

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
Before the
ATOMIC SAFETY AND LICENSING BOARD

April 12, 2006 (3:37pm)
OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of Entergy Nuclear Vermont Yankee, LLC
and Entergy Nuclear Operations, Inc. (Vermont Yankee
Nuclear Power Station) (Technical Specification Proposed
Change No. 362)

April 6, 2006
Docket No. 50-271-OLA
ASLBP No. 04-832-02-OLA

**NEW ENGLAND COALITION'S REQUEST
FOR LEAVE TO FILE NEW CONTENTIONS**

I. INTRODUCTION

The New England Coalition, by and through its *pro se* representative, Raymond Shadis, files this request for leave to file new contentions pursuant to 10 CFR §2.309(f)(2).

II. BACKGROUND

A. By letter dated September 10, 2003, as supplemented by 42 letters ("Supplements"), with Supplement 42 added to Nuclear Regulatory Commission ("NRC") Agencywide Document Access and Management System ("ADAMS") on December 5, 2005, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. ("ENVY or the licensee") submitted a proposed license amendment for the Vermont Yankee Nuclear Power Station (Vermont Yankee).

The proposed amendment, "Technical Specification Proposed Change No. 263, Extended Power Uprate," would allow an increase in the maximum authorized reactor power level for Vermont Yankee from 1593 megawatts thermal (MWT) to 1912 MWT.

B. On August 30, 2004, New England Coalition and the State of Vermont filed timely petitions to intervene and requests for a hearing together with proposed contentions.

C. On November, 22, 2004, the Atomic safety and Licensing Board Panel ("Board") serving this Docket issued a memorandum and order admitting selected contentions and ruling that the State of Vermont and New England Coalition had standing to intervene under 10 CFR § 2.309 (a) and 10 CFR §2.309 (d)(1). The

Board's order granted New England Coalition standing in this matter to represent through its *pro se* representative both the organization's interests and the interests of representative members.

D. On November 2, 2005, the NRC published its draft Safety Evaluation Report ("SER") for the Vermont Yankee Technical Specification Proposed Change No. 263. NRC staff qualified publication of the draft SER with the caveat that additional information could be required of the licensee before final NRC staff approval.

E. On November 16 and 16, 2005, the NRC Advisory Committee on Reactor Safeguards (Subcommittee on Thermal-Hydraulics) held meetings in Brattleboro, Vermont to gather information from NRC Staff, the licensee, and the public regarding Vermont Yankee Technical Specification Proposed Change No. 263.

F. On November 29 and 30, 2005, the NRC Advisory Committee on Reactor Safeguards (Subcommittee on Thermal-Hydraulics) held meetings in Rockville, Maryland to gather information from NRC Staff, the licensee, and the public regarding Vermont Yankee Technical Specification Proposed Change No. 263.

G. On December 5, 2005, NRC added "Vermont Yankee Request For Additional Information," dated November 25, 2005 to ADAMS, (ML053260427).

H. On December 5, 2005, NRC added "Supplement 42," filed by ENVY on November 22, 2005, to ADAMS, (ML053350361).

I. On December 7, 8 and 9, 2005, the NRC Advisory Committee on Reactor Safeguards ("ACRS") held meetings in Rockville, Maryland to gather information from NRC Staff, the licensee, and the public regarding Vermont Yankee Technical Specification Proposed Change No. 263.

J. On January 4, 2006, ACRS published its letter to the NRC (Commission) considering various aspects of the draft SER and Vermont Yankee Technical Specification Proposed Change No. 263; recommending

K. Through review of Supplement 42 - (published December 5, 2005), subsequent Supplements 43, 44, and 45; Licensee and NRC staff statements contained in transcripts of ACRS meetings (11/15/2005, 11/16/2005, November 29, 2005, 11/30/2005, 12/07/2005, 12/08/2005 and 12/09/2005, (the dates at which these were added to the ACRS website are uncertain), the ACRS letter (published January 4, 2006), Licensee and NRC staff informational materials from the referenced ACRS meetings, and the Final Safety Evaluation Report provided to New England Coalition on March 6, 2006, New England Coalition was able to apprehend new

information and information that is substantially different than that previously available. This new and substantially different information forms the initiating basis for New England Coalition's proposed new contentions.

III. Legal Standards Applicable to Admission of New England Coalition's Proposed New (Late-Filed) Contentions

A. Under 10 C.F.R. § 2.309 (c), a late-filed contention may be admitted only upon the presiding officer's determination that it should be admitted after balancing certain factors. New England Coalition will address in this filing, as required for consideration of the presiding officer, the following eight factors as required by 10 C.F.R. § 2.309 (c):

- (i) Good cause, if any, for the failure to file on time;
- (ii) The nature of the requestor's/petitioner's right under the Act to be made a party to the proceeding;
- (iii) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding;
- (iv) The possible effect of any order that may be entered in the proceeding on the requestor's/petitioner's interest;
- (v) The availability of other means whereby the requestor's/petitioner's interest will be protected;
- (vi) The extent to which the requestor's/petitioner's interests will be represented by existing parties;
- (vii) The extent to which the requestor's/petitioner's participation will broaden the issues or delay the proceeding; and
- (viii) The extent to which the requestor's/petitioner's participation may reasonably be expected to assist in developing a sound record.

Petitioners seeking admission of a late-filed contention bear the burden of showing that a balancing of these factors weighs in favor of admittance (10 C.F.R. § 2.309(c)).¹ *Baltimore Gas & Elec. Co.* (Calvert Cliffs

¹ Although these regulations were recently revised (*see* Final Rule, Changes to Adjudicatory Process, 69 Fed. Reg. 2182 (Jan. 14, 2004)), however they retain in essence the Commission's late-filed contention requirements of long-standing. *Compare* 10 C.F.R. § 2.309(c) and (f)(2), *with* 10 C.F.R. § 2.714(a)(1)(i)-(v) and (b)(2) (2004); *see also* 69 Fed. Reg. at 2221.

Nuclear Power Plant, Units 1 & 2), CLI-98-25, 48 NRC 325, 347 (1998). Where petitioners do not show good cause for the lateness, the petitioner's demonstration on the other factors must be particularly strong. *Texas Utils. Elec. Co.* (Comanche Peak Steam Electric Station, Units 1 & 2), CLI-92-12, 36 NRC 62, 73 (1992) (quoting *Duke Power Co.* (Perkins Nuclear Station, Units 1, 2, & 3), ALAB-431, 6 NRC 460, 462 (1977)).

