

November 2, 2005

Mr. David A. Lochbaum
Union of Concerned Scientists
1707 H Street, NW, Suite 600
Washington, DC 20006-3919

Dear Mr. Lochbaum:

I am responding to your letter dated July 29, 2005, addressed to Richard Ennis, regarding the impacts of various issues on the Vermont Yankee Nuclear Power Station (VYNPS) minimum critical power ratio (MCPR) limit. In the letter, you expressed concern about cumulative effects of fuel channel bow and uncertainties associated with General Electric (GE) methods for performing neutronic and thermal/hydraulic analysis. To address fuel channel bow, you stated that the licensee should either apply the 0.02 operating limit maximum critical power ratio (OLMCPR) penalty discussed in General Electric Nuclear Energy's (GENE's) March 3, 2003, letter or implement the recommended surveillance program. To address the GE methods uncertainties, you stated that the licensee should apply a 0.02 MCPR penalty, proposed in the June 30, 2005, public meeting with the Nuclear Regulatory Commission (NRC), GE, and Entergy Nuclear Operations, Inc. (Entergy), in addition to any other penalties.

On March 3, 2003, GENE issued notification pursuant to Title 10 of the *Code of Federal Regulations*, Part 21, concerning a reportable condition related to fuel channel bowing which could lead to control rod-fuel channel interference in GENE boiling water reactors (BWRs). In the March 3, 2003, letter GENE recommended an interim penalty of 0.02 to the OLMCPR for BWR/6 plants affected by the fuel channel bow phenomenon in order to maintain operation within acceptable limits. VYNPS is a BWR/4, D-lattice plant and, as such, was not subject to the recommendations in this letter.

By letter dated July 14, 2005, GENE revised the recommended surveillance program for fuel channel-control blade interference. The revised program included a surveillance plan for BWR/6, S-lattice plants, and another surveillance plan for BWR/2 through 5, C and D-lattice plants. VYNPS was one of the plants that GENE recommended for implementation of the revised surveillance program. GENE did not recommend additional OLMCPR penalties for D-lattice plants.

During a September 14, 2005, telephone conversation between the NRC staff, Entergy, and GENE, Entergy indicated that they plan to implement the recommended surveillance program for monitoring fuel channel-control blade interference after GENE completes its assessment of the susceptible fuel cells. Entergy also indicated that, in the fuel reload analyses, there is an "R-factor" uncertainty which accounts for some variance of fuel power distribution, fuel assembly geometry, and fuel channel bow. The staff agrees that implementing the recommended surveillance program is the appropriate action for the licensee to take in response to the GE part 21 notification.

The 0.02 MCPR penalty you referenced from the June 30, 2005, public meeting, was proposed to address NRC staff concerns specifically related to the level of uncertainties in the methods used by GENE to perform reactor neutronic and thermal/hydraulic analyses for VYNPS at

extended power uprate (EPU) conditions. This additional conservatism would only be implemented as a license condition if the NRC staff approves the EPU amendment request.

In summary, the licensee has indicated that they plan to implement the recommended surveillance program and would implement a 0.02 MCPR penalty if the EPU was approved, and the staff believes their actions adequately address your concerns. The NRC staff believes the 10 CFR Part 21 process to be appropriate for resolution of issues associated with fuel channel bow and that the uncertainties in GENE analytical methods would be addressed in the NRC staff's review of the EPU amendment request. I appreciate your input on this matter, and hope that this letter resolves your concerns.

Sincerely,

/RA/

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Docket No. 50-271

cc: See next page

extended power uprate (EPU) conditions. This additional conservatism would only be implemented as a license condition if the NRC staff approves the EPU amendment request.

In summary, the licensee has indicated that they plan to implement the recommended surveillance program and would implement a 0.02 MCPR penalty if the EPU was approved. The NRC staff believes the 10 CFR Part 21 process to be appropriate for resolution of issues associated with fuel channel bow and that the uncertainties in GENE analytical methods would be addressed in the NRC staff's review of the EPU amendment request. I appreciate your input on this matter, and hope that this letter resolves your concerns.

