

December 22, 2005

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
ENTERGY NUCLEAR VERMONT YANKEE,)	Docket No. 50-271-OLA
LLC and ENTERGY NUCLEAR)	
OPERATIONS, INC.)	ASLBP No. 04-832-02-OLA
)	
(Vermont Yankee Nuclear Power Station))	

NRC STAFF'S ANSWER TO
ENTERGY'S MOTION FOR SUMMARY DISPOSITION
OF NEW ENGLAND COALITION CONTENTION 3

INTRODUCTION

Pursuant to 10 C.F.R. §§ 2.323(c) and 2.1205(b), the NRC Staff ("Staff") herein answers "Entergy's Motion for Summary Disposition of New England Coalition ["NEC"] Contention 3" ("Motion"), filed by Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (collectively, "Entergy" or "Applicant") on December 2, 2005. For the reasons set forth below and in the attached Affidavit of Richard B. Ennis, Steven R. Jones, Robert L. Pettis, Jr., and George Thomas ("Staff Affidavit"), the Staff submits that each of the issues raised by NEC in Contention 3 and its supporting basis statements have been resolved, and there is no genuine dispute of material fact with respect to this contention. Accordingly, inasmuch as these issues have been resolved, the Applicant is entitled to a decision in its favor on this contention as a matter of law. The Staff therefore supports the Applicant's Motion and recommends that it be granted.

BACKGROUND

By letter dated September 10, 2003, the Applicant applied for an amendment to the operating license for the Vermont Yankee Nuclear Power Station ("VYNPS").¹ The proposal sought to amend the VYNPS operating license, by increasing the maximum authorized power level by twenty percent, from 1593 megawatts thermal ("MWt") to 1912 MWt. A power increase of this nature is known as an "extended power uprate" ("EPU"). The proposed amendment would also change the VYNPS technical specifications to provide for implementing uprated power operation. On July 1, 2004, the NRC published a notice of consideration of issuance of the proposed amendment and opportunity for a hearing in the *Federal Register*.²

In its application, the Applicant sought an exception to performing post-uprate "large transient testing" on a plant-specific basis. The phrase "large transient testing" refers to the two types of transient testing described as "large transient testing" in the General Electric Company ("GE") Licensing Topical Report for Constant Pressure Power Uprate Safety Analysis, NEDC-33004P-A, Rev. 4 (July 2003) ("GE Topical Report").³ See Application, Att. 7. Specifically, the Applicant requested approval for its plan to not conduct post-uprate Main Steam Isolation Valve Closure testing and Generator Load Reject testing – i.e., the two types of transient testing specified in the GE Topical Report. In doing so, the Applicant addressed factors identified by the NRC Staff in Standard Review Plan ("SRP") Section 14.2.1 ("Generic Guidelines for

¹ See Letter from J.K. Thayer, Entergy, to the NRC Document Control Desk, "Vermont Yankee Nuclear Power Station, License No. DPR-28 (Docket No. 50-271), Technical Specification Proposed Change No. 263, Extended Power Uprate," dated September 10, 2003 ("Application").

² See Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.; Notice of Consideration of Issuance of Amendment to Facility Operating License and Opportunity for a Hearing, 69 Fed. Reg. 39,976 (July 1, 2004).

³ The NRC approved the GE Topical Report on March 31, 2003, but required that justifications for not conducting large transient testing be submitted on a plant-specific basis. See Letter from William H. Ruland (NRC) to James F. Klapproth (GE), "Review of GE Nuclear Energy Licensing Topical Report, NEDC-33004P, Revision 3, "Constant Pressure Power Uprate," dated March 31, 2003 (Proprietary).

Extended Power Uprate Testing Programs”) for justification of elimination of power-ascension tests.⁴ See Declaration of Craig J. Nichols (“Nichols Declaration”), Exhibit 2.

On August 30, 2004, NEC filed its Request for Hearing on the Application.⁵ NEC proposed seven contentions, including the contention currently at issue, NEC Contention 3. This contention disputed the Applicant’s plan not to conduct large transient testing, and stated as follows:

The license amendment should not be approved at this time or until it is agreed by all parties that Large Transient Testing will be a prerequisite to Extended Power Uprate per the staff position on Duane Arnold Energy Center.

Without adequate characterization, there can be no assurance that the license amendment will adequately safeguard public health by demonstrating compliance with 10 C.F.R. Part 20 standards.

Request for Hearing at 11.⁶ The Applicant and the NRC Staff both opposed the admission of this contention.

The basis for NEC Contention 3 was provided in an attached declaration from Arnold Gundersen (“Gundersen Declaration”), a nuclear engineer and independent consultant on nuclear safety and engineering issues, and one of NEC’s designated “nuclear power plant experts.”⁷ Mr. Gundersen’s principal argument was that the Applicant’s plans not to conduct large transient testing at EPU conditions could not “be justified as good engineering practice

⁴ See NUREG-800, Standard Review Plan 14.2.1, § III.C. It should be noted that standard review plans are prepared for the guidance of the Office of Nuclear Reactor Regulation staff responsible for the review of applications to construct and operate nuclear power plants. These documents are made available to the public as part of the Commission’s policy to inform the nuclear industry and the general public of regulatory procedures and policies. Standard review plans are not substitutes for regulatory guides or the Commission’s regulations and compliance with them is not required.

⁵ See “New England Coalition’s Request for Hearing, Demonstration of Standing, Discussion of Scope of Proceeding and Contentions,” dated August 30, 2004 (“Request for Hearing”).

⁶ See “Entergy’s Answer to New England Coalition’s Request for Hearing,” dated September 29, 2004; “NRC Staff Answer to Request for Hearing of New England Coalition,” dated September 29, 2005.

⁷ See also, Request for Hearing, Exhibit D, at 3-5.

nor is it in accord with staff positions interpreting NRC regulation.” Gundersen Decl. at 3. Without providing any specific information supporting his claims, Mr. Gundersen disputed three of the Applicant’s justifications for not performing large transient testing. Mr. Gundersen asserted, in essence, (1) that the Applicant’s citation of operational experience in the industry failed to demonstrate that post-uprate large transient testing was not necessary;⁸ (2) that VYNPS’s own experience with full power transients at pre-uprate conditions was insufficient to conclude there will be adequate performance at post-uprate conditions; and (3) that VYNPS’s pre-uprate testing of components would not accurately predict the performance of those components at post-uprate conditions. Gundersen Decl. at 4-5.

On November 22, 2004, the Licensing Board admitted NEC as a party to the proceeding and ruled that NEC Contention 3 was admissible, as restated and clarified in the Board’s decision.⁹ The Staff’s review of the EPU Application proceeded, in which the Staff, *inter alia*, issued a number of requests for additional information (“RAIs”) to the Applicant; and the Applicant submitted numerous supplements to its Application, in which it, *inter alia*, responded to the Staff’s RAIs.

