

March 17, 2005

Mr. Michael Kansler  
President  
Entergy Nuclear Operations, Inc.  
440 Hamilton Avenue  
White Plains, NY 10601

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - ISSUANCE OF  
EXEMPTION FROM 10 CFR PART 50, APPENDIX J (TAC NO. MC0253)

Dear Mr. Kansler:

The Commission has approved the enclosed exemption from specific requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix J, for Vermont Yankee Nuclear Power Station. This action is in response to your application dated July 31, 2003, as supplemented on October 10, November 7 (2 letters), November 20, December 11 (2 letters), and December 30, 2003, and February 10, February 18, February 25, March 17, May 12, and July 20, 2004.

A copy of the exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

**/RA/**

Richard B. Ennis, Senior Project Manager, VY Section  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure: Exemption

cc w/encl: See next page

Mr. Michael Kansler  
President  
Entergy Nuclear Operations, Inc.  
440 Hamilton Avenue  
White Plains, NY 10601

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - ISSUANCE OF  
EXEMPTION FROM 10 CFR PART 50, APPENDIX J (TAC NO. MC0253)

Dear Mr. Kansler:

The Commission has approved the enclosed exemption from specific requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix J, for Vermont Yankee Nuclear Power Station. This action is in response to your application dated July 31, 2003, as supplemented on October 10, November 7 (2 letters), November 20, December 11 (2 letters), and December 30, 2003, and February 10, February 18, February 25, March 17, May 12, and July 20, 2004.

A copy of the exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

*/RA/*

Richard B. Ennis, Senior Project Manager, VY Section  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure: Exemption

cc w/encl: See next page

DISTRIBUTION

PUBLIC	AHowe	CRaynor	ACRS
PDI-2 Reading	REnnis	RDennig	OGC
TMarsh	VBucci, OIG	CAnderson, RGN-I	GHill (2)
CHolden	DLPM DPR	BPoole, OGC	

Accession No.: ML041310359

OFFICE	PDI-2/PM	PDI-VY/PM	PDI-2/LA	SPSB/SC	OGC	PDI-VY/SC	PDI/D	DLPM/D
NAME	DSkay	REnnis	CRaynor	RDennig	DFruchter	AHowe	CHolden	TMarsh
DATE	10/1/04	11/29/04	11/29/04	SE dated 4/6/04	10/12/04	11/9/04	2/14/05	3/14/05

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  
Shaw, Pittman, Potts & Trowbridge  
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

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ENTERGY NUCLEAR VERMONT YANKEE, LLC  
AND ENTERGY NUCLEAR OPERATIONS, INC.  
VERMONT YANKEE NUCLEAR POWER STATION  
DOCKET NO. 50-271  
EXEMPTION

1.0 BACKGROUND

Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (Entergy or the licensee) are the holders of Facility Operating License No. DPR-28 which authorizes operation of the Vermont Yankee Nuclear Power Station (VYNPS). The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

The facility consists of a boiling-water reactor located in Vernon, Vermont.

2.0 REQUEST/ACTION

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(o), requires primary reactor containments for water-cooled power reactors to be subject to the requirements of Appendix J to 10 CFR Part 50. Appendix J specifies the leakage test requirements, schedules, and acceptance criteria for tests of the leak-tight integrity of the primary reactor containment and systems and components which penetrate the containment. Option B of Appendix J is titled "Performance-Based Requirements." Option B, Section III.A., "Type A Test," requires that the overall integrated leakage rate must not exceed the allowable leakage rate (La) with margin, as specified in the Technical Specifications (TSs). The overall integrated leakage rate, as specified in the 10 CFR Part 50, Appendix J, Option B, definitions, means the

total leakage rate through all tested leakage paths. The licensee is requesting a permanent exemption from Option B, Section III.A., requirements to permit exclusion of the main steam pathway leakage contributions from the overall integrated leakage rate Type A test measurement. Main steam leakage includes leakage through all four main steam lines and the main steam drain line.

Option B, Section III.B of 10 CFR Part 50, Appendix J, "Type B and C Tests," requires that the sum of the leakage rates of all Type B and Type C local leak rate tests be less than the performance criterion (La) with margin, as specified in the TSs. The licensee also requests exemption from this requirement, to permit exclusion of the main steam pathway leakage contributions from the sum of the leakage rates from Type B and Type C tests.

The main steam leakage effluent has a different pathway to the environment, when compared to a typical containment penetration. It is not directed into the secondary containment and filtered through the standby gas treatment system as is other containment leakage. Instead, the main steam leakage is collected and treated via an alternative leakage treatment (ALT) path having different mitigation characteristics.

In performing accident analyses, it is appropriate to group various leakage effluents according to the treatment they receive before being released to the environment (e.g., from main steam pathways). The proposed exemption would more appropriately permit ALT pathway leakage to be independently grouped with its unique leakage limits. In this manner, the VYNPS containment leakage testing program will be made more consistent with the limiting assumptions used in the associated accident consequence analyses.

The licensee has analyzed the main steam leakage pathway (with an increase in leakage from 62 standard cubic feet per hour (scfh) to 124 scfh at the calculated peak containment internal pressure (Pa)), the secondary containment bypass leakage pathways, and the containment leakage pathway (La) separately in their dose consequence analyses. The

calculated radiological consequences of the combined leakages are within the criteria of 10 CFR 50.67. The NRC staff reviewed the licensee's analyses and found them acceptable.

### 3.0 DISCUSSION

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50 when (1) the exemptions are authorized by law, will not present an undue risk to public health and safety, and are consistent with the common defense and security, and (2) when special circumstances are present. Special circumstances are present whenever, according to 10 CFR Part 50.12(a)(2)(ii), "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. . . ."

The licensee's exemption request was submitted in conjunction with a TS amendment application to increase the allowable leak rate for the main steam isolation valves (MSIVs). The proposed amendment will be issued concurrently with this exemption. The exemption and amendments together would implement the recommendations of Topical Report NEDC-31858, "BWR Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems." The topical report was evaluated by the NRC staff and accepted in a safety evaluation dated March 3, 1999. The special circumstances associated with MSIV leakage testing are fully described in the topical report. These circumstances relate to the monetary costs and personnel radiation exposure involved with maintaining MSIV leakage limits more restrictive than necessary to meet offsite dose criteria and control room habitability criteria.

The underlying purpose of the rule which implements Appendix J (i.e., 10 CFR 50.54(o)) is to assure that containment leak tight integrity is maintained (a) as tight as reasonably achievable and (b) sufficiently tight so as to limit effluent release to values bounded by the

analyses of radiological consequences of design basis accidents. The NRC staff has determined that the intent of the rule is not compromised by the proposed action.

Based on the foregoing, the separation of the main steam pathways from the other containment leakage pathways is warranted because a separate radiological consequence term has been provided for these pathways. The revised design basis radiological consequences analyses address these pathways as individual factors, exclusive of the primary containment leakage. Therefore, the NRC staff finds the proposed exemption from Appendix J to be acceptable.

#### 4.0 CONCLUSION

Accordingly, the Commission has determined that, pursuant to 10 CFR Part 50.12, the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are present. Therefore, the Commission hereby grants Entergy an exemption from the requirements of Sections III.A and III.B of Option B of Appendix J to 10 CFR Part 50 for VYNPS.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the quality of the human environment (69 FR 67612).

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 17th day of March 2005

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Ledyard B. Marsh, Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation