

March 15, 2005

5928-05-20074

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Three Mile Island, Unit 1 (TMI Unit 1)
Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: M5TM Lead Test Rods - 15R Refueling Outage Post Irradiation Examinations

- References:
- (1) AmerGen letter to the NRC, dated January 18, 2001 (5928-00-20394), "Proposed Irradiation of Fuel Rods Beyond Current Lead Rod Burnup Limit"
 - (2) AmerGen letter to the NRC, dated April 11, 2001 (5928-01-20108), "Additional Information-Proposed Irradiation Of Fuel Rods Beyond Current Lead Rod Burnup Limit"
 - (3) NRC letter to AmerGen, dated May 18, 2001 (5928-01-30173), "Three Mile Island Nuclear Station, Unit 1 (TMI -1) - Re: Proposed Irradiation Of Fuel Rods Beyond Current Lead Rod Burnup Limit"
 - (4) AmerGen letter to the NRC, dated May 20, 2002 (5928-02-20120), "M5TM Lead Test Rods – 14R Refueling Outage Post Irradiation Examinations"

The following information is provided in accordance with the AmerGen Energy Company, LLC (AmerGen) commitment, described in References 1, 2, and 4, to provide Post Irradiation Examination (PIE) data for the M5TM lead test rods after their fourth cycle of operation to burnups in excess of 62 GWd/mtU. NRC concurrence to irradiate these rods for a fourth cycle was provided in Reference 3.

The PIE results obtained following the M5TM lead test rods' fourth cycle of operation in TMI Unit 1 Cycle 14 are presented in Framatome ANP Report BAW-2485, Revision 1, (Enclosure 1). Please note that the high burnup project was supported by the U.S. Department of Energy and the enclosed report is not proprietary.

As noted in BAW-2485, the four M5TM lead test fuel rods successfully completed four 24-month cycles of irradiation at TMI Unit 1 with a maximum fuel rod burnup of 68.0 GWd/mtU and a total reactor residence time of 2732 Effective Full Power Days (EFPD). At the end of four cycles, all measured fuel performance parameters were within the design models and no unexpected

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trends were observed. PIE measurements show that the M5TM lead test fuel rods continue to demonstrate low growth and low corrosion performance relative to Zr-4 clad fuel, as expected. The shoulder gap closure for these rods was also shown to be low.

This submittal satisfies the AmerGen commitment to provide the PIE data for the M5TM lead test rods and completes the high burnup test program for the M5TM rods at TMI Unit 1.

If any additional information is needed, please contact David J. Distel at (610) 765-5517.

Sincerely,



David P. Helker
Manager - Licensing
AmerGen Energy Company, LLC

Enclosure: (1) Framatome ANP Report BAW-2485, Revision 1, "Post Irradiation Examination for Advanced Materials at Burnups Exceeding the Current Limit," January 2005

cc: S. J. Collins, Administrator, USNRC Region I
T. G. Colburn, USNRC Senior Project Manager, TMI Unit 1
D. M. Kern, USNRC Senior Resident Inspector, TMI Unit 1
File No. 00141

ENCLOSURE 1

**Framatome ANP Report BAW-2485, Revision 1
“Post Irradiation Examination for Advanced Materials
at Burnups Exceeding the Current Limit”**

January 2005