B. In addition, New England Coalition will address Commission regulations under 10 C.F.R. § 2.309(f)(2) requiring that a proposed late-filed contention may be admitted with leave of the presiding officer only upon a showing that:

- (i) the information upon which the amended or new contention is based was not previously available;
- (ii) the information upon which the amended or new contention is based is materially different than information previously available; and
- (iii) the amended or new contention has been submitted in a timely fashion based on the availability of the subsequent information.

C. Finally, in addition to fulfilling the requirements of 10 C.F.R. § 2.309(f)(2), New England Coalition will also show that the late-filed contention meets the standard contention admissibility requirements of § 2.309(f)(1)(i)-(vi), which requires a petitioner to:

- (i) provide a specific statement of the issue of law or fact to be raised or controverted;
- (ii) provide a brief explanation of the basis for the contention;
- (iii) demonstrate that the issue raised in the contention is within the scope of the proceeding;
- (iv) demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;
- (v) provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the

requestor/petitioner intends to rely to support its position on the issue; and

- (vi) provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief 10 C.F.R. § 2.309(f)(1).

A late-filed contention must refer to specific documents and be accompanied by a concise statement of the alleged facts or expert opinion that support the proposed contention. *See Millstone*, CLI-01-24, 54 NRC at 358 (citing *Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, & 3)*, CLI-99-11, 49 NRC 328, 333 (1999)); *Calvert Cliffs*, CLI-98-25, 48 NRC at 348

IV. PROPOSED NEW CONTENTIONS

New England Coalition's proposed new contentions are as follows:

New Contention One

ENVY has failed to provide correctly calculated offsite and control room radiological consequences in the event of a design basis accident ("DBA") under extended power uprate ("EPU") conditions; using both questionable models and applied erroneous assumptions. NRC staff has, through incorporation in the SER, erroneously accepted and approved the ENVY methodology of predicting dose releases under the EPU conditions. Thus ENVY and NRC staff have failed to provide adequate assurance that all Vermont Yankee DBAs while operating under uprate conditions will meet 10CFR 50.67, General Design Criteria 19, and SRP 15.01 radiological dose requirements. Since therefore the public will be at risk of exposure to radioactivity releases that would exceed the allowable limits, ENVY should not be allowed to operate Vermont Yankee Nuclear Power Station under the proposed EPU.

New Contention Two

The ENVY application (Technical Specification Proposed Change No.263 w/ Supplements 1-45) the radiological consequences at Vermont Yankee under uprate, and NRC staff review thereof, including Requests for Additional Information (“RAI”) (ADAMS ML053260427-Added 12/05/2005) and the SER, is incomplete insofar as it does not discuss how Vermont Yankee would comply with GDC-19, GDC 55 and 10CFR 100.11 following the failure of small lines carrying primary coolant outside of containment. ENVY has not provided the requisite information in the instant application.

New Contention Three

ENVY Technical Specification Proposed Change No.263 w/ Supplements 1-42 does not comply with Drafts GDC- 40 and 42 insofar as they require that protection must be provided against the dynamic effects of a LOCA.

Specifically, and in contradiction to Supplement 42 (provided to New England Coalition 12 05/ 2005) and ENVY testimony before the NRC Advisory Committee on Reactor Safeguards (11/15/2005, 11/16,2005, 11/29/2005, 11/30/2005, 12/07/2005, 12/08/2005, 12/09/2005), and the Steam Dryer Monitoring Plan endorsed in the NRC Final Safety Evaluation Report at page 50, and NRC staff endorsement of Ascension Power Testing as described in NRC staff’s response to public comments on the SER at page 325, and NRC Staff’s acceptance of ENVY steam dryer inspection results as determinative of no further crack growth at SER page 337, New England Coalition asserts that:

a. The fatigue and the intergranular stress corrosion cracks, (IGSCC) which already exist on various Vermont Yankee steam dryer surfaces will increase in number and grow in size because of the higher stresses on the dryer structure from flow induced vibrations under EPU conditions.

b. The increase energy content in the flow under EPU conditions will increase the intensity and duration of the dynamic loads that act on the dryer causing it potentially to fragment and generate many loose parts.

c. The loose parts may migrate to the core region or the Main Steam Isolation Valve ("MSIV"), potentially blocking fuel flow channels and /or preventing the MSIV from isolating the containment following a main steam line break. The ultimate danger to the public from dryer failure is a core-melt with an early containment by pass.

d. Because the ascension to power tests, as described in Supplement 42, are limited to steady state conditions they will not provide any data that could indicate that the dryer would not fail catastrophically following LOCA.

V. COMPLIANCE OF NEW ENGLAND COALITION'S PROPOSED NEW CONTENTIONS WITH APPLICABLE STANDARDS

As a matter of economy, New England Coalition will first address compliance for all three proposed new contentions with those 10 C.F.R §3.309 (c) standards deemed satisfied in the Board's order of November 22, 2004 and which establish New England Coalition's (ii) right to be made a party under the Act, (iii) interests, (iv) effect of any order upon those interests, (v) availability of other means by which interests may be protected, (vi) whether its interests may be represented by existing parties, (vii) extent to which requestor's participation may broaden the proceeding or delay, and (viii) the extent to which requestor's participation may assist in developing a sound record. All of these standards are listed above in Section II. Only the first standard listed under II, 10 C.F.R §3.309 (c) (i), that which deals with timeliness, will be addressed separately as it applies to each of the three proposed new contentions, and generally as it applies to this entire filing.

A. right to be made a party under the Act, 10 C.F.R §3.309 (c) (ii) - New England Coalition is already a party to the proceeding and has two admitted contentions waiting hearing before the Board. The Board has found New England Coalition to have standing to appear before it in this matter.

B. interest, 10 C.F.R §3.309 (c) (iii) - New England Coalition has already demonstrated its interest in the proceeding in order to be granted standing to appear. Those interests, primarily increased risks to property, human health and the environment from the proposed extended power uprate, insofar as they are encompassed in the subject matter of the two contentions already admitted, are identical to the interests in the admission of the new contentions proposed in this filing.

