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NOTORIZED 03/21/78.

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NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

March 21, 1978

Director of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

License Amendment Request Dated March 21, 1978

Attached are three originals and 37 conformed copies of a request for a change to the Provisional Operating License and Appendix A Technical Specifications of the Monticello Nuclear Generating Plant. This change concerns application of the partial drilled model for analyzing the retrofit fuel design scheduled to be installed in the Monticello reactor in the Fall 1978 refueling outage.

When reviewing these proposed changes, please note that some of the pages are also subject to change under our September 30, 1977 License Amendment request.

L. O. Mayer

L O Mayer, PE
Manager of Nuclear Support Services

LOM/MHV/deh

cc: J G Keppler
G Charnoff

Attachments

A001/S
3/37

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT

Docket No. 50- 263

REQUEST FOR AMENDMENT TO
OPERATING LICENSE NO. DPR-22

(License Amendment Request Dated March 21, 1978)

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 the 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 L. J. Wachter
L J Wachter
Vice President, Power Production &
System Operation

On this 21st day of March, 1978, before me a notary public in and for said County, personally appeared L J Wachter, Vice President, Power Production & System Operation, and first being 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.

Denise E. Halvorson

DENISE E. HALVORSON
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My Commission Expires Oct. 10, 1981

EXHIBIT A

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

LICENSE AMENDMENT REQUEST
DATED MARCH 21, 1978

PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS

Pursuant to 10CFR50, the holders of Provisional Operating License DPR-22 hereby propose the following change to the Appendix A Technical Specifications.

PROPOSED CHANGES

Page vii. Modify the title of Figure 3.11.1-B and add a new Figure 3.11.1-Ba as shown in Exhibit B.

Pages 189H, 189I, 189Ia, 189J and 189K. Page 189Ia is a newly created page. All pages listed here are intended for the documentation of MAPLHGR limits as determined using the partial drill ECCS model discussed in the Safety Evaluation. The calculational results will be provided at a later date.

Page 190. In Specification 5.2.A delete the words "of 49 or 63 fuel rods each".

REASON FOR CHANGES

In the Fall, 1978 refueling outage, two fuel types not currently in use at Monticello are scheduled to be loaded into the reactor.

The new fuel types have pre-drilled lower tie plates to provide controlled fuel assembly bypass flow during normal operation. These holes improve the reflood time in the postulated loss of coolant accident, resulting in new MAPLHGR limits for all fuel types in the reactor.

The Technical Specifications presently include a MAPLHGR limit for 7D230 fuel, a fuel type that is not expected to be used at Monticello in the future. MAPLHGR limits are therefore eliminated for 7D230 fuel. That page is replaced with limits for a new fuel type, 8DR 264. Limits for the other new fuel type, 8DR 282, are on a newly created page.

The two new fuel types are of the same 8x8 array as existing fuel, but with two water rods rather than one. The second non-fueled rod within the assembly improves the power distribution and therefore the overall performance of the assembly. The proposed change broadens the description of reactor design features to encompass the new fuel type.

SAFETY EVALUATION

The 8DR 264 and 8DR 282 are improved fuel element designs developed as the current General Electric Company product line fuel. The safety evaluation is topical report NEDO-24011, "Licensing Topical Report, General Electric Boiling Water Reactor, Generic Reload Fuel Application", dated May 1977. This document describes the fuel and its performance. We understand that it has been under review by the Nuclear Regulatory Commission for some time. We request that the review be expanded to encompass the application of this retrofit fuel in the Monticello reactor.

The new MAPLHGR limits will be based on the partial drilled ECCS model which has already been accepted for BWR 4 plants. The safety evaluation for application of the partial drilled model to BWR 3 plants such as Monticello, has already been submitted along with a January 17, 1978 letter from Mr R E Engel of General Electric to Mr D G Eisenhut of the Nuclear Regulatory Commission. It is our understanding that your review of this license amendment request can proceed on the basis of the described model, even though the calculated results may not be available for some time. Those results will be provided in writing as they become available.

The design features section of the technical specifications presently states the number of fuel assemblies in the reactor core and the number of fuel rods per assembly. The proposed change will eliminate reference to the number of fuel rods per assembly which is consistent with technical specifications of other plants. The significant factor in describing the reactor design is the number of fuel assemblies in the reactor core; the number of fuel pins in an assembly is one of a number of fuel design parameters having only secondary importance. Such details can be found by referencing the specific description of each fuel assembly type which is identified in Section 3.11 when defining the MAPLHGR limit per fuel type.

EXHIBIT B

LICENSE AMENDMENT REQUEST
DATED MARCH 21, 1978

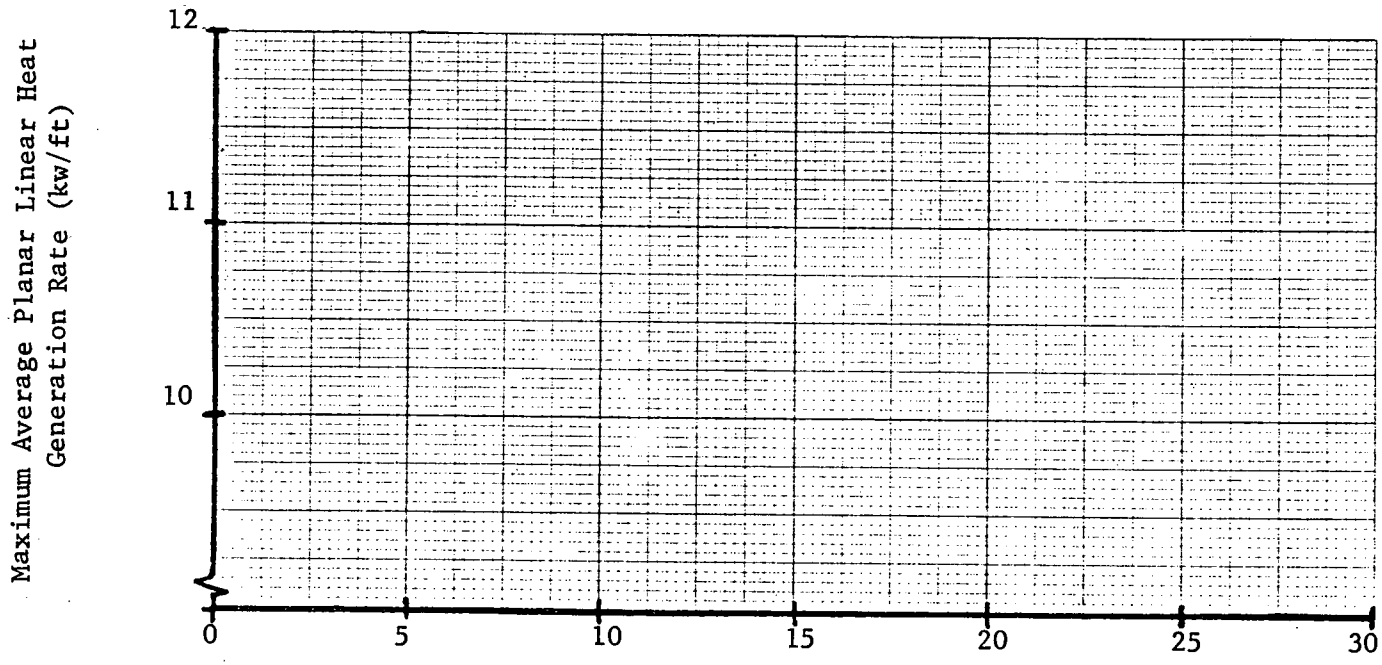
This exhibit consists of the following pages revised to incorporate all of the proposed Technical Specification changes:

vii
189H
189I
189Ia (new page)
189J
189K
190

LIST OF FIGURES

Figure 3.11.1-A

Maximum Average Planar Linear
Heat Generation Rate Versus
Planar Average Exposure
Monticello 8D219 Fuel