The Staff issued its Draft Safety Evaluation (“Draft SE”) concerning the proposed amendment to the ACRS on October 21, 2005 (Rev. 0), and to the public on November 2, 2005

⁸ As part of the bases for his concern, Mr. Gundersen cited a May 9, 2001, NRC Staff request for additional information issued for the Duane Arnold nuclear plant, which stated, in part, that Entergy had “cited uprated tests performed at Hatch as an example of industry experience that indicate Duane Arnold could also withstand isolation transients from high power. For the Hatch Unit 1 and 2 uprate tests, compare the units [sic] actual response with the applicable transient analyses. Discuss how this industry experience demonstrates that for [the] Duane Arnold power uprate, the cycle-specific limiting transient analyses would provide equivalent protection compared to startup tests.” See Letter from G. Van Middlesworth, Nuclear Management Company, LLC, to NRC Document Control Desk, “Response to [RAI] to Technical Specification Change Request TSCR-042 - Extended Power Uprate,” dated June 11, 2001 (ADAMS accession number ML011690258).

⁹ See Licensing Board Memorandum and Order (Ruling on Standing, Contentions, and State Reservation of Rights), dated November 22, 2004. As restated by the Board, NEC Contention 3 reads: “The license amendment should not be approved unless Large Transient Testing is a condition of the Extended Power Uprate.” See Order, Appendix 1.

(Rev. 1). Therein, the Staff concluded, *inter alia*, that the Applicant's justifications for not conducting large transient testing were adequate. See Draft SE, Rev. 1, § 2.12.¹⁰

On December 2, 2005, the Applicant filed its current Motion seeking summary disposition of NEC's Contention 3, together with a "Statement of Material Facts Regarding NEC Contention 3 on Which No Genuine Dispute Exists," and the Declaration of Craig J. Nichols. Attached as exhibits to the Nichols Declaration were a number of documents supporting the Applicant's view that the justifications it had provided for an exception to large transient testing were well-supported. These documents include reports concerning industry experience with post-uprate large transients (see Nichols Decl., Exhibits 6-13 and 15), and reports on site-specific experience with large transients at pre-uprate power (*id.*, Exhibits 16-20).

As summarized by the Applicant, NEC Contention 3 is based upon three erroneous factual claims: (1) "Operational experience does not provide adequate support for the exception being sought;" (2) "VY's successful experience with full power transients at 100% level does not demonstrate the performance at 120% level;" and (3) "Component testing does not obviate the need for full power testing of the transients." Motion at 5.

The Staff has reviewed the Applicant's Motion, its Statement of Material Facts, the Nichols Declaration, and the documents attached thereto. As set forth below and in the attached Affidavit, the Staff agrees with the Applicant that there is no genuine dispute of material fact with respect to NEC Contention 3, and that each of the issues raised in NEC Contention 3 have been resolved. Accordingly, the Staff supports the Applicant's Motion and recommends that it be granted.

¹⁰ The Applicant's Motion describes various considerations which support a conclusion that it had adequately justified its request to not conduct "large transient testing" here. See Staff Affidavit, *passim*. In contrast, the Staff has concluded that a license condition regarding other post-uprate transient testing, involving the Condensate and Feedwater System ("CFS") was appropriate. See Draft SE, Rev. 1, § 2.5.4.4, at 91.

DISCUSSION

A. Legal Standards Governing Motions for Summary Disposition.

A moving party is entitled to summary disposition of a contention as a matter of law if the filings in the proceeding, together with the statements of the parties and the affidavits, demonstrate that there is no genuine issue as to any material fact. See 10 C.F.R. §§ 2.1205 and 2.710(d)(2);¹¹ see also *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-01-11, 53 NRC 370, 384 (2001); *Advanced Medical Sys., Inc.* (One Factory Row, Geneva, Ohio), CLI-93-22, 38 NRC 98, 102-03 (1993).

The party seeking summary disposition bears the burden of demonstrating the lack of a genuine issue of material fact; further, the evidence submitted must be construed in favor of the non-moving party. See *Sequoyah Fuels Corp. & Gen. Atomics Corp.* (Gore, Oklahoma Site Decontamination and Decommissioning Funding), LBP-94-17, 39 NRC 359, 361, *aff'd*, CLI-94-11, 40 NRC 55 (1994). For a finding that there is a genuine issue of material fact, "the factual record, considered in its entirety, must be enough in doubt so that there is a reason to hold a hearing to resolve the issue." *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Units 1 & 2), LBP-83-46, 18 NRC 218, 223 (1983).

B. Summary Disposition of NEC Contention 3 Is Appropriate.

The NRC Staff agrees with the Applicant that there exists no genuine issue of material fact with respect to NEC Contention 3. As the Staff indicated in its Answer to NEC's Request for Hearing, the factual bases for the contention amount to no more than unsupported

¹¹ Pursuant to 10 C.F.R. § 1205(c), "[i]n ruling on motions for summary disposition, the presiding officer shall apply the standards for summary disposition set forth in subpart G of this part [10 C.F.R. § 2.710(d)(2)]."

assertions, and an irrelevant NRC Staff RAI for another plant.¹² Mr. Gundersen's Declaration did not cite, in a single instance, any data that contradicts the information proffered by the Applicant. "[G]eneral objections...and...bald assertions ... are insufficient to show a concrete, material dispute of fact." *See Advanced Medical Sys., Inc.* (One Factory Row, Geneva, Ohio), CLI-94-6, 39 NRC 285, 307 (1994). NEC's assertions amount to no more than "fanciful speculation" without any basis, and do not create a genuine issue of fact appropriate for hearing. *See id.* at 310, n.46.

As noted above, the Draft SE concluded that the Applicant had provided adequate justification for not conducting post-uprate large transient testing. *See* Draft SE, Rev. 1, at § 2.12. The Staff's conclusion was based upon its review of the Applicant's original submission, as well as supplemental information provided by the Applicant. The Staff reviewed, for instance, the Applicant's citation of industry experience at ten domestic BWRs operating at EPU conditions, as well as large transient testing at a foreign BWR. *See id.* at 265-66. The Staff also reviewed data submitted by the Applicant regarding VYNPS's own operational experience with generator load rejections at pre-uprate conditions, and the applicability of this data to such transients at post-uprate conditions. *See id.* at 266. Finally, the Staff considered the Applicant's submissions concerning component testing, and its applicability to post-uprate conditions. *See id.* at 267. In light of this data, the Staff concluded that:

in justifying test eliminations or deviations ... the licensee adequately addressed factors which included previous industry operating experience at recently uprated BWRs, plant response to actual turbine and generator trip tests for the KKL plant, and experience gained from actual plant transients experienced in 1991 at the VYNPS. From the EPU experience referenced by the licensee, it

¹² *See* "NRC Staff Answer to Request for Hearing of New England Coalition," dated September 29, 2005, at 14-16. As the Staff stated therein, the Duane Arnold EPU RAI upon which Mr. Gundersen relies in his Declaration is not relevant to these proceedings. Further, the Gunderson Declaration incorrectly characterized the Staff's RAI as a "decision"; the RAI did not present a Staff decision, and any determination to require such testing would be made on a plant-specific basis, in light of the information and/or analyses presented in support of the application.

can be concluded that large transients, either planned or unplanned, have not provided any significant new information about transient modeling or actual plant response.