C. effect of any order upon those interests, 10 C.F.R §3.309 (c) (iv) - An order from the Board, for example, requiring, incorporation of analysis the phenomenon of "iodine spike," a more inclusive radiological dose analysis taking into consideration potential dose contribution from small (pipe/tube) lines that carry coolant beyond containment, a more thorough steam dryer integrity or design analysis, installation of a replacement steam dryer specifically design to withstand increased flow-induced vibration resulting from EPU, or denying permission to implement uprate, has the real potential to mitigate the identified harms (increased likelihood of an accident and potential accident consequences) to New England Coalition's interest(s).

D. availability of other means by which interests may be protected, 10 C.F.R §3.309 (c) (v) – New England Coalition’s interest (property, human health, and the environment) is at increased risk from radiation release or nuclear accident. Under the Atomic Energy Act (as amended), NRC is sole regulator insofar as nuclear accident risk and nuclear reactor regulation. Intervention in this proceeding is the only venue available at this juncture in which anything resembling due process is available to address inadequacies in the proposed technical specification change (license action)’

E. whether its interests may be represented by existing parties, 10 C.F.R §3.309 (c) (vi) - New England Coalition has already made a showing, confirmed by the Board’s Memorandum and Order of November 22, 2004, that there is no other party protecting its particular interests in this proceeding . That remains the case, among the four parties admitted to this proceeding, with respect to New England Coalition’s proposed new contentions.

1. The Department of Public Service has not raised the issue addressed in New England Coalition’s proposed new contentions and would have no basis to do so given that they have not expressed an interest in the issues contained either in New England Coalition’s proposed new contentions or in New England Coalition’s admitted contentions regarding the necessity of full-transient testing and seismic qualification of the cooling towers.
2. The NRC Staff, has already accepted, approved and defended ENVY’s analysis and positions regarding the subject matter of both the admitted and the proposed contentions through issuance of a draft Safety Evaluation Report and, as part of the review and/or approval process; presentations before the NRC Advisory Committee on Reactor Safeguards. NRC Staff, having published a Notice of Consideration of Amendment to Facility Operating License and Proposed No Significant Hazards Consideration Determination for the ENVY EPU on January 9, 2006 (ML0534490030), is not now likely to reverse itself by representing the interest of New England Coalition, it’s members, or constituents, as that interest is expressed by remaining

grave concern evident in the contentions that Technical Specification Proposed Change No. 362 poses aggravated risk to personal and public health and safety.

3. ENVY remains in dispute over New England Coalition's accepted contentions. ENVY has represented it believes New England Coalition's concerns as expressed in its proposed new contention are without merit. ENVY will not represent New England Coalition's interests in this matter.

New England Coalition alone can and does represent its interests.

D. extent to which requestor's participation may broaden the proceeding or delay, 10 C.F.R §3.309 (c) (vii)

1. New England Coalition has already made a showing, confirmed by the Board's Memorandum and Order of November 22, 2004, that its participation will not unduly broaden or delay this proceeding.

2. New England Coalition's accepted contentions and the proposed new contentions are well within the scope of this proceeding and require no extraordinary processes for adjudication. Any reasonable lengthening of the schedule will be determined at the discretion of the Board and should be weighed against what may be gained toward the ultimate stated purpose of the NRC and ASLB hearings, that is, maintaining reasonable assurance of public health and safety.

3. The Board has set a schedule for Response (25 days) and Reply (7days) regarding the proposed new contentions which would accomplish these preliminaries prior to scheduled submission of initial filings, now set for May 17, 2006.

4. Proposed new Contention One and Two are very narrowly drawn. Contention Two is a simple contention of omission. Both are readily resolved if ENVY can demonstrate that it has applied or will apply adequate radiological consequence analysis. The steam dryer issue raised in Contention Three is the subject of ongoing study and experimentation at Vermont Yankee other EPU reactors; thus volumes of fresh information should help in providing timely resolution of this issue. In addition, it there is the possibility that the Commission (NRC) will give permission for ENVY to begin EPU operation before any of these contentions are subjected to a hearing.

E. the extent to which requestor's participation may assist in developing a sound record 10 C.F.R §3.309 (c) (vii)

1. New England Coalition has now retained former NRC staff member Dr. Joram Hopenfeld as an expert witness. With Dr. Hopenfeld's expert assistance and direction, as well as that of Dr. Ross Landsman, also a former member of the NRC, New England Coalition can assist the Board in developing a sound record on proposed technical specification change (EPU).
2. The Board has previously acknowledged New England Coalition's ability to contribute toward building a sound record by granting it intervenor (party) status and accepting two of its contentions for litigation. New England Coalition will demonstrate in the remainder of this pleading that its three proposed new contentions will also meet the same high standard for assisting the Board in developing a sound record.

VI. COMPLIANCE OF PROPOSED NEW CONTENTIONS WITH REMAINING STANDARDS

New England Coalition will now address how each of its proposed new contentions meet the remaining standards for admission in this proceeding.

New England Coalition's Proposed Late Contentions should be should be admitted on balanced consideration of the following 10 CFR Part 2 requirements for late-filed contentions:

1. (10 C.F.R. § 2.309(c) Good cause, if any, for the failure to file on time;
 - a. Proposed new contentions are filed as soon as possible following New England Coalition's first opportunity to cumulatively apprehend clear and unambiguous information about the erroneous assumptions and conclusions of the licensee regarding radiological dose consequences for design basis accidents ("DBAs") under uprate conditions, the omission of small bore piping analysis, and the misplaced reliance on faulty steam dryer performance analysis, as contained in NRC Staff and Licensee presentations to the ACRS and in the Final SER.

New England Coalition did have notice of one error addressed by Proposed New Contention 3 and in Dr. Hopensfeld's Declaration (the mistaken assumption that available iodine concentrations under accident conditions will be balanced out by increased flow) as early as issuance of the draft SER, November 2, 2005. New England Coalition considered filing a contention on what it took to be NRC staff's error at that time, but on consulting the record to ascertain what deadlines there might be for filing contentions on the SER found, in the Board's scheduling Order of February 1, 2005, only references to deadlines for filing motions for summary disposition,

30 days after issuance of the draft SER: Deadline for filing motions for summary disposition pursuant to 10 C.F.R. § 2.1205. Any answer or opposing motion shall be filed within 20 days after service of the motion. [At 4.]