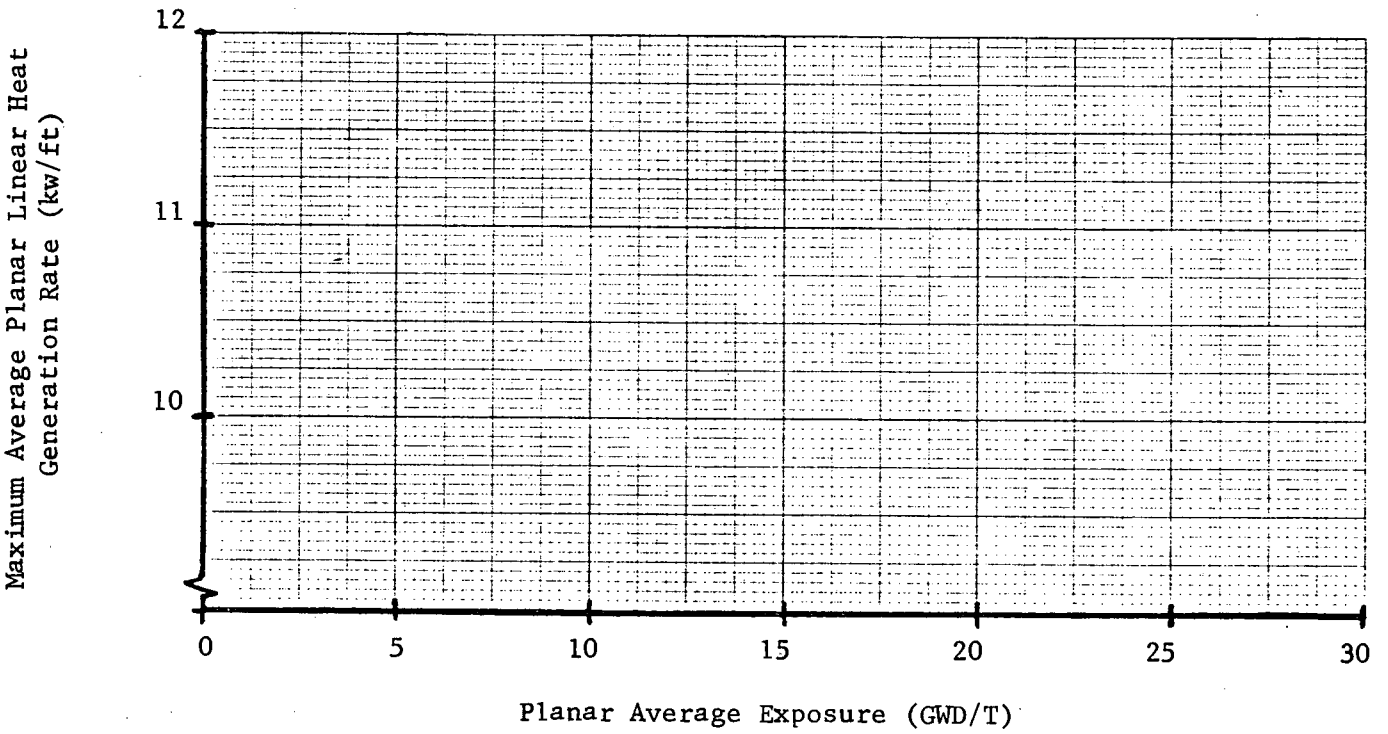
Tabulation of
Plotted Data

Exposure	MAPLHGR

Calculated Results to be provided at a later date.

Figure 3.11.1-B

Maximum Average Planar Linear
Heat Generation Rate Versus
Planar Average Exposure
Monticello 8DR264 Fuel



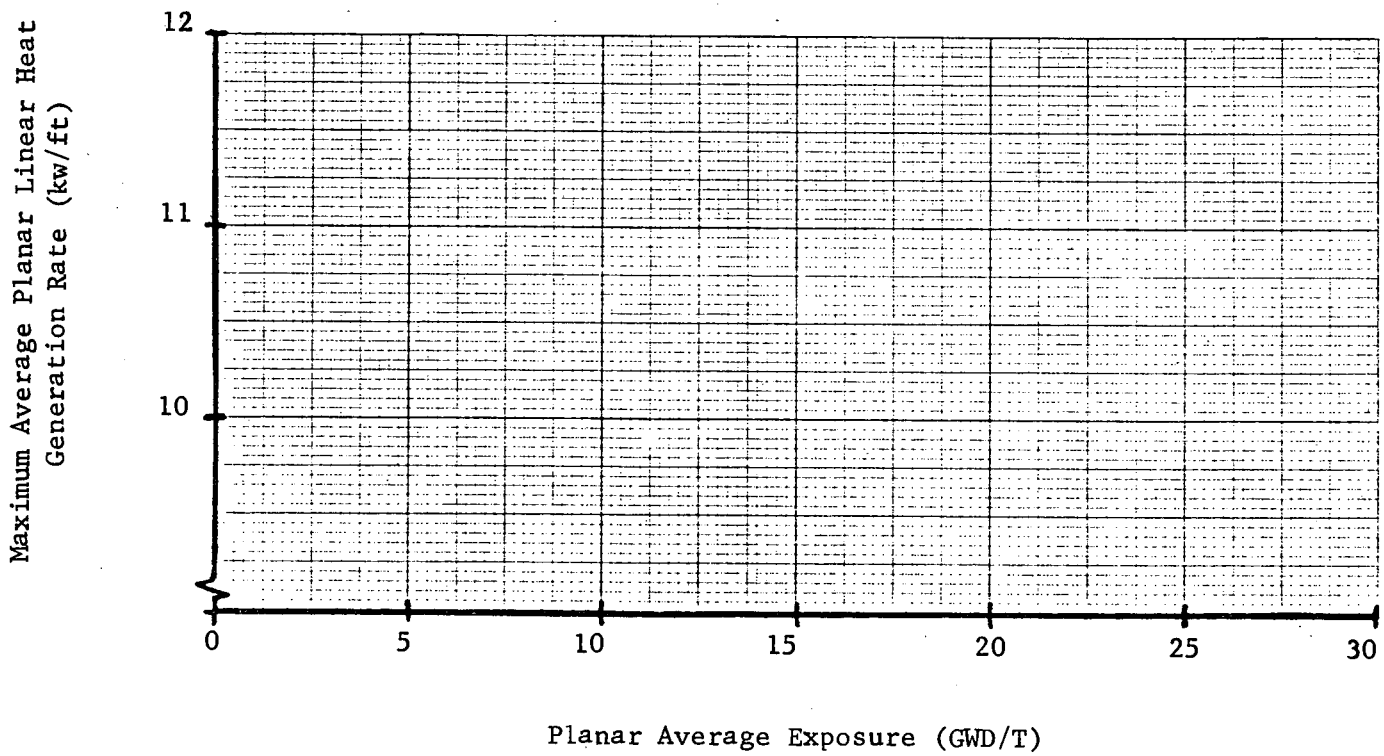
Tabulation of
Plotted Data

Exposure	MAPLHGR

Calculated Results to be provided at a later date

Figure 3.11.1-Ba

Maximum Average Planar Linear
Heat Generation Rate Versus
Planar Average Exposure
Monticello 8DR282 Fuel



