



Entergy Nuclear Northeast
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601
Tel 914 272 3200
Fax 914 272 3205

Michael R. Kansler
President

August 6, 2003
BVY-03-72
NL-03-129
JPN-03-019
ENO Ltr. 2.03.095

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

SUBJECT: Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Station, Unit 3
Docket Nos. 50-286
Vermont Yankee Nuclear Power Station
Docket No. 50-271
Pilgrim Nuclear Power Station
Docket No. 50-293
James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
NRC Generic Letter 2003-01
"Control Room Habitability," 60-Day Response

References: 1. NRC Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003.

Dear Sir or Madam:

Entergy Nuclear Operations, Inc. (ENO), as operator of the Pilgrim Nuclear Power Station, the James A. FitzPatrick Nuclear Plant, the Vermont Yankee Nuclear Power Station and the Indian Point Unit 3 Nuclear Power Plant, hereby submits a 60-day response to NRC Generic Letter 2003-01 (Reference 1).

ENO has reviewed the actions requested by Generic Letter 2003-01 and has determined that the 180-day schedule for the completion of all the requested actions cannot be met at four of our plants – Pilgrim, FitzPatrick, Vermont Yankee and Indian Point Unit 3. Therefore, ENO is submitting this 60-day response. ENO will submit a 180-day response to Generic Letter 2003-01 for Indian Point Unit 2.

As requested by the generic letter, ENO is proposing an alternative course of action.

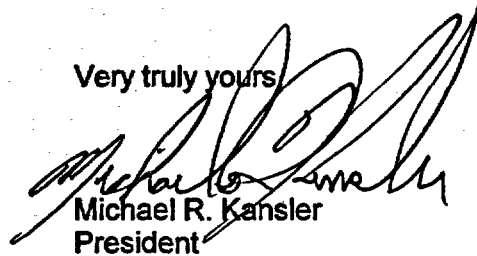
A102

Attachment 1 details this proposal and includes the basis for this course of action. Attachment 1 also includes a schedule for the submittal of a response to Item 1 (subparts (a), (b), and (c)) and an initial response to Items 2 and 3 of the Generic Letter.

Attachment 2 summarizes the commitments in Attachment 1.

If you have any questions, please contact Ms. Charlene Faison at (914) 272-3378.

Very truly yours,



Michael R. Kansler
President

Attachment:

1. 60-day Response to NRC Generic Letter 2003-01, "Control Room Habitability,"
2. Summary of Commitments

cc: Next page.

cc:

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

Mr. Patrick D. Milano, Sr. Project Manager
Project Directorate I-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop: O-8-C2
Washington, DC 20555-0001

Resident Inspector's Office
Indian Point 3 Nuclear Power Plant
U. S. Nuclear Regulatory Commission
P. O. Box 337
Buchanan, NY 10511

Senior Resident Inspector's Office
Indian Point 2 Nuclear Power Plant
U. S. Nuclear Regulatory Commission
P. O. Box 38
Buchanan, NY 10511-0038

Mr. Guy S. Vissing, Project Manager
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop OWFN 8C2
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Resident Inspector's Office
James A. FitzPatrick Nuclear Power Plant
U. S. Nuclear Regulatory Commission
P. O. Box 136
Lycoming, NY 13093-0136

Mr. Travis Tate, Project Manager
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop O-8B-1
Washington, DC 20555-0001

Senior Resident Inspector
U. S. Nuclear Regulatory Commission
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Mail Stop 66
Plymouth, MA 02360

Mr. Robert. M. Pulsifer, Project Manager
License Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop O-8B-1
Washington, DC 20555-0001

USNRC Resident Inspector
Vermont Yankee Nuclear Power Station
320 Governor Hunt Road
P. O. Box 157
Vernon, VT 05354

Mr. David O'Brien
Commissioner
Department of Public Service
112 State Street, Drawer 20
Montpelier, VT 05602-2601

Mr. Paul Eddy
New York State Department
of Public Service
3 Empire State Plaza
Albany, NY 12223-1350

Mr. Peter R. Smith, Acting President
New York State Energy, Research, and
Development Authority
Corporate Plaza West
286 Washington Avenue Extension
Albany, NY 12203-6399

**Entergy Nuclear Operations, Inc.
60-day Response to NRC Generic Letter 2003-01
Control Room Habitability**

1. INTRODUCTION

Entergy Nuclear Operations, Inc. (ENO), has reviewed the actions requested by NRC Generic Letter 2003-01 and has determined that the 180-day completion schedule cannot be met at four of our plants – Pilgrim, FitzPatrick, Vermont Yankee and Indian Point Unit 3. ENO will submit a 180-day response to Generic Letter 2003-01 for Indian Point Unit 2.

This report addresses the proposed alternative course of action ENO proposes to take (Section 2). It includes the basis for this course of action (Section 3) and a schedule (Section 4). This report also addresses item 2 (Section 5) and item 3 (Section 6) of Generic Letter 2003-01.

2. PROPOSED ALTERNATIVE COURSE OF ACTION

ENO proposes to follow a systematic approach to assess and evaluate control room habitability at Pilgrim, FitzPatrick, Vermont Yankee and Indian Point 3. ENO will use Section 3 of NEI 99-03, Revision 1 (Reference 2) as guidance. The following initial, "one-time actions" will be part of these assessments, as necessary and appropriate:

- Assemble CRH licensing and design bases (3.1.1)
- Assemble CRH analyses (3.1.2)
- Document CRH licensing and design bases and analyses (3.1.3)
- Assess and evaluate licensing/design bases and operator dose analyses (3.2.1)
- Confirm that limiting DBA has been used to assure adequacy of CRH design (3.2.2)
- Assess and evaluate potential sources of hazardous chemicals. Update hazardous chemicals surveys as necessary (3.2.3)
- Assess and evaluate control room in leakage (3.2.4)
- Assess and evaluate control room during smoke events (3.2.5)
- Assess and evaluate the adequacy of existing control room emergency ventilation system technical specifications (3.2.6)

(The corresponding Section of NEI 99-03, Rev. 1 is shown in parenthesis.) These initial actions will provide the technical and licensing basis for additional actions, such as modifications, tests, technical specification changes, license amendments, or further analyses.

Initial Actions Summary Report

After the completion of these actions, ENO will prepare and submit to the NRC, a written report summarizing the results of these initial actions. It will address Section 1, including subparts 1(a), 1(b) and 1(c), of Generic Letter 2003-01. With this summary, ENO will submit plans and schedules for the resolution of any significant discrepancies or conditions adverse to quality.

3. BASIS FOR ACCEPTABILITY OF ALTERNATIVE COURSE OF ACTION

The alternative course of action describe above is justifiable for several reasons. Some of these are detailed below:

- Individual Plant Examinations for External Events (IPEEE) have investigated the frequencies of occurrence and impact of hazardous chemical, transportation, and

**Entergy Nuclear Operations, Inc.
60-day Response to NRC Generic Letter 2003-01
Control Room Habitability**

nearby facility incidents. For Pilgrim, Vermont Yankee, and FitzPatrick, it has been determined that such accidents have a low (less than $1\text{E-}6$ per year) frequency of occurrence. A recent evaluation of control room habitability has been performed for IPEC (Reference 11) and the only hazardous chemical of concern that could be released within 5 miles of the plant is chlorine. This study estimated that the frequency of a major chlorine release is approximately $2.5\text{E-}6$ per year. Therefore, the increased probability of occurrence of such toxic chemical incidents is likewise low for the additional proposed period of time until corrective actions are completed.

- Operators are protected from the potential effects of radiological events, or hazardous chemical releases by existing alternate means (e.g., self-contained breathing apparatus, smoke fans, KI, etc.)
- Onsite and offsite hazardous material surveys have been conducted in the past at FitzPatrick, Pilgrim, Indian Point and Vermont Yankee. If hazardous materials were identified that could threaten control room habitability, compensatory measures were instituted.
- Previous evaluations and analyses, together with existing procedures and controls limit the extent of issues raised in the GL (i.e., radiological, toxicity, and reactor control impacts). For example, the potential effects on control room habitability of hazardous chemicals were evaluated as part of NUREG 0737, III.D.3.4, "Control Room Habitability," (Ref. 7).
- Unique control room ventilation conditions may obviate the need for tracer gas testing at some plants. Further assessment and evaluation is necessary to confirm these conditions.
- Interim compensatory measures will be implemented if evidence indicates that control room operators are not adequately protected from the potential effects of radiological events or hazardous chemicals.
- There are only a limited number of companies qualified to conduct ASTM E741 (Ref. 4), or equivalent, tracer gas tests. ENO has made initial contact with three qualified companies and is currently negotiating with two of them regarding the Pilgrim test program. Test dates for all plants have not been finalized.
- ENO anticipates conducting tracer gas tests at Pilgrim using two methods (commonly known as SF6 and PFT) to provide a basis for their comparison. These tests will help ENO determine if the two test methodologies are comparable. These tests have been tentatively scheduled for November 2003. Indications are that appropriately trained staff personnel may be able to do the PFT testing with greater efficiency and repeatability than the SF6 test. PFT tests may also be less disruptive and more economical.
- Design basis operator radiological dose calculations are being revised. ENO submitted an alternative source term (AST) license amendment application for Vermont Yankee in July of 2003 (Reference 10). An AST submittal is planned for

**Entergy Nuclear Operations, Inc.
60-day Response to NRC Generic Letter 2003-01
Control Room Habitability**

FitzPatrick before the end of this year. AST applications for Indian Point 3 and Pilgrim are planned for the 2nd or 3rd quarter of 2004. Complete responses to the Generic Letter cannot be finalized until these applications are dispositioned.

- ENO needs to evaluate new NRC policies and technical positions regarding how design basis analyses are performed and used. Specifically, recently issued regulatory guides (RG 1.195, Ref. 8, on dose analyses, and RG 1.196, Ref. 9, on control room habitability) provide licensees with several options regarding design basis operator dose calculations. Under these regulatory guides, licensees can maintain their current licensing basis, conservatisms and acceptance criteria, or perform new analyses, expand the licensing basis to potentially include new design basis accidents, and apply new acceptance criteria.
- The generic letter requires in-depth research and evaluation of design basis issues. Design basis accidents not previously analyzed may have to be considered. All of the new or revised habitability analyses cannot be completed in the 180-day time period allotted.
- The NRC and industry representatives have not yet finalized new technical specification requirements for control room habitability. While both the industry and NRC have given this issue a high priority, latest estimates are that model specifications (i.e., TSTF-448, Ref. 5) will not be ready until late 2003. The availability of a CLIIP (consolidated line item improvement process) would minimize NRC staff resources and speed its review.
- The potential effects of smoke on control room habitability were considered (to varying degrees) as part of Appendix R fire protection analyses. Equipment is available, and personnel have been trained, to mitigate the effects of smoke. Pre-fire plans have been prepared and implemented. For example, at Vermont Yankee, reactor control capability is not expected to be effected by smoke because fire protection and suppression limits the potential affect of fire. In addition, Vermont Yankee's control room is physically remote from safe shutdown panel locations. Existing procedures and training require close monitoring of the potential effects of fire on control room operations.
- A past ASTM E741 test of Vermont Yankee's control room demonstrated that measured control room in-leakage (approximately 21 cfm) is significantly less than the in-leakage assumed in current licensing basis analyses (1000 cfm).
- An updated control room habitability report was prepared and submitted to the NRC for FitzPatrick in March 1995 (Reference 3). Based on the results of the analysis summarized in this report, the control room ventilation system was determined to be capable of assuring plant operators are adequately protected against the effects of accidental releases of toxic and radioactive gases and smoke. In addition, a single failure analysis was performed and the effects of the worst case single failure was assessed in the radiation dose habitability analysis. The analysis results concluded that control room doses were within the 10 CFR 50, Appendix A, GDC 19 limits.

**Entergy Nuclear Operations, Inc.
60-day Response to NRC Generic Letter 2003-01
Control Room Habitability**

- CRH at Indian Point 3 will be addressed as part of the AST and stretch-power-uprate programs.

4. PROPOSED SCHEDULE

ENO will submit a written response to items 1, 1(a), 1(b) and 1(c) of GL 2003-01 for Pilgrim, Vermont Yankee, FitzPatrick and Indian Point Unit 3 not later than September 30, 2004. This response will include a summary of the "initial action" evaluations and assessments described in Section 3 of NEI 99-03, Revision 1. The response will also include plans and schedules for resolving significant discrepancies, adverse conditions, required modifications, and a control room habitability program, as necessary. Final responses to items 2 and 3 of GL 2003-01 will also be included in this response.