Further on consulting the transcript from the Prehearing Conference of October 14, 2004, via electronic word search for the terms "contention" and "SER," New England Coalition located the following admonishment from Judge Rubenstein:

[Page 59] ADMIN. JUDGE RUBENSTEIN: Well, in terms of the scope of the hearing, as a prelude to the contentions, one should be clear on the so-called sanctity of the current licensing basis and the contentions which may address it, those types of issues.

ADMIN. JUDGE KARLIN: That's a good point, yes.

ADMIN. JUDGE RUBENSTEIN: **In other words, one should understand that the contentions have to be derived from the SAR and related documents. And one cannot question the SER so that should not be within the scope.** [Emphasis provided]

Those sort of things, I think are what -- that plus the legal format of our hearing is what Mr. Shadis is talking about. And that might set the stage for a better understanding of our remarks on the In other words, a question may arise what is the specific reference in the SAR that you are [Page 60] challenging? What specific relief are you asking for if this contention were admissible? So it may get to a better discussion on the contentions. [Emphasis added]

Only recently, through interaction with the Board on the scope of contentions, New England Coalition has learned not to rely on a plain reading interpretation of the Board's articulations. Therefore New England Coalition hopes that the Board will take into account New England Coalition's naiveté as a pro se intervenor in passing an earlier opportunity to raise the very serious issue of analyzed potential accident consequences as now expressed in Contention 3.

Even so, New England Coalition did attempt to bring the issues in proposed Contentions 1-3, into the EPU and draft SER review process. New England Coalition, through its expert witness, provided the Advisory Committee on Reactor Safeguards (ACRS) and the NRC Staff in formal meetings designed for review of technical issues in ENVY's license amendment application and in the draft SER, with exposition on the issues raised in Proposed New Contentions 1-3. They were not directly addressed in the final SER, that document only serving to deepen errors with respect to the steam dryer issue (Proposed New Contention 3) as addressed by DR. Hopenfeld's declaration.

The full depth and scope of non-conservative conclusions, planned actions, and consequences resulting from the licensee's dependence on erroneous assumptions and questionable models, regarding radiological dose consequences, (Proposed New Contention 1) to be applied under the proposed extended power uprate was, to New England Coalition's knowledge, first publicly revealed in full in NRC staff and licensee presentations in exposition of Technical Specification Proposed Change No.263 before the Advisory Committee on Reactor Safeguards meeting to evaluate this application. The informing presentations took place on November 29, 2005 and December 8, 2005 and are contained in transcripts for those dates on the ACRS section of the NRC website (www.nrc.gov).

An excerpt of the December 8, 2005 ACRS transcript containing relevant discussion in a statement from Mr. Pedro Perez, representing ENVY, is included in the attached Declaration of New England Coalition expert witness, Dr. Joram Hopenfeld.

MS. HART [NRC]: In addition, they took credit for iodine removal by the drywell sprays, both for the particulate and the elemental form of iodine, and also took credit for iodine deposition in the main steam lines for any leakage that would go past the main steam line isolation valves.

CHAIRMAN DENNING: This is all --

MEMBER WALLIS: Part of those sprays that bring down the pressure?

MS. HART: That's correct.

MEMBER WALLIS: I thought they needed it for MPSE [MPSH].

MR. PEREZ [ENVY]: Based on the iodine.

MEMBER WALLIS: It's another one of these glitches in the design basis accident definition or something?

MS. HART: I'm not sure I understand the question.

MEMBER WALLIS: Drywell is best operated when you calculate these other calculations we have seen for the pool temperature?

MR. PEREZ: Yes. This is Pedro Perez.

Yes. The same drywell sprays that are credited for removing the iodine particulates, these are the same that assumed that have the maximum condensation, if you would, of the condensibles that minimize the pressure that's credited in the containment overpressure calculation.

CHAIRMAN DENNING: Continue.

MS. HART: Yes. They also continued to --they looked at the rest of the design basis accidents that do apply to BWRs, the main steam line break, the fuel-handling accident, and the control rod drop accident. For none of the accidents did they assume control room isolation. They assumed just normal intake as they are unfiltered in leakage.

New England Coalition compared the relevant NRC staff and licensee statements to Technical Specification Proposed Change No.263 and its 45 supplements with as much alacrity as New England Coalition's citizen intervenor resources would allow. In weighing out how much time should be allowed from the time of discovery to the time of filing, New England Coalition respectfully asks the Board to consider, in this case, the unusual volume and complexity of the information to be sifted, New England Coalition's reliance on a plain reading of the Board's articulations (above), and the fact that New England Coalition has, due to ACRS and Staff lack of response on the issues raised in Proposed New Contentions 1-3) no remaining venues in which to seek relief.

10 C.F.R. § 2.309(f)(2) requiring that a proposed late-filed contention may be admitted with leave of the presiding officer only upon a showing that:

(i) the information upon which the amended or new contention is based was not previously available.

A diligent search of the instant application and amendments 1 through 45 did not discover clear and unambiguous information regarding the extent and depth of error in ENVY's applied assumptions, questionable models, and false conclusions, until it was revealed in NRC staff and licensee presentations in exposition of Technical Specification Proposed Change No.263 before the NRC Advisory Committee on Reactor Safeguards and in the final SER .

(ii) the information upon which the new or amended contention is based is materially different than information previously available; and

Dr. Hopenfeld makes clear in his Declaration that this contention is not challenging the Alternate Source Term Amendment nor is it nor is it wholly-based on any information reasonably apprehensible from earlier information provided by the licensee or NRC staff. As stated above, The depth and scope of dependence on erroneous applied assumptions, questionable models, and false conclusions regarding radiological dose consequences was first revealed in NRC staff and licensee presentations in exposition of Technical Specification Proposed Change No.263 before the ACRS meeting to evaluate this application. As Dr. Hopenfeld points out in his declaration, the reliance on steam dryer inspection results in the final SER is materially different than what was presented in the draft SER.

(iii) the amended or new contention has been submitted in a timely fashion based on the availability of subsequent information.

New England Coalition avers that the final SER is the seminal document on the issues raised. The Board has set a schedule within which to file contentions based on the SER. This filing is within that schedule. New England Coalition respectfully reminds the Board that it has declined to set a fixed time limit for the filing of new contentions²; thus reserving the Board's ability to apply reasonable discretion.

§ 2.309(f)(1)(i)-(vi), which requires a petitioner to:

(i) provide a specific statement of the issue of law or fact to be raised or controverted

The proposed contention states, "...ENVY and NRC staff have failed to provide adequate assurance that all Vermont Yankee DBAs while operating under uprate conditions will meet 10CFR 50.67, General Design Criteria 1.9, and SRP 15.01 radiological dose requirements. As to issues of fact, Dr. Hopenfeld disputes and takes exception to five, "non-conservative assumptions that falsely and inaccurately minimize the potential of public exposure to exceedingly high doses of radioactivity" He lists ENVY's non-conservative false assumptions as:

- a. The iodine source term is not affected by the EPU because the 20% increase in fission products is compensated by a 20% decrease in the iodine concentration in the coolant, or, as NRC staff, apparently in complete agreement, restated ENVY's position, both in

² See, ASLB Scheduling Conference (Docket 50-271), Tr. at 698-700, August 3, 2005, ADAMS No. ML05221042

testimony before ACRS (tr. ACRS, 11/30/2005 at pp.205-214) and in the draft Safety Evaluation Report (DSER) at p.248, 2.10.1, “ The concentration of noble gas and other volatile fission products in the main steam line [under EPU] will not change. The increased production rate (20%) of these materials is offset by the by the corresponding increase in steam flow (20%).”

- b. The use of iodine activity of 1.1 uCi/gm and 4uCi/gr with a pre accident iodine spike in the dose calculations is not applicable to the EPU conditions.
- c. The assumption that the concurrent iodine spike during the Main Steam Line Break, (“MSLB”), can be ignored is incorrect and is not valid.
- d. The assumption that dry well sprays will remove iodine is not applicable to the MSLB design basis accidents.
- e. The assumption that credit can be taken for iodine deposition in the main steam lines is not valid.

f.

Dr. Hopenfeld notes the continued omission of small bore piping analysis from NRC’s review and in particular from the SER.

Dr. Hopenfeld disputes ENVY and NRC reliance on incorrectly extrapolated data and incorrectly applied formulae in attempting to predict steam dryer behavior.

(ii) provide a brief explanation of the basis for the contention;

In addition to the five disputed assumptions listed above, Dr. Hopenfeld’s Declaration includes, as a brief explanation of the basis for proposed contention one, factual, expert refutation of each assumption. New England Coalition summarizes as follows: ENVY has based estimates of the potential radiological consequences of a design basis accident on assumptions that are contravened or invalidated by the facts:

- a. Increased flow offsets increased iodine concentration under normal operating conditions, but not an iodine spiking factor resulting in increased dose under accident conditions.
- b. Extrapolating iodine coolant concentrations to EPU conditions is technically indefensible and not supported, as required under regulation, by experimental and empirical data.
- c. ENVY has not accounted for concurrent iodine spike and resultant dose consequences during a postulated main steam line break under EPU conditions.

- d. Since a postulated MSLB outside containment ends with isolation valve closure before activation of dry well sprays, ENVY should not be allowed to take credit for iodine capture in the dry well in a MSLB event.
- e. No credit should be permitted for iodine deposition in steam lines during a MSLB outside containment event (under uprate conditions) inasmuch as high flow rates and turbulence early in the event will shear fission products (including iodine) as well as rust, scale, and CRUD from pipe walls.

(iii) demonstrate that the issue raised in the contention is within the scope of the proceeding.

New England Coalition does not take issue with ENVY's Alternate Source Term Technical Specification Change No. 232 nor does New England Coalition herein take issue with NRC regulation rather, as Dr. Hopenfled stresses, the dispute is about the validity of ENVY's assumptions and conclusions with respect to radiological consequences of a DBA under EPU conditions, and not under current licensed thermal power. Dr. Hopenfled references the failure, in the ENVY EPU analysis, to comply with 10CFR 50.67. The contention also specifically alleges failure of the application to demonstrate compliance with General Design Criteria 19, and SRP 15.01 radiological dose requirements. Therefore, this proposed contention is confined to adequacy and accuracy of information in the application under consideration and to the question of the application's compliance with NRC regulation.

(iv) demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

In order to support the action that is involved in this proceeding, NRC must find that the Technical Specification Proposed Change at issue will not, as presented by the licensee, significantly increase the consequences or the likelihood of an accident (10CFR§ 50.59). NRC must find that the extended power uprate will not adversely affect the plant's substantial compliance with applicable NRC regulation.

- a. The proposed contention asserts with substantial basis and supported by expert testimony that the potential consequences of an accident will be greatly increased if an extended power uprate is approved and implemented at Vermont Yankee.

b. The proposed contention asserts with substantial basis and supported by expert testimony that ENVY and NRC staff have failed to demonstrate compliance with General Design Criteria 19, and SRP 15.01 radiological dose requirements.

(v) provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely at hearing, together with references and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

Dr Hopenfeld's Declaration, provided as Exhibit One, contains a concise statement of alleged facts and expert opinion upon which New England Coalition intends to rely at hearing. Appended to this Petition as Exhibit Two, is a list of references and/or documents upon which Dr. Hopenfeld relied in formulating his Declaration and upon which New England Coalition intends to rely to support its position on the issue. Dr. Hopenfeld and New England Coalition would rely on additional references and/or documents for a hearing should this contention be accepted for adjudication.

(vi) provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief. 10CFR § 2.309 (f)(1);

Dr. Hopenfeld has provided, in his declaration ample evidence of a genuine dispute for each Proposed New Contention.

11. New England Coalition has placed before the Board three Proposed New Contentions

This is discussed above in detail in the section providing the supporting documentation for New England Coalition's contention. In that argument, incorporated herein by reference, in forming his opinion, New England Coalition's expert, Dr. Hopenfeld, relied upon relevant portions of the application at issue and the NRC regulatory requirements ENVY must satisfy in order to obtain approval for the proposed extended

power uprate. These documents form the basis and support for New England Coalition's proposed new contentions.

CONCLUSION

New England Coalition respectfully requests that if the Board finds this petition deficient, New England Coalition be permitted to time and opportunity to cure the deficiencies. Where this Board has discretion, New England Coalition respectfully requests that, inasmuch as the issues raised in the Proposed New Contentions are technically credible and of grave significance, the Board exercise such discretion on the side of caution and public safety; permitting full and fair hearing.

New England Coalition's new contentions, One through Three should be taken up by the Board and adjudicated in the instant proceeding as they satisfy the requirements of 10 CFR §2.309.

Respectfully submitted:



Raymond Shadis
Pro Se Representative
New England Coalition
Post Office Box 98,
Edgecomb, Maine 04556
207-882-7801
shadis@prexar.com

cc: As per Certificate of Service

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

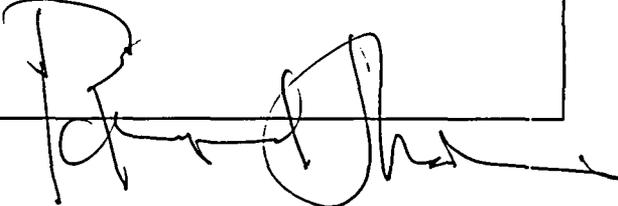
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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 New England Coalition's PETITION FOR LEAVE TO FILE NEW CONTENTIONS in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class this 6th day of April 2006 and by e-mail as indicated by a double asterisk (**), the 6th day of April , 2006¹.

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

<p>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 matias.travieso-diaz@pillsburylaw.com</p>	<p>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</p>
<p>Anthony Z. Roisman, Esq.** National Legal Scholars Law Firm 84 East Thetford Rd. Lyne, NH 03768 E-mail: aroisman@nationallegalscholars.com</p>	
<p>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)</p>	<p>Sherwin E. Turk, Esq.** Jason C. Zorn, Esq.** Office of the General Counsel Mail Stop O-15 D21 U.S. Nuclear Regulatory Commission Washington, DC 20555-0001 set@nrc.gov, jcz@nrc.gov</p> 

Raymond Shadis
Pro Se Representative
New England Coalition
Post Office Box 98,
Edgecomb, Maine 04556
207-882-7801
shadis@prexar.com

UNITED STATES
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of
ENTERGY NUCLEAR VERMONT YANKEE, LLC
and ENTERGY NUCLEAR OPERATIONS, INC.
(Vermont Yankee Nuclear Power Station)

April 6, 2006

Docket No. 50-271

ASLBP No. 04-832-02-OLA

DECLARATION OF DR. JORAM HOPENFELD
SUPPORTING
NEW ENGLAND COALITION'S NEW CONTENTIONS

I, Dr. Joram Hopenfeld, declare as follows:

1. My name is Dr. Joram Hopenfeld. I reside at 1724 Yale Place, Rockville, Maryland.
2. The New England Coalition has retained me as an expert witness in the above captioned matter.
3. I am a mechanical engineer and hold a doctorate in engineering.
4. I have 45 years of professional experience in the fields of instrumentation, design, project management, and nuclear safety; including 18 years in the employ of the U.S. Nuclear Regulatory Commission. I have previously offered expert testimony in this proceeding in support of New England Coalition's Answer To Entergy's Motion For Summary Disposition of New England Coalition Contention 3, which was filed 12/23/2005 and to which I attached my Curriculum Vitae as Exhibit A.

5. I have reviewed the Entergy Nuclear Vermont Yankee (“ENVY” or the “Licensee”) Technical Specification Proposed Change No.263 (and Supplements 1-45), and such publicly available documents as are relevant to the subject of my declaration; including those in the record of the above captioned proceeding.

6. I have testified on the technical and safety issues described in this declaration before the U.S. Nuclear Regulatory Commission’s Advisory Committee on Reactor Safeguards (ACRS) in meetings convened for the purpose of reviewing of the aforementioned application and the NRC staff draft Safety Evaluation Report on the same application. The ACRS meetings in which I presented were in a series held in Brattleboro, Vermont on November 16, 2005 and at NRC headquarters in Rockville, Maryland on November 29, 30, 2005, December 7, 8, 9, 2005.

7. My declaration is intended to support New England Coalition’s New Contentions in the above captioned matter, One, Two, and Three, as listed below:

New Contention One

ENVY has failed to provide correctly calculated offsite and control room radiological consequences in the event of a design basis accident (“DBA”) under extended power uprate (“EPU”) conditions; using both questionable models and applied erroneous assumptions. NRC staff has, through incorporation in the SER, erroneously accepted and approved the ENVY methodology of predicting dose releases under the EPU conditions. Thus ENVY and NRC staff have failed to provide adequate assurance that all Vermont Yankee DBAs while operating under uprate conditions will meet 10CFR 50.67, General Design Criteria 19, and SRP 15.01 radiological dose requirements. Since therefore the public will be at risk of exposure to radioactivity releases that would exceed the allowable limits, ENVY should not be allowed to operate Vermont Yankee Nuclear Power Station under the proposed EPU.

New Contention Two

The ENVY application (Technical Specification Proposed Change No.263 w/ Supplements 1-45) the radiological consequences at Vermont Yankee under uprate, and NRC staff review thereof, including Requests for Additional Information ("RAI") (ADAMS ML053260427-Added 12/05/2005) and the SER, is incomplete insofar as it does not discuss how Vermont Yankee would comply with GDC-19, GDC 55 and 10CFR 100.11 following the failure of small lines carrying primary coolant outside of containment. ENVY has not provided the requisite information in the instant application.

New Contention Three

ENVY Technical Specification Proposed Change No.263 w/ Supplements 1-42 does not comply with Drafts GDC- 40 and 42 insofar as they require that protection must be provided against the dynamic effects of a LOCA.

Specifically, and in contradiction to Supplement 42 (provided to New England Coalition 12 05/ 2005) and ENVY testimony before the NRC Advisory Committee on Reactor Safeguards (11/15/2005, 11/16,2005, 11/29/2005, 11/30/2005, 12/07/2005, 12/08/2005, 12/09/2005), and the Steam Dryer Monitoring Plan endorsed in the NRC Final Safety Evaluation Report at page 50, and NRC staff endorsement of Ascension Power Testing as described in NRC staff's response to public comments on the SER at page 325, and NRC Staff's acceptance of ENVY steam dryer inspection results as determinative of no further crack growth at SER page 337, New England Coalition asserts that:

- a. The fatigue and the intergranular stress corrosion cracks, (IGSCC) which already exist on various Vermont Yankee steam dryer surfaces will increase in number and grow in size because of the higher stresses on the dryer structure from flow induced vibrations under EPU conditions.
- b. The increase energy content in the flow under EPU conditions will increase the intensity and duration of the dynamic loads that act on the dryer causing it potentially to fragment and generate many loose parts.
- c. The loose parts may migrate to the core region or the Main Steam Isolation Valve ("MSIV"), potentially blocking fuel flow channels and /or preventing the MSIV from isolating the containment following a main steam line break. The ultimate danger to the public from dryer failure is a core-melt with an early containment by pass.
- d. Because the ascension to power tests, as described in Supplement 42, are limited to steady state conditions they will not provide any data that could indicate that the dryer would not fail catastrophically following LOCA.

7. Bases for New Contentions One through Three Follows Below. Specific references, together with bibliographic information are listed in the attached, "Exhibit B".

8. Basis for New Contention One

The ENVY analysis is based on the following non-conservative assumptions that falsely and inaccurately minimize the potential of public exposure to exceedingly high doses of radioactivity.

- a. The iodine source term is not affected by the EPU because the 20% increase in fission products is compensated by a 20% decrease in the iodine concentration in the coolant, or, as NRC staff, apparently in complete agreement, restated ENVY's position, both in testimony before ACRS (tr. ACRS, 11/30/2005 at p.205) and in the draft Safety Evaluation Report (DSER) at p.248, 2.10.1, " The concentration of noble gas and other volatile fission products in the main steam line [under EPU] will not change. The increased production rate (20%) of these materials is offset by the by the corresponding increase in steam flow (20%)."
- b. The use of iodine activity of 1.1 uCi/gm and 4uCi/gr with a pre accident iodine spike in the dose calculations is not applicable to the EPU conditions.
- c. The assumption that the concurrent iodine spike during the Main Steam Line Break, MSLB, can be ignored is incorrect and is not valid.
- d. The assumption that dry well sprays will remove iodine is not applicable to the MSLB design basis accidents.
- e. The assumption that credit can be taken for iodine deposition in the main steam lines is not valid

Assumptions a through e are diametrically opposite to the present scientific understanding of iodine chemistry and iodine behavior in reactor systems. Following is an item-by-item discussion in support of this statement:

- a. The amount of iodine that could potentially be released to the environment, commonly referred to as the iodine source term, does not depend on the total amount of fission product content in the fuel. The amount of iodine released to the coolant is controlled only by the rate at which iodine from the cladding gap can escape into the coolant. There is no data on iodine release or transport that would support the ENVY contention that a correlation exists between the iodine content in the fuel and the iodine concentration in the coolant. ENVY is correct that the increase in flow rate at the EPU condition will cause a decrease in the concentration of the iodine in the coolant below the level of operation at the licensed power. However this decrease in concentration would only result in an increase in the iodine spike. As shown in NUREG 1740, figure.6, a 20% decrease in iodine concentration increases the iodine spiking factor by approximately 100%. This increase in the iodine spike would result in a larger iodine source term and therefore larger release rates of iodine than predicted by ENVY
- b. The Alternative Source Term, AST, which was referenced in ENVY and NRC Staff testimony in support of the ENVY Technical Specification Proposed Change No.263 w/ Supplements 1-42 before the NRC Advisory Committee on Reactor Safeguards (11/29/2005 and 12/08/2005), and which was issued under 10CFR50.67 "Accident Source Term" specifies that iodine dose calculations during DBAs be based on concentrations of 1.1 uCi/gm and 4uCi/gr with a pre

accident spike. These values are based on experimental data from power plants, which were operating at their licensed power. This database does not include power plants that operated at EPU conditions. Since the phenomenological understanding of the above experimental data does not exist, the extrapolation of the existing database is not justified. This principle is well accepted by the scientific community; in fact the Advisory Committee on Reactor Safety, (“ACRS”) in NUREG 1740 rejected the NRC approach of extrapolating data beyond its intended use. The ACRS reiterated this position regarding iodine spike at the ACRS hearings on 02/03 and 04/04. To address this issue the NRC has recently initiated GSI 197, to resolve the iodine spiking issue.

ENVY requested and was granted the AST (Technical Specification Proposed Change No. 262, ADAMS No. ML01280490, Added 04/06/2005) for Vermont Yankee. As part of the AST, Vermont Yankee is committed to comply with the requirement that “the AST must have a defensive technical basis supported by experimental and empirical data, be verified and validated and be documented in a suitable form that facilitates public review and disclosure.” The ENVY practice of extrapolating the coolant concentrations of 1.1 and 4 uCi/gm to EPU conditions is a material violation of the AST requirement and therefore of 10CFR50.67.

- c. The main steam line break, (“MSLB”) is one of four limiting design basis accidents, DBA’s It has the potential of releasing large doses to the population zone and the control room. Following an MSLB event outside containment, it takes 6.8 seconds at Vermont Yankee to close the main steam isolation valve and isolate the containment. The volume of steam in the pipe prior the break plus the

volume of steam and the water rushing out the break during the period of time that the MSIV is still open, provides the basis for calculating the iodine release to the population zone and to the control room. In addition to the pre accident iodine concentration in the coolant the iodine concentration is increased during the event because of the concurrent iodine spike.

A concurrent iodine spike accompanies the MSLB event because a pressure drop in the coolant has experimentally been observed to cause an increase in the transfer rate of iodine from the fuel to the coolant. This phenomenon is discussed in NUREG 1740 (Voltage-based Alternative Repair Criteria-A report to the Advisory Committee on Reactor Safeguards by the Ad Hoc Committee on a Differing Professional Opinion – February 2001) and a factor of 500 increase in iodine concentration is commonly used for the concurrent iodine spike. It appears that this phenomenon has been ignored in the instant application for Technical Specification Change and in the NRC review. Some results of the erroneous application of AST in EPU are shown in the testimony of Pedro Perez of ENVY before the ACRS (tr. at page 102, 12/07/2005):

MR. PEREZ: Good afternoon. My name is Pedro Perez, representing Vermont Yankee.

At the Vermont Yankee plant there is no control room filtration, such as charcoal or HEPA filters. We assumed when we implemented the alternate source term that basically the control room is left open up to the full ventilation flow rate. So in principle everything is unfiltered that comes into the control room, and we meet the habitability requirements.

MEMBER KRESS: By using face masks?

MR. PEDRO: No, sir. No KI and no SCBAs.

MEMBER POWERS: You can do it with IST [AST].

MR. PEDRO: With the IST [AST].

MEMBER DENNING: Thank you very much.

MR. PEDRO: You're welcome.

MEMBER POWERS: Probably wrong.

ENVY has not accounted for the concurrent iodine spike during the MSLB.

Neither ENVY nor the NRC staff explained why the important contribution of the concurrent iodine spike to the radiological consequences was not included in the calculations.