See id. at 267.

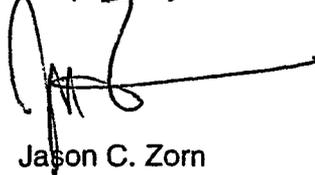
The Staff has also carefully reviewed the Statement of Material Facts submitted in support of the Applicant's Motion, and the statements contained in the Nichols Declaration. On the basis of its review, the Staff has concluded that the Applicant's Statement of Material Facts is correct, except in certain limited respects, as to which the Staff has proposed certain modifications and clarifications. *See Staff Affidavit*, at ¶¶ 7-18. None of these proposed modifications, clarifications and exceptions, however, affect the Staff's conclusion that no genuine dispute of material fact exists with respect to this contention, and summary disposition of this contention is appropriate. *See Staff Affidavit*, ¶ 19.

For these reasons, as more fully set forth in the attached Affidavit, the Staff submits that there does not exist any genuine issue of material fact with respect to NEC Contention 3, and the Applicant is entitled to a decision in its favor on this contention as a matter of law.

CONCLUSION

For the reasons set forth above, as more fully set forth in the attached Affidavit of Richard B. Ennis, Steven R. Jones, Robert L. Pettis, Jr., and George Thomas, the Staff submits that the Applicant is entitled to a decision in its favor as a matter of law, on NEC Contention 3.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jason C. Zorn', with a long horizontal line extending to the right.

Jason C. Zorn
Sherwin E. Turk
Counsel for NRC Staff

Dated at Rockville, Maryland
this 22nd day of December 2005

December 21, 2005

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
ENTERGY NUCLEAR VERMONT YANKEE,)	Docket No. 50-271-OLA
LLC and ENTERGY NUCLEAR)	
OPERATIONS, INC.)	ASLBP No. 04-832-02-OLA
)	
(Vermont Yankee Nuclear Power Station))	

AFFIDAVIT OF RICHARD B. ENNIS, STEVEN R. JONES,
ROBERT L. PETTIS, JR., AND GEORGE THOMAS

COUNTY OF MONTGOMERY)	
)	SS:
STATE OF MARYLAND)	

Richard B. Ennis (RBE), Steven R. Jones (SRJ), Robert L. Pettis, Jr. (RLP), and George Thomas (GT), being duly sworn, do hereby state as follows:¹

1(a). (RBE) I am employed by the U.S. Nuclear Regulatory Commission ("NRC") as a Senior Project Manager in the Division of Operating Reactor Licensing in the Office of Nuclear Reactor Regulation ("NRR"). Since December 2003, I have served as the Senior Project Manager for the NRC Staff ("Staff"), concerning the proposed extended power uprate ("EPU") license amendment for the Vermont Yankee Nuclear Power Station ("Vermont Yankee" or "VYNPS"). A statement of my professional qualifications is attached hereto.

1(b). (SRJ) I am employed by the U.S. Nuclear Regulatory Commission as Acting Branch Chief and Senior Reactor Systems Engineer, in the Division of Systems Safety, Office of Nuclear Reactor Regulation. A statement of my professional qualifications is attached hereto.

¹ In this Affidavit, the sponsors of each numbered paragraph are identified by their initials; no such designation is provided for paragraphs which are sponsored by all Affiants.

1(c). (RLP) I am employed by the NRC as a Senior Reactor Engineer in the Division of Engineering in the Office of Nuclear Reactor Regulation. As part of my responsibilities, I have been responsible for evaluating the power ascension and testing plan section of the Vermont Yankee EPU application. A statement of my professional qualifications is attached hereto.

1(d). (GT) I am employed by the U.S. Nuclear Regulatory Commission as a Reactor Engineer (Nuclear) in the Division of Safety Systems in the Office of Nuclear Reactor Regulation. In this capacity, I have served as the Reactor Systems Reviewer for transients related to the proposed extended power uprate for the Vermont Yankee Nuclear Power Station since 2003. A statement of my professional qualifications is attached hereto.

2. This Affidavit is prepared in response to "Entergy's Motion For Summary Disposition of New England Coalition Contention 3" ("Motion"), filed by Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear operations, Inc. (collectively, "Entergy" or "Applicant") on December 2, 2005, and the "Statement of Material Facts Regarding NEC Contention 3 on Which No Genuine Dispute Exists" ("Statement of Material Facts") attached thereto.

3(a). (RBE) As part of my official responsibilities as the Senior Project Manager for the Staff's review of the proposed Vermont Yankee EPU, I serve as the principal point of contact in NRR for activities related to the Vermont Yankee EPU application. In addition, I coordinated the Staff's evaluation of the Vermont Yankee EPU application, and assisted in preparation of the Staff's draft "Safety Evaluation" for that application ("Draft SE"), which was issued to the Advisory Committee on Reactor Safeguards ("ACRS") in October 2005 (Revision 0), and to the public in November 2005 (Revision 1). In addition, I am currently assisting in the supervision and preparation of the Staff's Final Safety Evaluation related to the Vermont Yankee EPU application.

3(b). (SRJ) As part of my official responsibilities, I have supervised the Staff's safety review of mechanical systems other than those directly associated with the nuclear steam supply system, which are referred to as "Balance-of-Plant" systems. In this capacity, I supervised the

Staff's technical review of Balance-of-Plant systems related to the Vermont Yankee EPU application, which includes the condensate, feedwater, main steam, main turbine, and turbine bypass systems that are involved in the plant's response to transients. This has included verifying the technical completeness and thoroughness of the Applicant's responses to Staff requests for additional information and the Staff's technical evaluation of the effects of the proposed EPU on Balance-of-Plant systems, as described in the Staff's Draft SE for the Vermont Yankee EPU application, including Draft SE Sections 2.5 and 2.12.

3(c). (RLP) As part of my official responsibilities, I have been responsible for the coordination of the NRC Staff's review of the overall power uprate testing program of the proposed VYNPS EPU application, including preparation of Section 2.12 of the Staff's Draft SE.

3(d). (GT) As part of my official responsibilities, I conducted the reactor systems review of the transient analyses submitted by the Applicant for the VYNPS EPU, including preparation of Section 2.8.5, "Accident and Transient Analyses," of the Staff's Draft SE for the Vermont Yankee EPU application.