Sincerely,
/RA/

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Docket No. 50-271

cc: See next page

DISTRIBUTION: Y020050167

PUBLIC
PDI-2 R/F
RidsRgn1MailCenter
RidsNrrOd
RidsNrrAdpt
RidsNrrWpcMail
LCox
DRoberts
CHolden

CRaynor
REnnis
GMiller
FAkstulewicz
CAnderson, RI
VBucci, OIG
STurk, OGC
KWinsburg, OGC

Package: ML052910278

Incoming: ML052150339

Response: ML052910272

NRR-106

OFFICE	PDI-2/PM	PDI-2/PM	PDI-2 /LA	SRXB-A/SC	TECH ED	PDI-2/SC
NAME	GMiller	REnnis	CRaynor	FAkstulewicz	PKleene	DRoberts (SBAiley for)
DATE		10/25/05	10/25/05	10/19/05	10/25/05	10/21/05

OFFICE	PDI/PD	DLPM/D	NRR/OD
NAME	CHolden	TMarsh (CHaney for)	JDyer
DATE	10/24/05	10/25/05	11/2/05

OFFICIAL RECORD COPY

Vermont Yankee Nuclear Power Station

cc:

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

Mr. David R. Lewis
Pillsbury, Winthrop, Shaw, Pittman, LLP
2300 N Street, N.W.
Washington, DC 20037-1128

Ms. Christine S. Salembier, Commissioner
Vermont Department of Public Service
112 State Street
Montpelier, VT 05620-2601

Mr. Michael H. Dworkin, Chairman
Public Service Board
State of Vermont
112 State Street
Montpelier, VT 05620-2701

Chairman, Board of Selectmen
Town of Vernon
P.O. Box 116
Vernon, VT 05354-0116

Operating Experience Coordinator
Vermont Yankee Nuclear Power Station
320 Governor Hunt Road
Vernon, VT 05354

G. Dana Bisbee, Esq.
Deputy Attorney General
33 Capitol Street
Concord, NH 03301-6937

Chief, Safety Unit
Office of the Attorney General
One Ashburton Place, 19th Floor
Boston, MA 02108

Ms. Deborah B. Katz
Box 83
Shelburne Falls, MA 01370

Ms. Carla A. White, RRPT, CHP
Radiological Health
Vermont Department of Health
P.O. Box 70, Drawer #43
108 Cherry Street
Burlington, VT 05402-0070

Mr. James M. DeVincentis
Manager, Licensing
Vermont Yankee Nuclear Power Station
P.O. Box 0500
185 Old Ferry Road
Brattleboro, VT 05302-0500

Resident Inspector
Vermont Yankee Nuclear Power Station
U. S. Nuclear Regulatory Commission
P.O. Box 176
Vernon, VT 05354

Director, Massachusetts Emergency
Management Agency
ATTN: James Muckerheide
400 Worcester Rd.
Framingham, MA 01702-5399

Jonathan M. Block, Esq.
Main Street
P.O. Box 566
Putney, VT 05346-0566

Mr. John F. McCann
Director, Nuclear Safety Assurance
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Gary J. Taylor
Chief Executive Officer
Entergy Operations
1340 Echelon Parkway
Jackson, MS 39213

Vermont Yankee Nuclear Power Station

cc:

Mr. John T. Herron
Sr. VP and Chief Operating Officer
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Danny L. Pace
Vice President, Engineering
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Brian O'Grady
Vice President, Operations Support
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Michael J. Colomb
Director of Oversight
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. John M. Fulton
Assistant General Counsel
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Jay K. Thayer
Site Vice President
Entergy Nuclear Operations, Inc.
Vermont Yankee Nuclear Power Station
P.O. Box 0500
185 Old Ferry Road
Brattleboro, VT 05302-0500

Mr. Kenneth L. Graesser
38832 N. Ashley Drive
Lake Villa, IL 60046

Mr. James Sniezek
5486 Nithsdale Drive
Salisbury, MD 21801

Mr. Ronald Toole
1282 Valley of Lakes
Box R-10
Hazelton, PA 18202

Ms. Stacey M. Lousteau
Treasury Department
Entergy Services, Inc.
639 Loyola Avenue
New Orleans, LA 70113

Mr. Raymond Shadis
New England Coalition
Post Office Box 98
Edgecomb, ME 04556

Mr. James P. Matteau
Executive Director
Windham Regional Commission
139 Main Street, Suite 505
Brattleboro, VT 05301

Mr. William K. Sherman
Vermont Department of Public Service
112 State Street
Drawer 20
Montpelier, VT 05620-2601