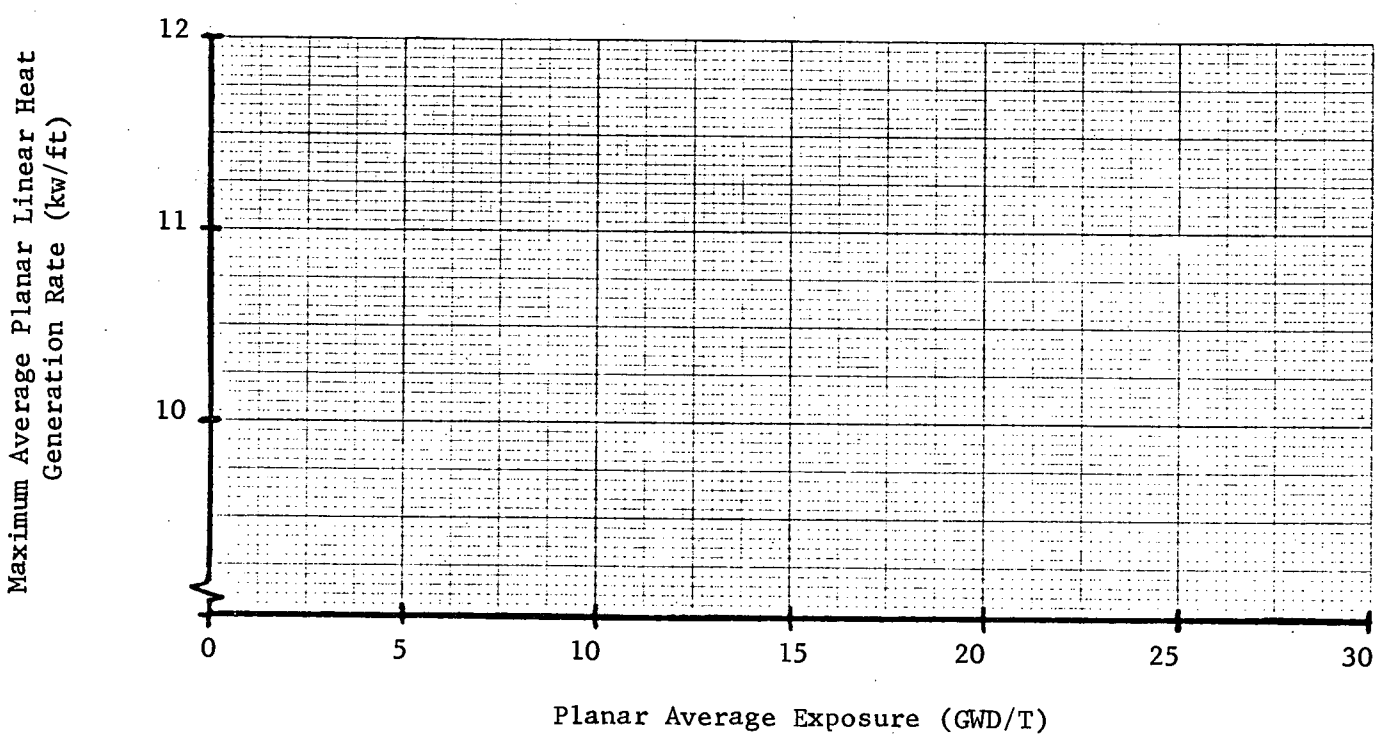
Tabulation of
Plotted Data

Exposure	MAPLHGR

Calculated Results to be provided at a later date

Figure 3.11.1-C

Maximum Average Planar Linear
Heat Generation Rate Versus
Planar Average Exposure
Monticello 8D262 Fuel