5. GL 2003-01 ITEM 2, COMPENSATORY MEASURES

No compensatory measures are currently in-use at Pilgrim, Vermont Yankee, FitzPatrick or Indian Point Unit 3 to ensure control room habitability.

ENO may implement compensatory measures (e.g., self-contained breathing apparatus, or KI tablets) in the future if warranted by new information.

6. GL 2003-01 ITEM 3, APPLICABILITY OF GENERAL DESIGN CRITERIA

Based on the information currently available, ENO believes that Pilgrim, Vermont Yankee, FitzPatrick, and Indian Point Unit 3 are required to meet "either the GDC, the draft GDC, or the 'Principal Design Criteria' regarding control room habitability." ENO will confirm this as part of its "initial actions," specifically, the assembly and evaluation of the licensing and design bases.

**Entergy Nuclear Operations, Inc.
60-day Response to NRC Generic Letter 2003-01
Control Room Habitability**

7. REFERENCES

1. USNRC Generic Letter 2003-01, "Control Room Habitability," June 12, 2003.
2. Nuclear Energy Institute, NEI 99-03, Revision 1, "Control Room Habitability Guidance," March 2003.
3. New York Power Authority letter to USNRC, (JPN-95-010), "Response to NUREG-0737, Item III.D.3.4, Control Room Habitability," March 2, 1995.
4. American Society for Testing Materials (ASTM) E741, "Standard Test Methodology for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution"
5. Industry/TSTF Standard Technical Specification Change Traveler – 448, "Control Room Habitability"
6. J. J. DiNunno et al., "Calculation of Distance Factors for Power and Test Reactor Sites," USAEC TID-14844, U. S. Atomic Energy Agency (now USNRC), 1962.
7. USNRC, "Clarification of TMI Action Plant Requirements," NUREG-0737," Item III.D.3.4, "Control Room Habitability," November 1980.
8. USNRC Regulatory Guide 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Basis Accidents at Light-Water Nuclear Power Plants," May 2003.
9. USNRC Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," May 2003.
10. Entergy Nuclear Operations, Inc. letter to USNRC (BVY-03-70) "Vermont Nuclear Power Station, Technical Specification Proposed Change No. 262, Alternative Source Term," July 31, 2003.
11. Risk Research Group, Inc., IP3-RPT-CRHHV-03379, "Control Room Habitability Evaluation, Final Report," February 20, 2003.

**Entergy Nuclear Operations, Inc.
60-day Response to NRC Generic Letter 2003-01
Control Room Habitability**

SUMMARY OF COMMITMENTS

ID No.	Description	Date
1	<p>ENO will prepare and submit to the NRC, a written report summarizing the results of the "initial actions" described in Section 3 of NEI 99-03, Rev. 1 for Pilgrim, Vermont Yankee, FitzPatrick and Indian Point 3. The report will:</p> <ul style="list-style-type: none"><li>• respond to Section 1 of Generic Letter 2003-01, including subparts 1(a), 1(b) and 1(c);<li>• include final responses to items 2 and 3 of Generic Letter 2003-01; and<li>• include plans and schedules for the resolution of any significant discrepancies or conditions adverse to quality.	September 30, 2004

**Entergy Nuclear Operations, Inc.
60-day Response to NRC Generic Letter 2003-01
Control Room Habitability**

SUMMARY OF COMMITMENTS

ID No.	Description	Date
1	<p>ENO will prepare and submit to the NRC, a written report summarizing the results of the "initial actions" described in Section 3 of NEI 99-03, Rev. 1 for Pilgrim, Vermont Yankee, FitzPatrick and Indian Point 3. The report will:</p> <ul style="list-style-type: none">• respond to Section 1 of Generic Letter 2003-01, including subparts 1(a), 1(b) and 1(c);• include final responses to items 2 and 3 of Generic Letter 2003-01; and• include plans and schedules for the resolution of any significant discrepancies or conditions adverse to quality.	September 30, 2004