuel and the peak cladding temperature in the event of a LOCA. Calculations are based on the AEC "Modified GE Model for Fuel Densification" attached to a December 5, 1973 letter from D J Skovholt (USAEC) to L O Mayer (NSP)."

On page 113A, TS Bases 3.5.J, fourth paragraph, ninth line, replace the words "...on the order of only..." with "...less than..."

On page 113A, TS Bases 3.5.J, last line, change the words "Changes in gap size..." to "Changes in radial gap size..."

On page 113B, TS Bases 3.5.J, replace the last three sentences of the first paragraph with the words, "As discussed in NEDO-20181, that the pellet densified from its measured value to 96.5% of theoretical density."

EXHIBIT A

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CURVE α - MAXIMUM ALLOWABLE TO STAY BELOW
CURRENT TECHNICAL SPECIFICATION
LIMIT FOR LHGR

CURVE Ω - MAXIMUM ALLOWABLE WITH GEGAP III
AND AEC MODIFICATIONS

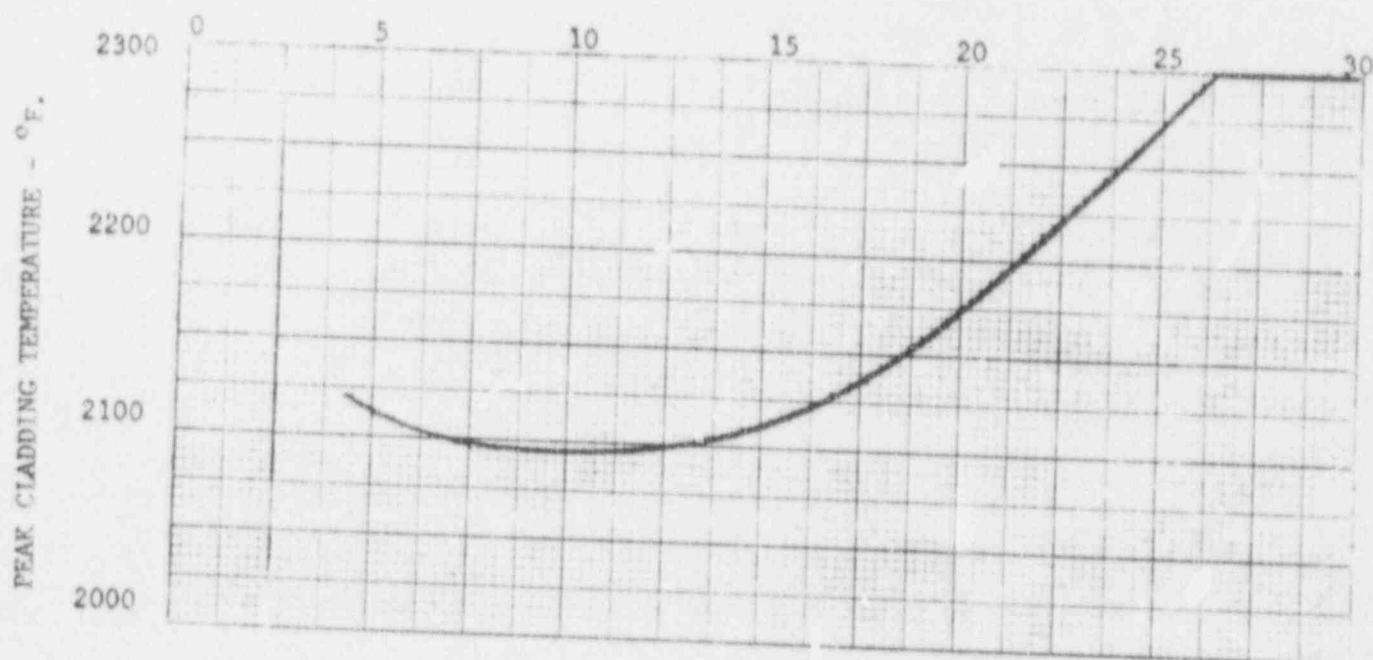
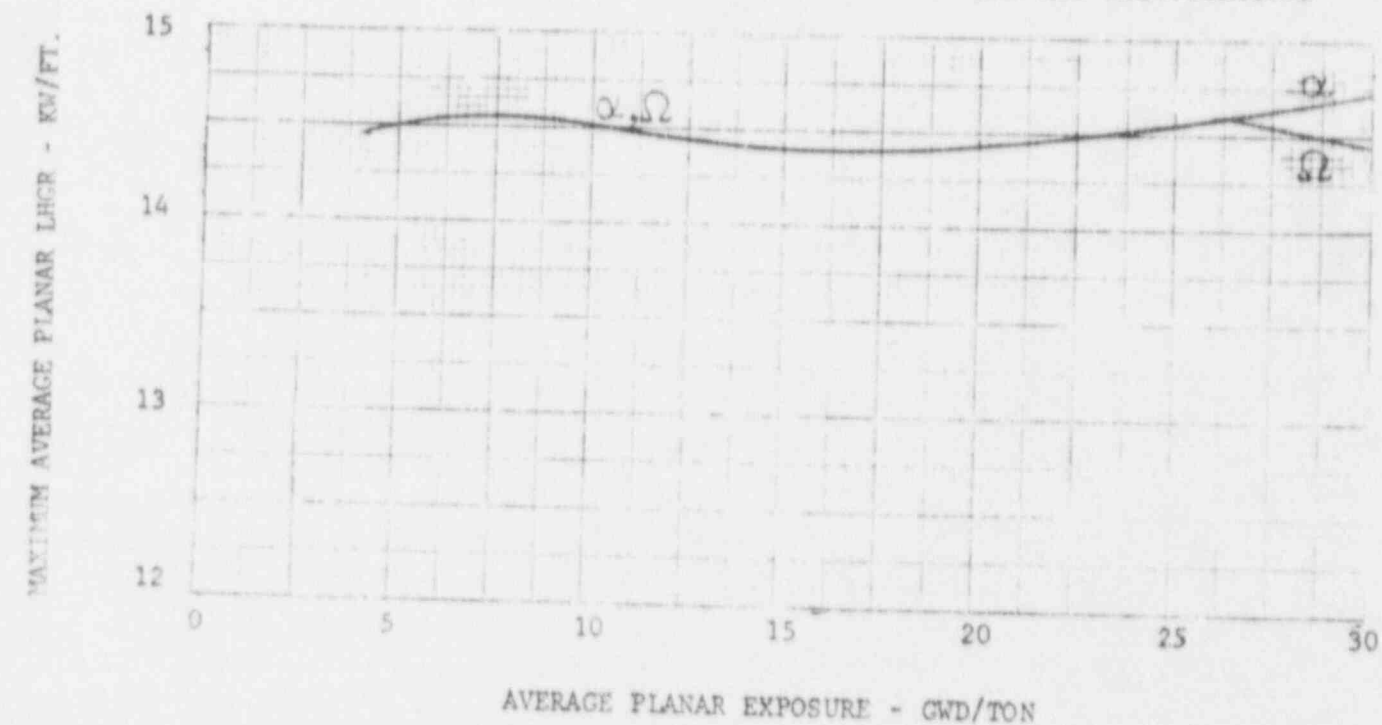


Figure A-1, Monticello Initial Core Fuel (7x7);
MAPLHGR and PCT vs Exposure

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CURVE α - MAXIMUM ALLOWABLE TO STAY BELOW
CURRENT TECHNICAL SPECIFICATION
LIMIT FOR LHGR

CURVE Ω - MAXIMUM ALLOWABLE WITH GEGAP
III AND AEC MODIFICATIONS

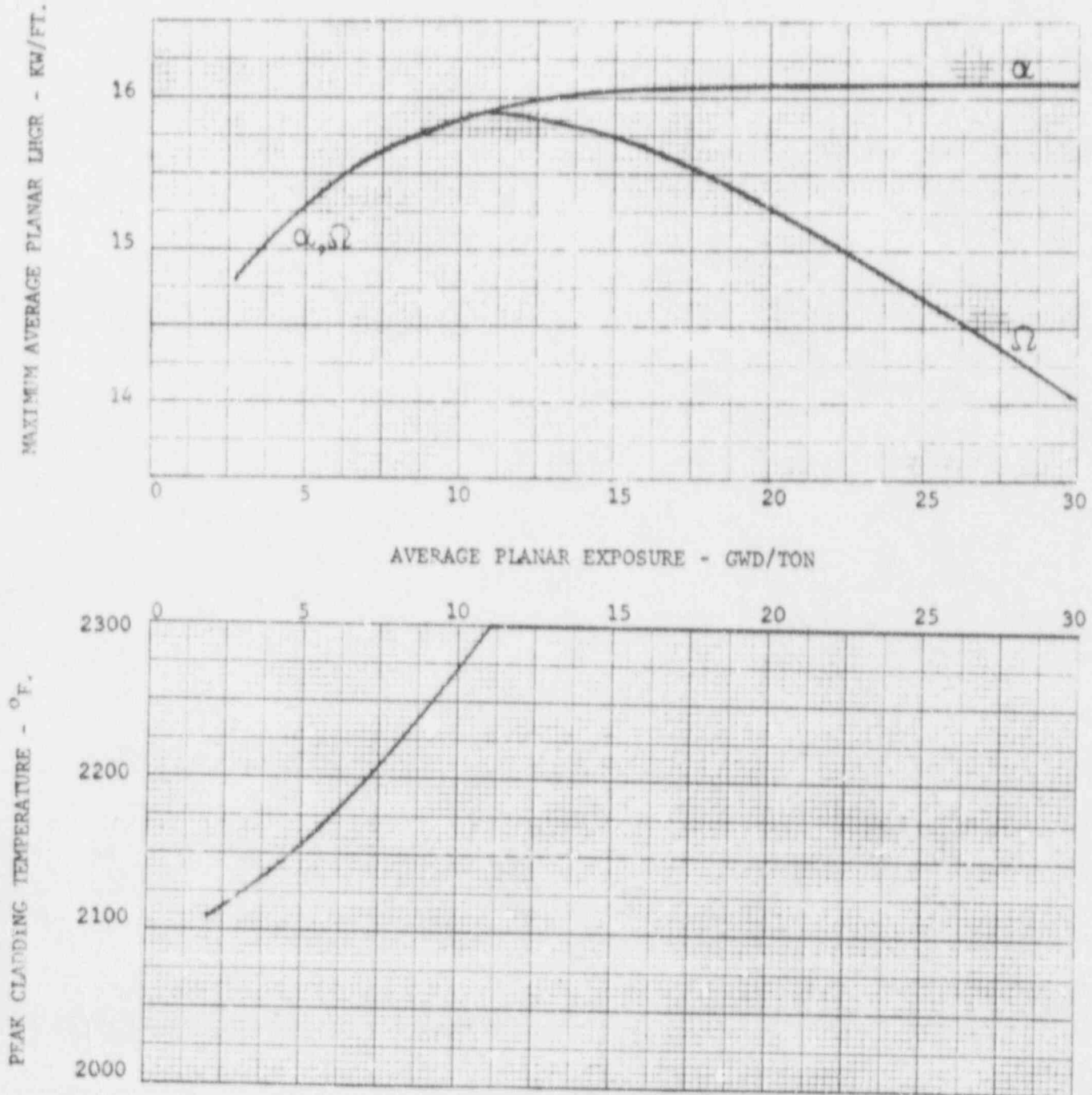


Figure A-2, Monticello Reload-1 Fuel (7x7);
MAPLHGR and PCT vs Exposure

EXHIBIT A

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CURVE α - MAXIMUM ALLOWABLE TO STAY BELOW
CURRENT TECHNICAL SPECIFICATION
LIMIT FOR LHGR

CURVE Ω - MAXIMUM ALLOWABLE WITH GEGAP III
AND AEC MODIFICATIONS

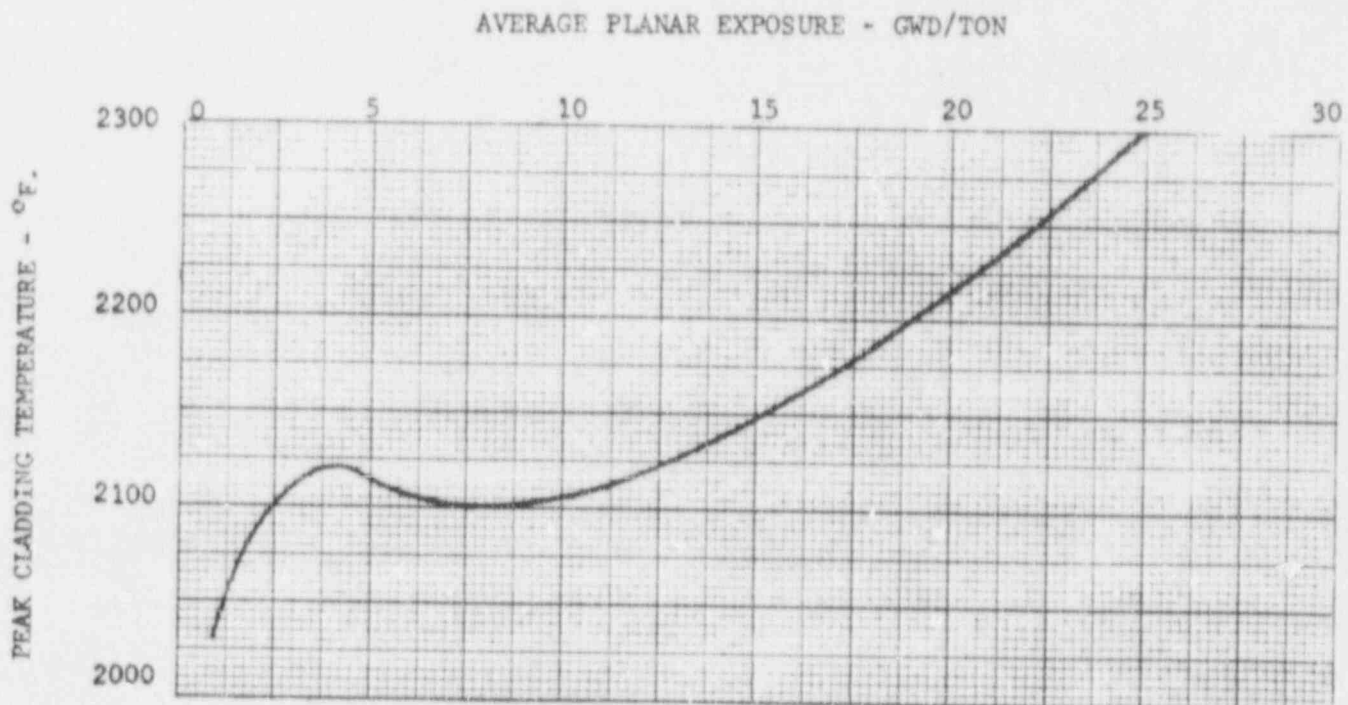
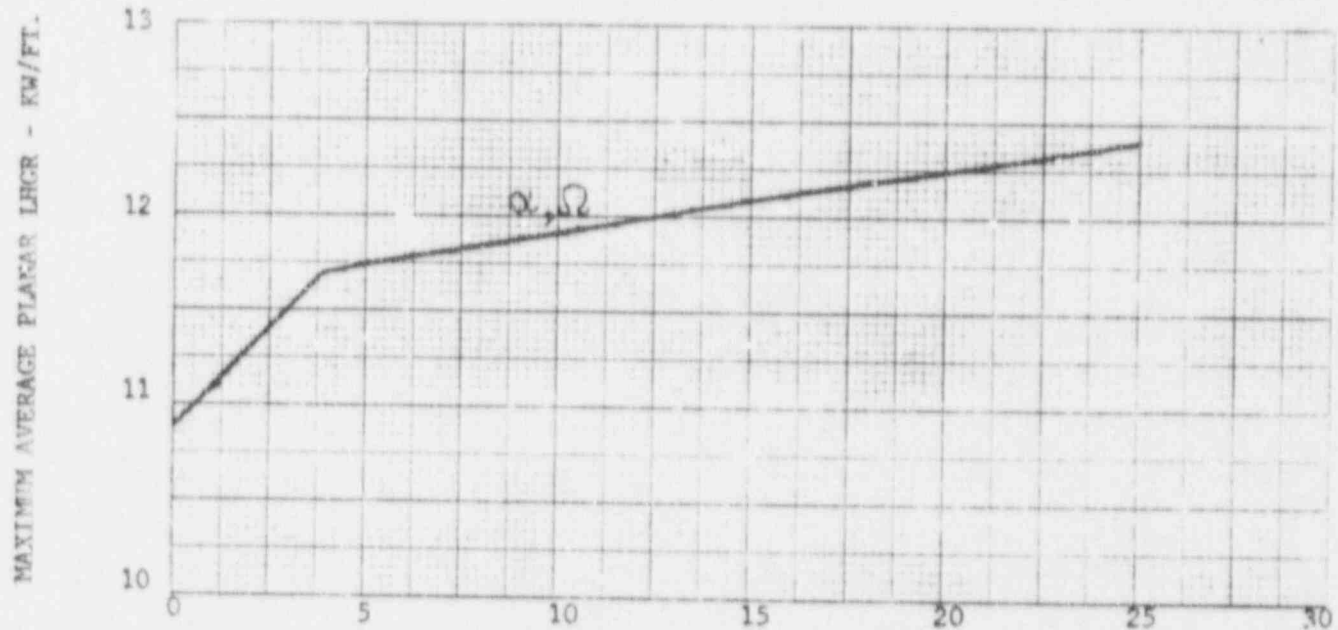


Figure A-3, Monticello Reload-2 Fuel (8x8);
MAPLHGR and PCT vs Exposure

Page 108A

Page 108B

Page 108C

Page 113A

Page 113B

EXHIBIT B

This exhibit consists of the following pages revised to incorporate the proposed changes:

Page 108A

Page 108B

Page 108C

Page 113A

Page 113B