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VMoore, L:BWR
VStello, L:RS

Docket No. 50-271

JAN 4 1974

Vermont Yankee Nuclear Power Corporation
ATTN: Mr. Albert A. Cree, President
77 Grove Street
Rutland, Vermont 05701

Change No. 14
License No. DPR-28

Gentlemen:

Your letter dated December 13, 1973, proposed changes to the Technical Specifications of Facility License No. DPR-28 for the Vermont Yankee Nuclear Power Station that would increase the maximum average planar linear heat generation rate (MAPLHGR). These changes in the MAPLHGR are the result of changes in the fuel densification model by the General Electric Company as reported in NEDO-20181, "GEGAP III A Model for Prediction of Pellet-Clad Thermal Conductance in BWR Fuel Rods", dated November 1973, and its supplement NEDC-20181 Supplement 1 (Proprietary) dated November 1973. Modifications to the proposed model were made by the Regulatory staff and transmitted by our letter dated December 5, 1973, to you.

The changes in the fuel densification model provide for an exposure dependent gap conductance and time-dependent fuel densification. The Regulatory staff evaluation of these changes is reported in "Supplement 1 to the Technical Report on Densification of General Electric Reactor Fuels", dated December 14, 1973, and our Safety Evaluation dated December 14, 1973, for the Vermont Yankee Nuclear Power Station which were provided to you by our letter of December 21, 1973.

Pursuant to an Order dated January 4, 1974, of the Atomic Safety and Licensing Board in the matter of PETITION FOR DERATING OF CERTAIN BOILING WATER REACTORS, the Director of Regulation, in accordance with Section 50.59 of 10 CFR Part 50, has issued Change No. 14 to the Technical Specifications of Facility License No. DPR-28. This change is effective immediately.

Sincerely,

Original signed by
D. J. Skovholt

Donald J. Skovholt
Assistant Director for
Operating Reactors
Directorate of Licensing

X7403 Enclosure and cc: See next page

OFFICE	L:ORB #2	L:ORB #2	L:ORB #2	L:RS	OGC	L:OR
SURNAME	RDSilver:sjh	RMDiggs	DLZiemann	VStello		DJSkovholt
DATE	1/4/74	1/4/74	1/4/74	1/4/74	1/4/74	1/4/74

Form AEC-318 (Rev. 9-53) AECM 0240 GPO C43 16 81465-1 520-284

Enclosure:
Change No. 14

cc w/enclosure:

Mr. Lawrence E. Minnick, Vice President
Vermont Yankee Nuclear Power Corporation
Turnpike Road, Route 9
Westboro, Massachusetts 01581

John A. Ritsher, Equire
Ropes and Gray
225 Franklin Street
Boston, Massachusetts 02110

Gregor I. McGregor, Esquire
Assistant Attorney General
Department of the Attorney General
State House, Room 370
Boston, Massachusetts 02133

Richard E. Ayres, Esquire
David Schoenbrod, Esquire
National Resources Defense Council, Inc.
15 West 44th Street
New York, New York 10036

Honorable Kimberly B. Cheney
Attorney General
State of Vermont
109 State Street
Pavilion Office Building
Montpelier, Vermont 05602

John A. Calhoun
Assistant Attorney General
State of Vermont
109 State Street
Pavilion Office Building
Montpelier, Vermont 05602

Anthony Z. Roisman, Esquire
Berlin, Roisman and Kessler
1712 N Street, N. W.
Washington, D. C. 20036

Jonathon N. Brownell, Esquire
Paterson, Gibson, Noble & Brownell
26 State Street
Montpelier, Vermont 05602

Peter S. Paine, Jr., Esquire
Cleary, Gottleib, Steen & Hamilton
52 Wall Street
New York, New York 10005

J. Eric Anderson, Esquire
Fitts and Olson
16 High Street
Brattleboro, Vermont 05301

William H. Ward, Esquire
Assistant Attorney General
Office of the Attorney General
State Capitol Building
Topeka, Kansas 66612