4. NEC Contention 3, as clarified and restated by the Atomic Safety and Licensing Board in its Memorandum and Order of November 22, 2004, alleges that: "[t]he license amendment should not be approved unless Large Transient Testing is a condition of the Extended Power Uprate." We are familiar with the contention and the bases submitted in support thereof, presented in NEC's request for hearing and contentions dated August 30, 2004, as further discussed in the Licensing Board's Order of November 22, 2004.

5. The issue of "Large Transient Testing", raised in NEC Contention 3, was considered and addressed in the Staff's Draft SE. On the basis of its evaluation, as set forth in the Draft SE, the Staff has concluded that there is no need for Large Transient Testing at Vermont Yankee in connection with the EPU application, contrary to the assertions in NEC Contention 3. See Draft

SE § 2.12, at 267. The Draft SE's treatment of the issues raised in NEC Contention 3 are more fully described in the Staff's response to the Applicant's Motion, attached hereto.

6. We have reviewed the Applicant's Motion and the Statement of Material Facts attached thereto, in which Entergy seeks summary disposition of New England Coalition ("NEC") Contention 3. Specifically, Material Fact Nos. 1, 2, 10, 11, 18, 37, and 38 were reviewed by Richard B. Ennis; Material Fact Nos. 15-17, 19, 22, and 31-36 were reviewed by Steven R. Jones; Material Fact Nos. 3-10, 20-22, 24-28, 30, and 36 were reviewed by Robert L. Pettis, Jr.; and Material Fact Nos. 12-17, 19, 22, 23, 29, 33, 34, and 39-41 were reviewed by George Thomas. In addition, we have collectively discussed each of the Material Facts set forth by the Applicant and our determinations with respect thereto, as described in this Affidavit.

7. In addition, as relevant to our respective areas of responsibility, we have reviewed relevant portions of the Applicant's EPU application and supplements thereto; the Updated Final Safety Analysis Report ("FSAR"); the VYNPS Technical Specifications ("TS"); NEC Contention 3; the Licensing Board's Order of November 22, 2004; and the Staff's Draft SE. On the basis of our review, we are satisfied that the Statement of Material Facts attached to the Applicant's Motion is correct, except as specifically noted below. Specifically, we believe that the Material Facts set forth by the Applicant are correct, except that Material Fact Nos. 15, 18, 19, 22, 27, and 38 should be modified as set forth below;² and we take no position with respect to Material Fact Nos. 21, 25, and 26.

8. (SRJ, GT) Material Fact No. 15 should be modified to read:

The transient analyses for VY model both the performance of the secondary side of the plant and any relevant potential interactions between primary and secondary systems in a transient.

² Proposed modifications to the Applicant's Statement of Material Fact are shown in the following paragraphs by underlining (additions) and strike-out (deletions).

9. (RBE) Material Fact No. 18 should be modified to read:

As part of the EPU analyses, Entergy evaluated the increase in main steam flow resulting from EPU operation and its effect on the loadings on piping and pipe supports during large transients. Entergy's analyses determined that the loadings on piping and pipe supports during large transients at EPU power levels are within acceptable bounds. Entergy's evaluation of the performance of piping and pipe supports was reviewed and accepted by the NRC Staff. Draft SER ~~§ 2.2.1 at 29~~ § 2.2.2 at 29.

10. (SRJ, GT) Material Fact No. 19 should be modified to read:

Since the analyses assume operational configurations and component/system failures that bound the transients that would occur during actual EPU operations and since no changes will be made to the plant that could be reasonably anticipated to introduce new thermal-hydraulic phenomena or give rise to any new system interactions during the transients, there is every reason to anticipate that the transient analyses ~~will accurately predict~~ bound the plant response to large transient events without need to perform actual LTT.

In this regard, the analyses assume operational configurations and component/ system failures that bound the transients that would occur during actual EPU operations. The computer code "ODYN", which was used for the VY EPU transient analyses, was validated with a comparison to actual plant transient data from the Peach Bottom nuclear plant. Due to the "bounding nature" of the ODYN analyses, the code can not "accurately predict" the plant response to a specific event, but the code does provide a reliable means of evaluating the adequacy of system response to transients, through its use of bounding analyses.

11. (SRJ, RLP, GT) Material Fact No. 22 should be modified to read:

22. In every instance in which unplanned large transient power levels have been experienced at those four plants and an analysis of the scenario involved in those events existed, the plant's response was similar to ~~matched~~ the analytical predictions and exhibited no new phenomena.

In this regard, the Applicant's statement appears to be generally correct, with the noted modifications, as described below.

12. (SRJ, RLP, GT) First, Material Fact No. 22 states that it is based on Paragraph 22 of the Nichols Declaration attached to the Applicant's Motion. The Staff has modified the language in Material Fact No. 22 by substituting the words "was similar to" in lieu of the word "matched," to more correctly reflect the actual language of Paragraph 22 of the Nichols Declaration.

13. (SRJ, RLP, GT) Second, with the modification described above, Material Fact No. 22 correctly states that at these four plants (*i.e.*, Hatch Units 1 and 2, Brunswick Unit 2, and Dresden Unit 3), the plant's response to unplanned large transients was similar to the analytical predictions; this is correct, however, only for those transients where the scenario had been analyzed before the transient. Thus, the scenario involved in one transient at Dresden, described in Dresden 3 LER 2004-002-00 (Attachment 12 to Entergy's Motion), had not been analyzed before the transient occurred, and thus there is no way to compare the plant's response to any analyzed prediction.³ This LER is discussed in Supplement 23 to the Vermont Yankee EPU application, dated February 24, 2005 (Attachment 1 at p. 5 of 48). The Staff has modified Material Fact No. 22 accordingly, by adding the words "and an analysis of the scenario involved in those events existed".

14. (SRJ, RLP, GT) The lack of any pre-existing analysis for the Dresden transient, discussed in Paragraph 13 and note 3 above, does not detract from the conclusion in Material Fact No. 22 that analyses have provided good predictions of actual plant response to a transient. Analyses cannot explicitly consider every scenario that could occur in a transient, nor can testing

³ (SRJ, RLP, GT) The Dresden plant, Unit 3, reported a post-EPU transient which had not been predicted in the plant's previous analyses, as discussed in Dresden 3 LER 2004-002-00, "Unit 3 Automatic Scram Due to Main Turbine Low Oil Pressure Trip and Subsequent Discovery of Inoperability of the Units 2 and 3 High Pressure Coolant Injection Systems" (Attachment 12 to the Declaration of Craig J. Nichols). This licensee event report ("LER") described a post-scram reactor water level transient that filled the steam supply line to the safety-related High Pressure Coolant Injection ("HPCI") turbine, which supplies makeup water to the reactor. According to the LER, this occurred due to the feedwater level control system's ("FWLCS") low margin to accommodate changes to the post-scram vessel level response. The feedwater regulating valves did not close fast enough, which resulted in overfilling of the reactor vessel. As a result, the "A" and "C" Reactor Feedwater Pumps tripped on high water level, and water entered the HPCI steam supply line. The licensee had not evaluated the post-scram reactor water level response with three feedwater pumps in service to support its EPU; the LER explained that no such analysis was performed because no analytical model was available that could predict the dynamic interaction between the FWLCS and other factors affecting the reactor vessel water level.

address every scenario that may occur. Rather, bounding analyses should be presented which evaluate a range of conditions which may reasonably be anticipated to occur. The Staff has previously determined, on a generic basis, that the ODYN Code, relied upon by the Applicant here, provides acceptable bounding analyses.