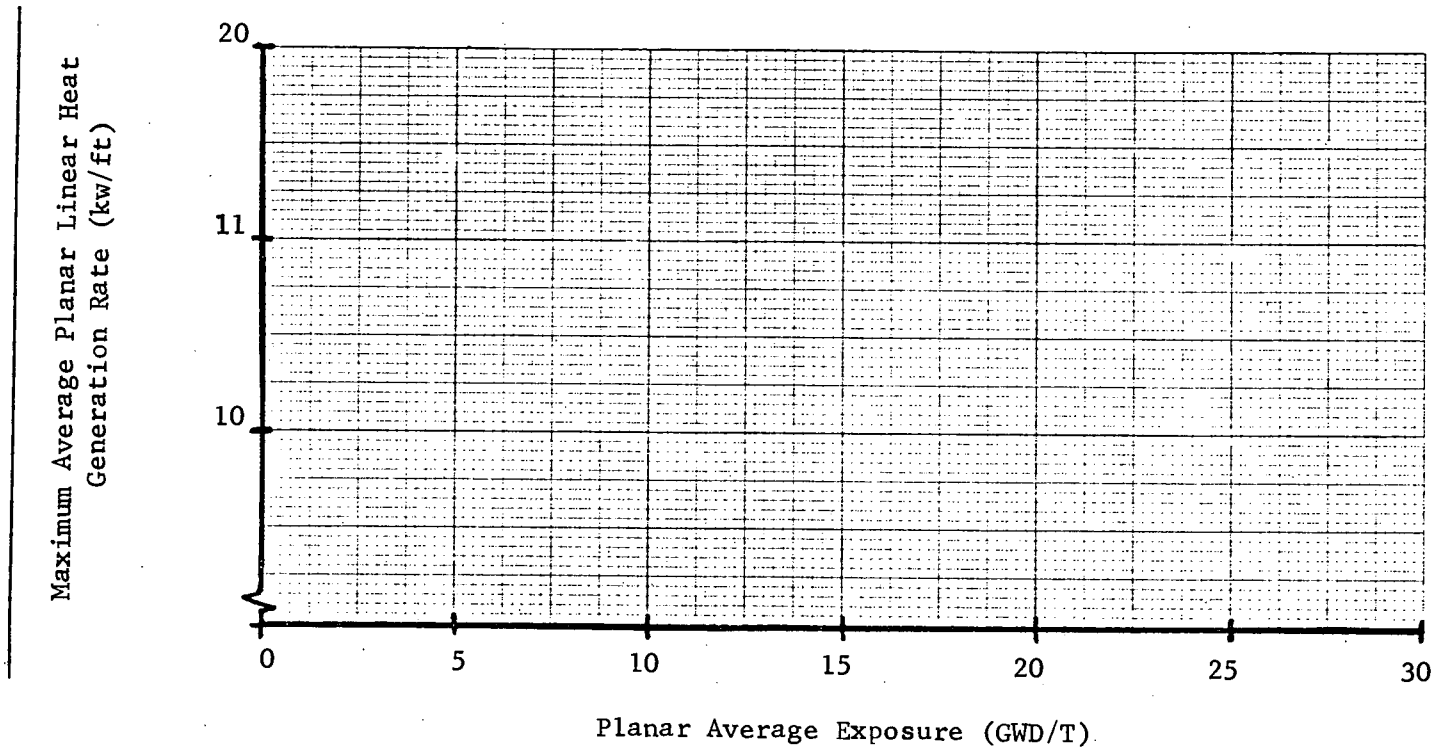
Tabulation of
Plotted Data

Exposure	MAPLHGR

Calculated Results to be provided at a later date

Figure 3.11.1-D

Maximum Average Planar Linear
Heat Generation Rate Versus
Planar Average Exposure
Monticello 8D250



Tabulation of
Plotted Data

Exposure	MAPLHGR

Calculated results to be provided at a later date

5.0 DESIGN FEATURES

5.1 Site

A. The reactor center line is located at approximately 850,810 feet North and 2,038,920 feet East as determined on the Minnesota State Grid, South Zone. The nearest site boundary is approximately 1630 feet S 30° W of the reactor center line and the exclusion area is defined by the minimum fenced area shown in FSAR Figure 2.2.2a. Due to the prevailing wind pattern, the direction of maximum integrated dosage is SSE. The southern property line follows the northern boundary of the right-of-way for the Burlington Northern Railway.

5.2 Reactor

A. The reactor core shall consist of not more than 484 fuel assemblies.

B. The reactor core shall contain 121 cruciform-shaped control rods. The control rod material shall be boron carbide powder (B_4C) compacted to approximately 70% of theoretical density.

5.3 Reactor Vessel

A. The pressure vessel shall be designed for a pressure of 1250 psig and a temperature of 575°F. The coolant recirculation system shall be designed for a pressure of 1148 psig on suction side of pump and 1248 psig at pump discharge. Both the pressure vessel and recirculation system shall be designed in accordance with the ASME Boiler and Pressure Vessel Code Sections III and IX.

5.4 Containment

A. The primary containment shall be of the pressure suppression type having a drywell and an absorption chamber constructed of steel. The drywell shall have a volume of approximately 134,200 ft^3 and is designed to conform to ASME Boiler and Pressure Vessel Code Section III Class B for an internal pressure of 56 psig at 281°F and an external pressure of 2 psig at 281°F. The absorption chamber shall have a total volume of approximately 176,250 ft^3.