Donald W. Stever, Jr., Esquire
Office of the Attorney General
State House Annex
Concord, New Hampshire 03301

Chairman, Vermont Public Service
Corporation
Seven School Street
Montpelier, Vermont 05602

John W. Stevens, Director
Conservation Society of Southern
Vermont
Post Office Box 256
Townshend, Vermont 05353

Brooks Memorial Library
224 Main Street
Brattleboro, Vermont 05301

cc w/enclosure and cy of VY ltr dtd
12/13/73 and AEC ltrs dtd 12/5/73, &
12/21/73
Mr. Hans L. Hamester
ATTN: Joan Sause
Office of Radiation Programs
Environmental Protection Agency
Room 647A East Tower, Waterside Mall
401 M Street, S. W.
Washington, D. C. 20460

Mr. Wallace Stickney
Environmental Protection Agency
JFK Federal Building
Boston, Massachusetts 02203

CHANGE NO. 14 TO THE TECHNICAL SPECIFICATIONS

FACILITY LICENSE NO. DPR-28

VERMONT YANKEE NUCLEAR POWER CORPORATION

DOCKET NO. 50-271

Replace pages issued with Changes Nos. 10 (dated August 24, 1973), 11 (dated October 5, 1973), and 12 (dated November 16, 1973) with the attached pages 94a, 94b, 94c, 97a, and 97b.

3.5 LIMITING CONDITIONS FOR OPERATION	4.5 SURVEILLANCE REQUIREMENTS

J. Average Planar LHGR

During steady state power operation, the average linear heat generation rate (LHGR) of all the rods in any fuel assembly, as a function of average planar exposure, at any axial location, shall not exceed the maximum average planar LHGR shown in Figure 3.5.1.

J. Average Planar LHGR

Daily during reactor power operation, the average planar LHGR shall be checked.

K. Local LHGR

During steady state power operation, the linear heat generation rate (LHGR) of any rod in any fuel assembly at any axial location shall not exceed the maximum allowable LHGR as calculated by the following equation:

$$LHGR_{max} \leq LHGR_d \left[1 - \left(\frac{\Delta P}{P}\right)_{max}\left(\frac{L}{LT}\right)\right]$$

$LHGR_d$ = Design LHGR = 18.5 KW/ft

$\Delta P/P$ max = Maximum power spiking penalty = 0.038

LT = Total core length = 12 ft.

L = Axial position above bottom of the core

K. Local LHGR

Daily during reactor power operation, the local LHGR shall be checked.