15. (SRJ, RLP, GT) Further, in reviewing the Vermont Yankee EPU application, the Staff requested that the Applicant evaluate the applicability of the Dresden 3 FWLCS transient at its facility, and describe how margins to reactor vessel overfill would be maintained. Based on the Staff's review of the Dresden event and Entergy's response to the Staff's request, the Staff has concluded that there is reasonable assurance that the transient which occurred at Dresden would not result in a reactor overfill at Vermont Yankee, given (a) the additional margin provided by a higher steam line connection at Vermont Yankee (the steam line to the turbine-driven pump was mounted unusually low in the reactor vessel at Dresden, as compared to other BWR units with similar turbine-driven pumps), (b) the procedures in place for operators to rapidly reduce post-scrum feedwater flow, and (c) the Applicant's proposed testing during power ascension, to demonstrate acceptable performance of the feedwater level control system. Thus, the lack of any analysis of this scenario in the ODYN Code does not present a concern with respect to the Vermont Yankee EPU application, and does not provide a reason to require Large Transient Testing at Vermont Yankee.

16. (RLP) Material Fact No. 27 should be modified to read:

In the draft SER, the NRC Staff concluded that the experience at the U. S. plants that have undergone large unplanned transients shows that "the behavior of the primary safety systems was as expected indicating that the analytical models being used are capable of modeling plant behavior at EPU conditions." Draft SER at 266.

17. (RBE) Material Fact No. 38 should be modified to read:

38. MSIVs are tested quarterly. The safety relief valves and spring safety valves are tested once every operating cycle. These valves

are required to perform in accordance with the design during large transients; their periodic testing assures that their performance during large transients will be acceptable. Likewise, the reactor protection system instrumentation that is relied on to mitigate large transients (i.e., main steam isolation valve closure, turbine control valve fast closure, and turbine stop valve closure) is tested quarterly, assuring it will carry out its design function in the event of a large transient.

This modification to Material Fact No. 38 is proposed in order to clarify that certain other testing of the reactor protection system instrumentation, unrelated to the issued discussed herein, is conducted on a periodic basis other than "quarterly".

18. In addition, we lack sufficient information to agree or disagree with certain statements contained in the Applicant's Statement of Material Facts, concerning foreign reactor operating experience or the analytical tools used to predict performance at those plants. Accordingly, we take no position with respect to Material Fact Nos. 21, 25 and 26, pertaining to the Muehleberg and Liebstadt nuclear reactors. In this regard, we take no position with respect to Material Fact No. 21, in that we have not reviewed any information as to whether those plants have experienced any unplanned large transients from uprated power levels. In addition, we take no position with respect to Material Fact No. 25, in that we have not reviewed sufficient information to determine whether the large transient test results at Liebstadt "matched the analytical predictions and identified no anomalous plant behavior." Finally, we take no position with respect to Material Fact No. 26, in that we have not reviewed any information regarding the analytical tools used to predict the performance at that plant.

19. Notwithstanding the modifications, clarifications and exceptions to the Applicant's Statement of Material Facts set forth above, we are satisfied that the concerns raised in NEC Contention 3 have been addressed satisfactorily, and no genuine dispute of material fact exists with respect to the matters raised in this contention.

20. We hereby certify that the foregoing is true and correct to the best of our knowledge, information and belief.

Richard B. Ennis
Richard B. Ennis

Sworn to before me this
21st day of December 2005

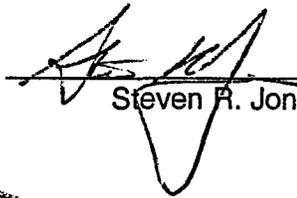
Circe E. Martin
Notary Public



My Commission expires: March 1, 2007

CIRCE E. MARTIN
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires March 1, 2007

20. We hereby certify that the foregoing is true and correct to the best of our knowledge, information and belief.



Steven R. Jones

Sworn to before me this
21st day of December 2005



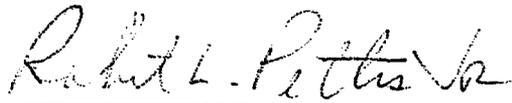
Notary Public



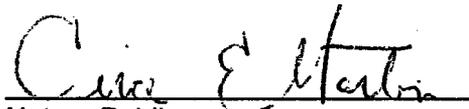
My Commission expires:

CIRCE E. MARTIN
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires March 1, 2007

20. We hereby certify that the foregoing is true and correct to the best of our knowledge, information and belief.


Robert L. Pettis, Jr.

Sworn to before me this
21st day of December 2005


Notary Public

My Commission expires: March 1, 2007

CIRCE E. MARTIN
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires March 1, 2007

CIRCE E. MARTIN
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires March 1, 2007

20. We hereby certify that the foregoing is true and correct to the best of our knowledge, information and belief.

George Thomas
George Thomas

Sworn to before me this
21st day of December 2005

Circe E. Martin
Notary Public



My Commission expires: March 1, 2007

CIRCE E. MARTIN
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires March 1, 2007

RICHARD B. ENNIS
Statement of Professional Qualifications

CURRENT POSITION:

Senior Project Manager Division of Operating Reactor Licensing, Office of Nuclear
Reactor Regulation, U.S. Nuclear Regulatory Commission,
Rockville, MD

EDUCATION:

B.S. in Electrical Engineering, Bucknell University, 1977

SUMMARY:

Over 28 years engineering experience in the commercial nuclear power industry. Significant experience in the following areas:

- Project Management
- Technical Writing
- Design & Licensing Basis Documentation
- License Renewal
- Nuclear Facilities Audits and Design Verifications
- Design Modifications
- Instrument Setpoint and Loop Uncertainty Calculations & Methodologies
- Software Development, Quality Assurance, and Verification & Validation

EXPERIENCE:

U.S. Nuclear Regulatory Commission, Project Manager, 1998 - Present

Project Manager in the Office of Nuclear Reactor Regulation. Serve as headquarters focal point for technical review coordination, information and communication on issues concerning assigned nuclear power plants. Responsibilities include coordination, review, and preparation of safety evaluations, environmental evaluations and other documentation to support the licensing activities for the plant. Also serve as lead project manager for special projects. Assignments have included the following:

- Project Manager, Vermont Yankee Nuclear Power Station (12/03 - Present)
- Project Manager, Millstone Nuclear Power Station, Unit 2 (3/02 - 12/03)
- Project Manager, Hope Creek Generating Station (3/98 - 6/00, 11/00 - 3/02, 5/03 - 9/03)
- Lead Project Manager, Steam Generator Action Plan (11/00 - 6/01).

