



March 6, 2007

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Serial No. 06-894
NSS&L/DF R0
Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
NOTIFICATION REGARDING LEAD TEST ASSEMBLY

In a letter dated December 16, 2004, and supplemented on October 5, 2005, Dominion Nuclear Connecticut, Inc. (DNC) requested an amendment to Facility Operating License NPF-49, to revise the burnup limit for one Lead Test Assembly (LTA) to be irradiated during Millstone Power Station Unit 3 (MPS3) Cycle 12. The NRC subsequently approved this request on December 30, 2005, as Amendment 228. In the December 16, 2004 letter, DNC committed to provide supplemental information prior to the start of the operating cycle in which the affected LTA would exceed a burnup of 62,000 MWD/MTU. The supplemental information identified in the commitment contained in the December 16, 2004 submittal is provided in the attachment to this letter.

If you have any questions in regard to this report, please contact Mr. Paul R. Willoughby at (804) 273-3572.

Very truly yours,

Gerald T. Bischof
Vice President – Nuclear Engineering

Commitments in this letter: None

Attachment

cc: U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. V. Nerses
Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Mail Stop 8C2
Rockville, MD 20852-2738

Mr. G. E. Miller
Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Mail Stop 8B1
Rockville, MD 20852-2738

Mr. S. M. Schneider
NRC Senior Resident Inspector
Millstone Power Station

ATTACHMENT

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**DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3**

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In a letter dated December 16, 2004, and supplemented on October 5, 2005, Dominion Nuclear Connecticut, Inc. (DNC) requested an amendment to Facility Operating License NPF-49, to revise the burnup limit for one Lead Test Assembly (LTA) to be irradiated during Millstone Power Station Unit 3 (MPS3) Cycle 12.^{1,2} In a letter dated December 30, 2005, the NRC approved this request as Amendment 228.³ In the December 16, 2004 letter, DNC committed to provide supplemental information prior to the start of the operating cycle in which the affected LTA would exceed a burnup of 62,000 MWD/MTU. The additional information identified in the commitment contained in the December 16, 2004 submittal is provided below.

Licensee name

Dominion Nuclear Connecticut, Inc.

Plant name

Millstone Power Station Unit 3.

Cycle and date when the LTA shall be inserted

Cycle 12 – April 2007.

Note: Consistent with the exemption approval by the NRC on February 11, 2004,⁴ the LTA was first loaded in the Cycle 10 core and is currently in use in the Cycle 11 core. During Cycle 12 it is expected that the LTA will exceed the burnup limit of 62,000 MWD/MTU. Amendment No. 228 to the Facility Operating License permits the irradiation of an LTA containing an advanced zirconium-based alloy during Cycle 12 to an end-of-life fuel rod average burnup of 71,000 MWD/MTU.

¹ Leslie N. Hartz letter to U.S. NRC, "Millstone Power Station, Unit No. 3, Request for a License Amendment to Revise Burnup Limit for One Lead test Assembly (LBDCR LBC-MP3-04-004)," dated December 16, 2004.

² Leslie N. Hartz letter to U.S. NRC, "Millstone Power Station, Unit No. 3, Supplement to Request for a License Amendment to Revise Burnup Limit for One Lead Test Assembly (LBDCR LBC-MP3-04-004)," dated October 5, 2005.

³ NRC letter to Mr. David A. Christian, "Millstone Power Station, Unit No. 3 - Issuance of Amendment Re: Lead Test Assembly (TAC No. MC5424)," dated December 30, 2005.

⁴ NRC letter to Mr. David A. Christian, "Millstone Power Station, Unit No. 3, Exemption from the Requirements of Title 10 of the Code of Federal Regulations (10 CFR) Part 50.44, 10 CFR 50.46, and 10 CFR 50, Appendix K (TAC No. MB9897)," dated February 11, 2004.

Location of LTA

During Cycle 12, the LTA will be in core location H-8 (i.e., core center location). Reference FSAR Figure 4.3-1.

Anticipated pre- and post-cycle burnup for the LTA

At Beginning of Cycle 12 (approximately May 2007), it is estimated that the peak fuel pin exposure in the LTA will be approximately 50,400 MWD/MTU.

It is estimated that the predicted peak fuel pin exposure in the LTA will exceed 62,000 MWD/MTU approximately 10 months into Cycle 12 (approximately March 2008).

At End of Cycle 12 (approximately October 2008), it is estimated that the predicted peak fuel pin exposure in the LTA will be 69,000 to 70,000 MWD/MTU.

Note: The Cycle 12 predictions are preliminary.

Purpose of LTA

The purpose of the LTA program is to demonstrate the mechanical performance of an advanced fuel assembly design in the MPS3 reactor. The LTA mechanical design incorporates advanced features that are fully compatible with the MPS3 core dimensions, fuel handling tools and the existing Westinghouse 17 X 17 robust fuel assembly (RFA)/RFA-2 designs.

The primary new features of the LTA include Westinghouse integral top nozzle, enhanced structural and intermediate flow mixing (IFM) grids, two additional IFM grids, the tube-in-tube thimble design, and a reduced pressure drop debris filter bottom nozzle. Optimized ZIRLO™ is utilized for the fuel rod cladding, guide and instrument tubes, and grids. Spring clips are used in the fuel rods for pellet stack holddown. Details can be found in DNC submittals requesting exemption from NRC regulations to allow use of Optimized ZIRLO™.^{5,6}

⁵ J. A. Price letter to the U.S. NRC, "Millstone Power Station, Unit No. 3, Request for Exemption Pursuant to 10 CFR 50.12 - Exemption to the Cladding Material Specified in 10 CFR 50.44, 10 CFR 50.46, and 10 CFR 50 Appendix K," dated July 1, 2003.

⁶ J. A. Price letter to U.S. NRC, "Millstone Power Station, Unit No. 3, Response to Request for Additional Information Regarding Exemption to Use a Low Tin Cladding (TAC No. MB9897)," dated November 10, 2003.

Estimated date for pre- and post-irradiation characterizations or the results of the pre-characterization and an estimation of the date for the post-irradiation characterization

It is estimated that the pre-cycle characterization visual inspections will take place during Refueling Outage 11 in April 2007.

It is estimated that the post-cycle characterization examinations will take place in January 2009.

Estimated date of second report

It is estimated that the second report will be provided to the NRC by October 2009.

Statement that the LTA will not be irradiated to the high burnup if all current design criteria are not met

The irradiation of the LTA to a high burnup is conditioned on:

1. All analyzed design criteria being met for the projected burnup and operating conditions using codes and methods approved for the current burnup limits.
2. The results of visual inspections of the LTA during Refueling Outage 11 being acceptable.