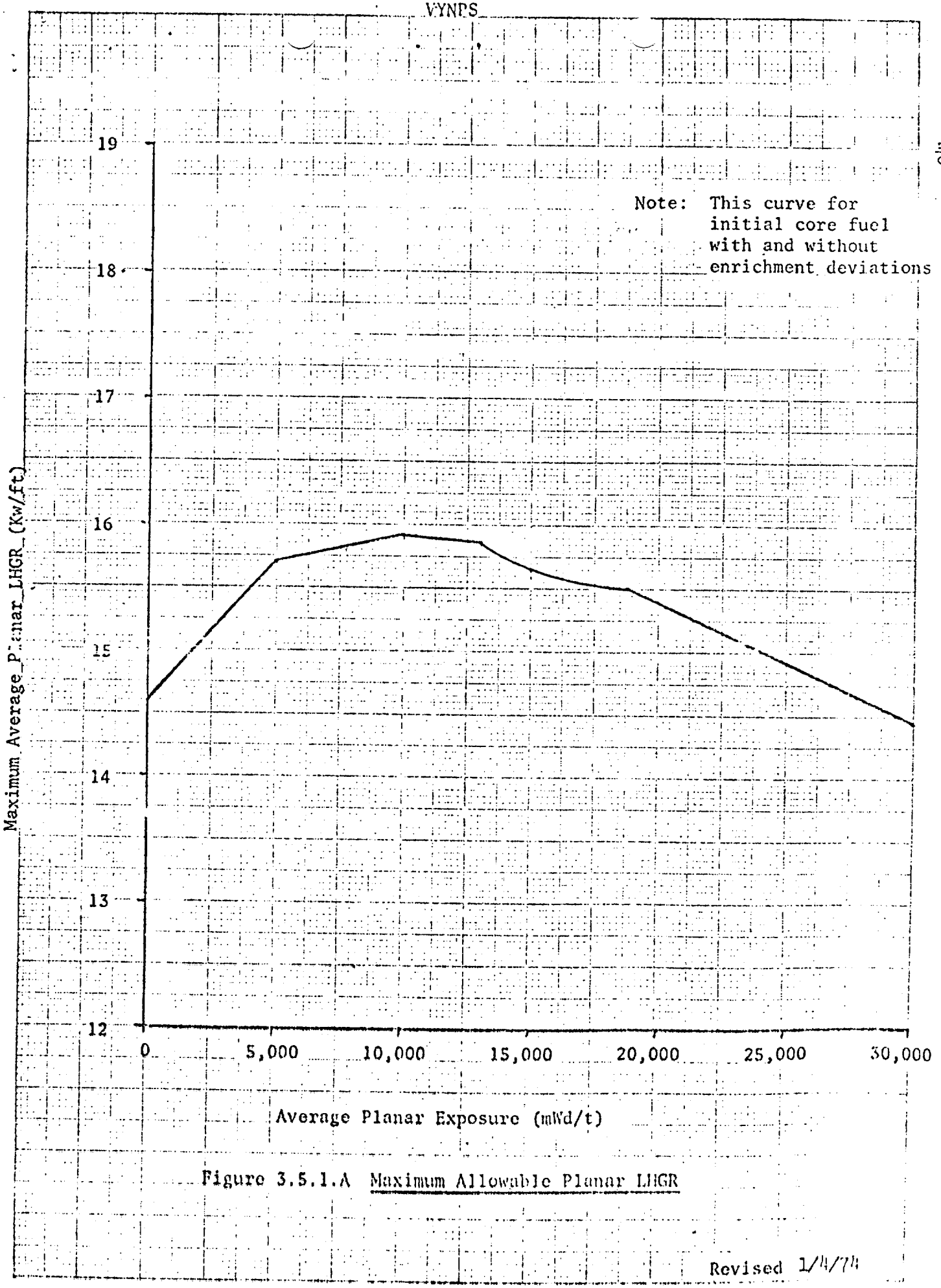

Figure 3.5.1.A Maximum Allowable Planar LHGR

Revised 1/4/74

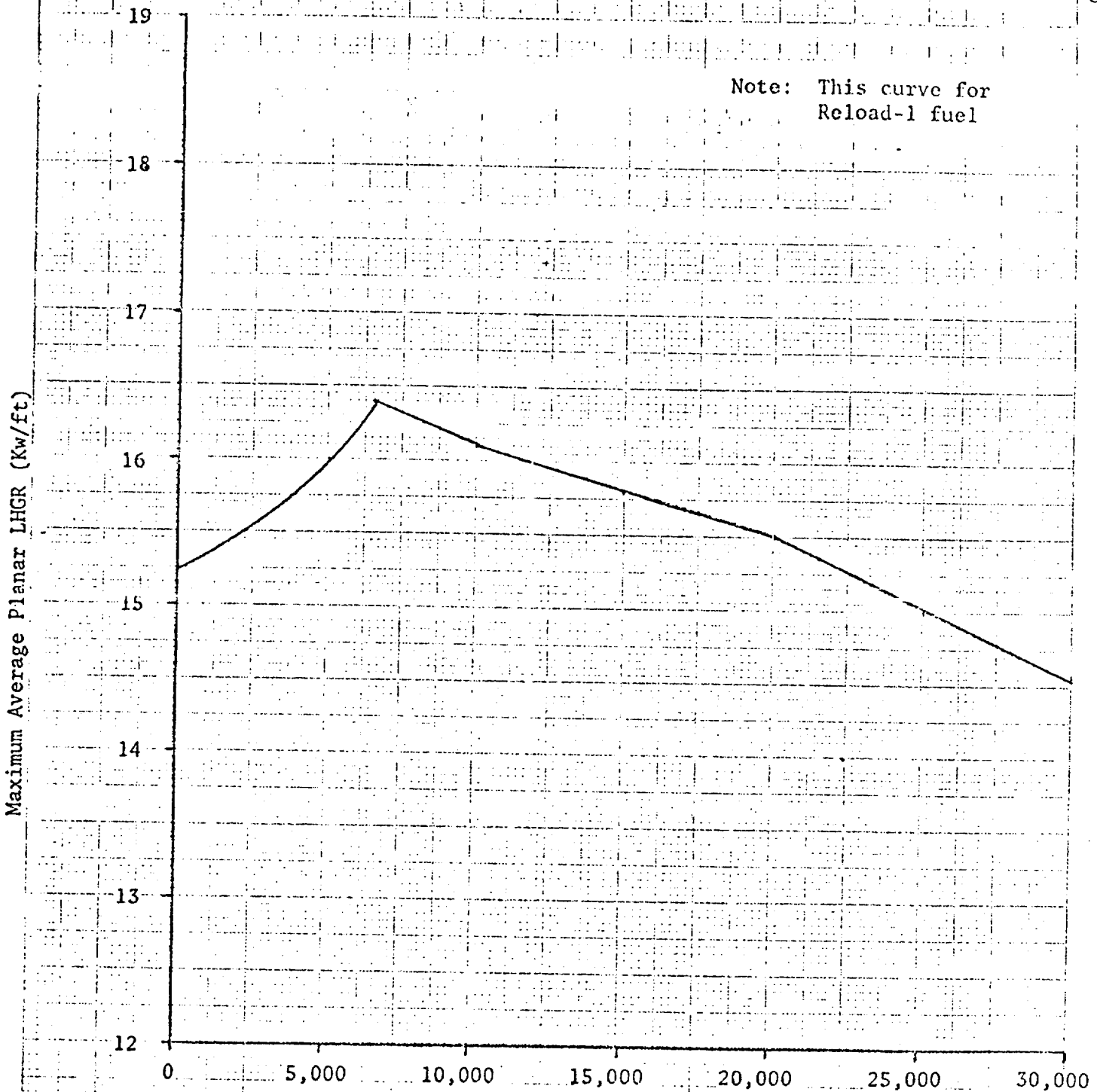

Figure 3.5.1.B Maximum Allowable Planar LHGR

Revised 1/4/74

3.5.J Average Planar LHGR

This specification assures that the peak cladding temperature following the postulated design basis loss-of-coolant accident will not exceed the 2300°F limit specified in the Interim Acceptance Criteria (IAC) issued in June 1971 even considering the postulated effects of fuel pellet densification.

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 ± 20°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 IAC limit.

The maximum average planar LHGR shown in Figures 3.5.1.A and 3.5.1.B is the same as that shown on the curve labeled "Ω" (Omega) on Figures 1-G and 2-G in the General Electric letter of J. A. Hinds to V. A. Moore, "Plant Evaluations with GEGAP-III," dated December 12, 1973, based on calculations employing the models described in the General Electric reports NEDM-10735 as modified by the General Electric report NEDO-20181.

3.5.K Local LHGR

This specification assures that the linear heat generation rate in any rod is less than the design linear heat generation even if fuel pellet densification is postulated. The power spike penalty specified is based on the analysis presented in Section 3.2.1 of the GE topical report NEDM-10735 Supplement 6, and assumes a linearly increasing variation in axial gaps between core bottom and top, and assures with a 95% confidence, that no more than one fuel rod exceeds the design linear heat generation rate due to power spiking.

4.5.J&K Average and Local LHGR

The LHGR shall be checked daily to determine if fuel burnup, or control rod movement has caused changes in power distribution. Since changes due to burnup are slow, and only a few control rods are moved daily, a daily check of power distribution is adequate.