- Lead Project Manager, Indian Point Unit 2 Steam Generator Tube Failure Lessons-Learned Task Group (6/00 - 11/00).

Sciencetech, Inc., Senior Engineer, 1997 - 1998

Worked as a contractor for Baltimore Gas and Electric Company in the Calvert Cliffs Nuclear Power Plant (CCNPP) Life Cycle Management Group. Prepared technical reports for the CCNPP license renewal application to the NRC in accordance with 10 C.F.R. Part 54. Reports prepared for the Radiation Monitoring System, Chemical and Volume Control System, Saltwater System, Electrical Cables Commodity Evaluation, Instrument Lines Commodity Evaluation, Intake Structure, and Turbine Building.

TENERA, Inc., Project Manager/Senior Engineer, 1988 - 1996

Responsibilities included technical consulting, project management, budget and schedule control, marketing and business development, and preparation of proposals. Also served as corporate Configuration Control Manager (CCM) for development of computer software applications. CCM responsibilities included ensuring that software life cycle activities were implemented in accordance with quality assurance (QA) requirements. Managed and provided engineering support for numerous projects as described below.

- Commonwealth Edison Company - Managed and performed a license conformance review at the LaSalle plant that included developing plant licensing and design basis requirements from the UFSAR and reviewing these requirements against design documents and procedures (e.g., operations, maintenance, engineering) to ensure that the plant was operating within its design and licensing basis.
- Commonwealth Edison Company - Performed design basis verification for the Auxiliary Power System for Zion Station Units 1 and 2, and Standby Gas Treatment System for Dresden Station.
- Nebraska Public Power District - Authored the Reactor Protection System (RPS), Standby Liquid Control System, and Neutron Monitoring System design basis documents for Cooper Nuclear Station. Also performed design basis verification for the Reactor Protection, DC Electrical, Diesel Generator, Standby Liquid Control, Neutron Monitoring, and Control Rod Drive systems.
- Northern States Power Company - Performed reactor trip instrument setpoint calculations for Prairie Island Units 1 and 2.
- Northeast Utilities - Authored the RPS Equipment Coefficients Methodology for Millstone Unit 2. Also performed fuel reload analysis for fuel cycle 13.

- New York Power Authority, Consolidated Edison Company - Authored engineering evaluations and documents related to Electrical Separation for the FitzPatrick and Indian Point Unit 2 nuclear plants. Work included preparation of Electrical Separation Design Criteria documents, justifications for cable separation anomalies, review of cable and raceway installation standards, fault current analysis, and preparation of a training package.
- Philadelphia Electric Company - Authored the Regulatory Guide 1.97 Post-Accident Monitoring design basis documents for Limerick Generating Station and Peach Bottom Atomic Station.
- Florida Power and Light Company - Co-authored the RPS Equipment Coefficients Methodology for St. Lucie Unit 1. Also performed calculations to verify the methodology and performed fuel reload analysis for fuel cycles 12, 13, and 14.
- Portland General Electric Company - Performed audit of the setpoint control program for Trojan Nuclear Plant.
- Washington Public Power Supply System - Performed system review (mini-SSFI) of Process Radiation Monitoring System for WNP-2.
- Southern California Edison Company, Arizona Public Service Company, Baltimore Gas and Electric Company, Northern States Power Company, Wisconsin Public Service Corporation - Developed QA computer software applications for San Onofre Nuclear Generating Station, Palo Verde Nuclear Generating Station, Calvert Cliffs Nuclear Power Plant, Prairie Island Nuclear Generating Station, and Kewaunee Nuclear Power Plant. Software packages included instrument-related databases and reports, setpoint calculations, instrument calibration scaling, head correction calculations, and insulation resistance calculations. Work included full life cycle development of QA Verified and Validated (V&V) software applications in IBM PC DOS and Windows environments.
- Consolidated Edison Company - Prepared design modification package for Emergency Diesel Generator Building HVAC System for Indian Point Unit 2.
- System Energy Resources, Inc. - Performed FSAR review and updates for Grand Gulf Nuclear Power Station.

Bechtel Power Corporation, 1977 - 1988

Assignments were as follows:

- Instrument and Controls Group Leader and Electrical/Control Systems Deputy Supervisor, Davis-Besse Nuclear Power Station, Gaithersburg, MD (4/85 - 11/88). Supervised Electrical/Control Systems group (approximately 40 engineers). Coordinated and reviewed design work including revision and issue of the following types of documents:

specifications, control board layouts, loop diagrams, instrument installation details, tubing isometrics, instrument index, setpoint index, P&ID's, electrical schematics, connection diagrams, safety evaluations and conceptual designs. Responsible for design and specification of instrumentation and controls equipment. Responsible for preparing schedules, man-hour estimates, and staffing requirements.

- Results Engineering Group Leader, Wolf Creek Generating Station, New Strawn, KS (1/83 - 4/85). Supervised instrument and controls engineers in Results Engineering group (approximately 10 engineers). Coordinated all work related to generation of Wolf Creek instrument calibration documents. Reviewed instrument calibration data and prepared setpoint calculations. Generated startup field reports and processed instrument change requests. Reviewed startup test procedures and test results and wrote engineering procedures. Coordinated with instrument and controls maintenance group and startup group to support component and system tests.
- Instrument and Controls Group Leader, Grand Gulf Nuclear Power Station, Gaithersburg, MD (1/81 - 1/83). Supervised instrument and controls engineers in systems group (approximately 6 engineers). Coordinated and reviewed design work including logic diagram, loop diagram, and P&ID revisions; instrument calibration data; and design changes to comply with new licensing requirements.
- Instrument and Controls Engineer, Grand Gulf Nuclear Power Station, Gaithersburg, MD (7/79 - 1/81). Designed logic, loop and level settings diagrams. Prepared instrument calibration data and wrote instrument purchase specifications and evaluated bids. Prepared stress and seismic calculations and resolved startup field reports and field change requests.
- Instrument and Controls Engineer, Davis-Besse Nuclear Power Station, Gaithersburg, MD (7/77 - 7/79). Designed logic diagrams and prepared control valve specifications. Completed valve data sheets and ran computer program for instrument index updating.

Steven R. Jones

Statement of Professional Qualifications

EXPERIENCE:

Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission

Acting Chief, Balance of Plant Branch:

November 2004 - Present

Supervised the safety review of mechanical systems other than those directly associated with the nuclear steam supply system, which are referred to as "Balance-of-Plant" systems. In this capacity, I have supervised the NRC Staff's technical review of Balance-of-Plant systems review activities related to operating reactor license amendment requests (e.g., power uprate license amendment requests), aging management program scope for license renewal, design certification of new reactor designs, and operating experience analysis and resolution of associated generic safety issues.

Senior Reactor Systems Engineer:

August 2001 - Present

Reactor Systems Engineer:

October 1990 - June 1997

Performed evaluations of significant changes in design or operational limits and other technical issues related to secondary safety systems at commercial nuclear power plants, with a focus on service water cooling systems, power conversion systems, compartment transient analysis, spent fuel storage, and control room habitability. Assessed system capability and potential system failure modes. Reviewed system design to verify compliance with NRC regulations, applicable regulatory guidance, and industry standards. Evaluated technical safety issues involving spent fuel cooling and other secondary safety systems, and presented briefs regarding resolution of these issues to NRC senior management, the NRC Chairman, and advisory committees. Evaluated research reports related to secondary safety systems and recommended direction for future research activities.

NRC Region I, U.S. Nuclear Regulatory Commission

Senior Resident Inspector / Resident Inspector:

June 1997 - July 2001

Planned and led implementation of the resident inspection program at Millstone Unit 2 under the revised Reactor Oversight Program. Monitored plant management performance and the conduct of operational, maintenance, and engineering activities at the unit with respect to the maintenance of reactor safety and compliance with NRC regulations. Evaluated the capability of important structures, systems, and components to perform their functions under limiting design conditions, based on mechanical design, fluid dynamics, heat transfer, electrical circuit analysis, control systems, and other technical considerations. Verified that the physical condition, maintenance practices, and operating procedures were consistent with maintaining the reliability of associated structures, systems, and components in performing their design

functions. Used knowledge of risk analysis and the NRC's Significance Determination Process to evaluate several inspection findings involving degraded performance of essential mitigating systems. Analyzed the causes of degraded conditions to develop meaningful assessments of plant management performance and corrective action program effectiveness. Developed written reports to document technical issues and NRC performance assessments.

United States Navy

Nuclear Power Trained Submarine Officer: 1984 - 1989

Responsible for nuclear propulsion plant operations on board nuclear-powered submarine USS Simon Bolivar (SSBN-641). Developed an excellent understanding of design principles and operational characteristics of systems supporting submarine operations and systems associated with naval pressurized water reactors. Utilized principles of system design and operating characteristics to effectively execute the ship's operational mission and ensure safety during maintenance and testing activities. Enforced high standards of safety and workmanship during maintenance and repair periods through frequent inspection.

EDUCATION:

B.S., Marine Engineering, 1984
U. S. Naval Academy, Annapolis, MD

Graduate Studies in Mechanical Engineering, 1992 – 93
University of Maryland, College Park, MD

QUALIFICATIONS AND TRAINING:

Qualified NRC Operations Inspector (PWR), 1998
Qualified Submarine Officer, U. S. Navy, 1989
Qualified Engineering Officer of the Watch/Engineering Duty Officer, U. S. Navy, 1987

Training Courses:

Westinghouse Technology (full series)
Combustion Engineering Technology (cross-training series)
General Electric Technology (short course)
PRA Technology and Regulatory Perspectives (P-111)
Perspectives on Reactor Safety (R-800)
Root Cause/Incident Investigation Workshop (G-205)

Reactor Inspection and Oversight Program (G-200)
PRA Basics for Regulatory Applications (P-105)
Inspecting for Performance (G-303)
Fundamentals of Inspection (G-101)

CERTIFICATES AND LICENSES:

Licensed Professional Engineer (Mechanical): Maryland, 1996

ROBERT L. PETTIS, JR., P.E.
Statement of Professional Qualifications

CURRENT POSITION:

Senior Reactor Engineer
Division of Engineering
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Rockville, MD

EDUCATION:

B.S. in Civil Engineering, Northeastern University, 1975
M.S. in Civil Engineering (Structural Major), Northeastern University, 1977

PROFESSIONAL:

- Registered Professional Engineer (Maryland, California, and Massachusetts).
- Former Part-time Faculty Member, California State University (teaching undergraduate civil and structural engineering courses).

SUMMARY:

Over 30 years engineering experience in the commercial nuclear power industry. Significant experience in the following areas:

- Engineering management
- Technical writing
- License renewal reviews and audits
- Nuclear facilities audits, inspections, and design verifications
- Structural engineering and design
- Software quality assurance, verification and validation
- Extended power uprate reviews
- Professional engineer review of ASME Class I component supports

EXPERIENCE:

U.S. Nuclear Regulatory Commission, Staff Engineer, 1984 - Present

Reactor Engineer/Senior Reactor Engineer in the Office of Nuclear Reactor Regulation (NRR). Initially assigned to the Vendor Inspection Branch of NRR, where I was responsible for leading multi-discipline engineering team inspections at nuclear vendor, NSSS, and licensee facilities. Inspection areas included quality assurance compliance to 10 C.F.R. Part 50, Appendix B, and

10 C.F.R. Part 21; licensee procurement and dedication; inspections in support of allegations; and regional initiated inspection requests. For the past several years, my responsibilities primarily included leading on-site audits of licensee scoping and screening programs in support of license renewal activities; extended power uprate reviews of licensee power ascension and testing programs; and required presentations before ACRS.

As part of my responsibilities, I was also involved with the large transient testing issue in the NRC staff's review of the General Electric (GE) Licensing Topical Reports (LTRs), including review of the Constant Pressure Power Urate (CPPU) LTR report, and I prepared a section of the staff's SE for these submittals. Additional EPU experience was also gained from previous reviews of EPU applications performed prior to the staff's development of a new Standard Review Plan (SRP). I co-authored SRP Section 14.2.1, "Generic Guidelines For Extended Power Urate Testing Programs," which provides staff guidance on evaluating a licensee's EPU application in relation to the original startup testing performed at the plant under review.

These reviews were performed in accordance with the staff-approved GE LTR NEDC-32424P-A, "General Guidelines for General Electric (GE) Boiling Water Reactor (BWR) Extended Power Urate," (known as "ELTR-1"). Section 5.11.9 of ELTR-1, "Power Urate Testing," was the first document to establish the guidelines for large transient testing for GE BWRs. I was also the primary staff presenter to the ACRS for the large transient testing issue associated with the Clinton nuclear power plant's EPU, which utilized the GE CPPU approach, and I presented the staff's draft SE results for the large transient testing issue to the ACRS, at the VYNPS EPU public meeting held in Vermont in November 2005.

ITT Grinnell Corporation, Regional Engineering Manager, 1979 - 1984

Regional Engineering Manager for the Engineered Piping Products Group of ITT Grinnell, located in Huntington Beach, California. Responsible for initial establishment and location of the office, budget, lease negotiating, staffing, and training of over 20 engineers engaged in the preparation of structural pipe support designs for nuclear facilities. Reported to the Vice President of Operations located in headquarters in Providence, RI.

Stone & Webster Engineering Corporation, 1972 - 1977

Performed various assignments within the civil and structural engineering departments of the Boston Design Division while on co-op from Northeastern University and later full-time. Responsibilities included technical drafting, project management, and preparation of engineering calculations for numerous nuclear power plants designed by Stone & Webster.

**GEORGE THOMAS
REACTOR ENGINEER (NUCLEAR)
BWR SYSTEMS BRANCH
DIVISION OF SAFETY SYSTEMS
OFFICE OF NUCLEAR REACTOR REGULATION**

GENERAL BACKGROUND

I have a total of 37 years of nuclear power plant experience related to boiling water reactors (BWRs), of which five years are in reactor operations. My experience has included a broad range of functions related to the design, engineering, testing, operations, and evaluation of nuclear plant systems. I performed construction tests, pre-operational tests and normal operations of the plant while working as an operator at Tarapur, a BWR built by General Electric (GE) and Bechtel in India (1967-1972). I was engaged in the design and engineering of reactor and component systems for a BWR while working with Stone & Webster Engineering Corp (1975-1980). While employed at United Engineers & Constructors (1973-1975), I wrote test procedures and system descriptions for a BWR.

NRC EXPERIENCE

Since 1980, I have served as a senior reviewer in the area of reactor systems for Boiling Water Reactors, in the BWR Systems Branch of the Division of Safety Systems, Office of Nuclear Reactor Regulation (NRR), U.S. Nuclear Regulatory Commission (NRC), in Rockville, MD. This involves reviews and evaluations of operating reactor licensing actions including power uprates, license renewals, and the Advanced Boiling Water Reactor (ABWR) and Economical Simplified Boiling Water Reactor (ESBWR) reviews for design certification. I also perform evaluations of multi-plant licensing actions and generic issues in the BWR Systems Branch's area of responsibility. As part of my duties, I provide expert technical advice, consultation, and recommendations within the BWR Systems Branch's area of review responsibility to other NRR branches, NRC offices, and NRC regional offices.

Among my responsibilities at the NRC, I was the lead reviewer for the extended power uprate review of the Clinton nuclear power plant, which the NRC approved in 2002. I also participated in the NRC Staff's power uprate review of the Brunswick nuclear power plant. The scope of my review of the Vermont Yankee power uprate included the functional design of the Control Rod Drive System, the Standby Liquid Control System, and transient and accident analyses.

PREVIOUS EMPLOYMENT

From 1975 to 1980, I was a Systems Engineer in the power division of Stone & Webster Engineering Corp. In that capacity, I performed detailed engineering and design of reactor systems of a BWR. My duties included project interface and coordinating work with the nuclear steam system supplier (NSSS) (GE) and the electric utility company.

From 1973 to 1975, I was employed by United Engineers & Constructors (UE&C), in Philadelphia, PA. Initially, I was a Test & Start-Up Engineer in the UE&C Construction Division. In this capacity, I wrote various procedures and systems descriptions for a BWR.

Subsequently, I worked as a staff Engineer on the UE&C Nuclear Technical staff. In that capacity, I was engaged in providing technical expertise and consultation services to all nuclear projects of UE&C.

From 1967 to 1972 I served as a Reactor Operator at the Indian Atomic Energy Commission's first commercial nuclear power station, Tarapur 1 & 2 (a BWR built by Bechtel and GE). There, I participated in construction tests, pre-operational tests and normal operations of the station.

EDUCATION

I received a Bachelor of Science degree in Physics from Kerala (India) University in 1963. I also took graduate and professional courses in Nuclear Engineering at the University of Pennsylvania and the Engineers Club, in Philadelphia, PA, in 1975.

Other educational background and training included the following courses:

Perspectives on Reactor Safety - 2000

GE Nuclear Engineering Course - 1999

PRA Basics for Regulatory Applications - 1998

GE BWR/4 Technology Review - 1997

Power Plant Engineering - 1976

PWR technology course - 1980 (NRC sponsored)

BWR/6 simulator course - 1981(NRC sponsored)

Reactor operators training program (Tarapur Atomic Power Station, India) - 1969

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
ENTERGY NUCLEAR VERMONT YANKEE)	Docket No. 50-271-OLA
LLC and ENTERGY NUCLEAR)	
OPERATIONS, INC.)	ASLBP No. 04-832-02-OLA
)	
(Vermont Yankee Nuclear Power Station))	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S ANSWER TO ENTERGY'S MOTION FOR SUMMARY DISPOSITION OF NEW ENGLAND COALITION CONTENTION 3," in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class; or as indicated by an asterisk (*), by deposit in the Nuclear Regulatory Commission's internal mail system; and by e-mail as indicated by a double asterisk (**), this 22nd day of December, 2005.

Alex S. Karlin, Chair**
Administrative Judge
Atomic Safety and Licensing Board Panel
Mail Stop T-3F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: ask2@nrc.gov

Dr. Anthony J. Baratta**
Administrative Judge
Atomic Safety and Licensing Board Panel
Mail Stop T-3F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: ajb5@nrc.gov

Lester S. Rubenstein**
Administrative Judge
Atomic Safety and Licensing Board Panel
4760 East Country Villa Drive
Tucson, AZ 85718
E-mail: lesrrr@comcast.net

Office of the Secretary**
ATTN: Rulemaking and Adjudications Staff
Mail Stop: O-16C1
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: HEARINGDOCKET@nrc.gov

Office of Commission Appellate
Adjudication*
Mail Stop: O-16C1
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Jonathan M. Rund, Esq.**
Law Clerk
Atomic Safety and Licensing Board Panel
Mail Stop: T-3F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
(E-mail: jmr3@nrc.gov)

Jered J. Lindsay, Esq.**
Law Clerk
Atomic Safety and Licensing Board Panel
Mail Stop: T-3F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
(E-mail: JJL5@nrc.gov)

Jay E. Silberg, Esq.**
Matias Travieso-Diaz, Esq.**
Pillsbury Winthrop Shaw Pittman, LLP
2300 N St., NW
Washington, DC 20037-1128
E-mail: jay.silberg@pillsburylaw.com, and
matias.travieso-diaz@pillsburylaw.com

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

Sarah Hofmann, Esq.**
Special Counsel
Department of Public Service
112 State Street - Drawer 20
Montpelier, VT 05620-2601
E-mail: sarah.hofmann@state.vt.us

Anthony Z. Roisman, Esq.**
National Legal Scholars Law Firm
84 East Thetford Rd.
Lyme, NH 03768
E-mail: aroisman@nationallegalscholars.com

Raymond Shadis**
Staff Technical Advisor
New England Coalition
P.O. Box 98
Edgecomb, ME 04556
E-mail: shadis@prexar.com, shadis@ime.net



Jason C. Zorn
Counsel for NRC Staff