- d. The MSLB event outside containment ends with the closure of the MSIV, 6.8 seconds from event initiation and therefore it is terminated prior to the activation of the dry well sprays. For this reason ENVY should not be allowed to take credit for iodine deposition in the dry well during the MSLB event.
- e. Credit for iodine deposition in the steam lines is not appropriate for the limiting main steam line, MSLB outside containment event. The high flow rates and the high turbulence through the broken steam line will shear off the pipe wall any fission products, especially those which may be deposited on layers of rust and/or scale. Blow downs in reactor coolant pipes are usually accompanied in initial stages by high radiation levels because of the removal of fission products, CRUD, scale and/or corrosion from the pipe walls.

Clearly, the forgoing discussion in items a-e, including item references and the ACRS statement below, indicates that the present approach to treating the iodine spike is non-conservative.

ACRS Joint Meeting. Subcommittees On Materials & Metallurgy And Thermal-Hydraulic Phenomena, February 4, 2004, Rockville, Maryland
F. Peter Ford and Graham Wallis, Co-Chairmen, presiding.

F. Peter Ford, Co-Chairman:

Page 385

But I think all of us have also been concerned that the response to our issue on the spiking factor is not adequate, and so with Tom's help I'll draft up something to follow up on that concern mainly because it is a non-conservative safety issue,

386

the approach that they seem to be taking.

9. Basis for New Contention Two

NRC RS-001, Insert 9 for Section 3.2 -2.9.3, "Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment," requires that the NRC review the analysis of the radiological consequences of failures outside the containment of small lines connected to the primary coolant pressure boundary. Specifically RS 001 requires that the NRC review " the models and assumptions for the calculation of the radiological doses for the postulated failure; and an evaluation of the primary coolant iodine activity, including the effects of a concurrent iodine spike, and the TSs for the reactor coolant iodine activity." The NRC's acceptance criteria for the radiological consequences of failures outside the containment of small lines connected to the primary coolant pressure boundary are based on GDC-19, GDC 55 and 10CFR100.11.

Insert 9 for Section 2.9.3 is not included in the NRC SER. And therefore the NRC evaluation is incomplete in-so-far as an important and a material matter, which affects public health and safety, has been excluded from the NRC review without explanation.

Further, diligent search of ENVY Technical Specification Proposed Change No.263 w/ Supplements 1-42 has not discovered any comprehensive discussion of the information required to complete a review under RS-001, Insert 9, Section 3.2-2.9.3, "Radiological

Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment". I can only conclude that ENVY has not provided the requisite information in the instant application.

10. Basis for New Contention Three

a. Because of higher propensity to flow induced vibration ("FIV") at EPU conditions, it is reasonable to expect that the cracks in the Vermont Yankee steam dryer, newly discovered during Refueling Outage ("RFO") -24 and 25, will grow in depth and length and thereby decreasing the required stress for dryer fragmentation during steady state operations and under LOCA conditions. Operations with these cracks under the EPU conditions would violate the NRC's acceptance criteria which are based on (1) 10 CFR 50.55a and draft GDC-1, insofar as they require that those systems and components which are essential to the prevention of accidents which could affect the public health and safety or to mitigation of their consequences be designed, fabricated, erected, constructed, tested, and inspected to quality standards commensurate with the importance of the safety functions to be performed.

b. The ENVY statement (Supplement 42 and in extended Testimony before ACRS 12/07/2005) that the newly discovered cracks are acceptable for operation at EPU conditions has no technical basis. Under increased loads such as are expected to occur during DBAs rapid crack growth may occur probably followed by the creation of loose parts. ENVY should not be allowed to operate Vermont Yankee under EPU conditions because it would be in direct violation of Draft GDC 40 and 42.

c. ENVY is wrong in believing that the ascension to power tests will assure the public that that FIV under EPU conditions will not induce high amplitude vibrations on the dryer structure. ENVY did not provide a supporting analysis showing that the strain gage data is applicable and relevant to the prediction of the fatigue loads on the dryer. ENVY should not be allowed to proceed with the proposed EPU because it is in direct violation of GDC 1 and GDC 40 and 42.

d. The NRC Safety Evaluation Report, SER, states in section 2.2.6.1 that plant operations at the proposed extended power level conditions, can result in adverse flow effects on the dryer as well as other components. The adverse conditions of concern are the failure of the dryer from flow-induced vibrations, ("FIV") which can be severe under EPU conditions because of the higher power levels. As has already been demonstrated at Quad Cities, FIV can cause dryer fragmentations with a migration of the broken pieces to other parts of the reactor system. Such pieces may interfere with the operation of the MSIV or they can block core flow channels or block spray cooling nozzles as already occurred at Quad Cities.

e. It thus become clear that even though the steam dryer does not perform a safety function, it must retain its structural integrity to avoid the generation of loose parts that might adversely impact the capability of other plant equipment to perform their safety functions.

f. It is expected that the complex geometry of the dryer and the upper plenum will cause large variations in the local flow velocities over the hood during a LOCA as the steam rushes to exit the broken pipe. According to ENVY it can also be expected that a longer time will be required for the flow to exit the broken pipe at the EPU conditions (Vermont Yankee Nuclear Power Station Technical Specification Proposed Change No. 263 - Supplement No. 42 Extended Power Uprate - Steam Dryer Inspection Results). The large variations in the flow velocities together with the longer transient increase the possibility that the FIV together with the dynamic loads generated by the flowing steam will potentially fragment the dryer. Dryer fragmentation would be further facilitated by the already preexisting cracks on the surface of the Vermont Yankee dryer that were discovered during recent refueling outages, RFO-24 and RFO -25. Twenty surface cracks were found during RFO- 24 and 42 additional cracks were discovered in RFO-25 (Vermont Yankee Nuclear Power Station Technical Specification Proposed Change No. 263 - Supplement No. 42 Extended Power Uprate - Steam Dryer Inspection Results). It is expected that FIV, under EPU conditions, will cause these cracks to grow thereby decreasing the required stress to fragment the dryer under LOCA loads.

g. The failure of the dryer and the formation of loose parts at Quad Cities (NRC INFORMATION NOTICE 2002-26, SUPPLEMENT 2: ADDITIONAL FLOW-INDUCED VIBRATION FAILURES AFTER A RECENT POWER UPRATE January 9, 2004, ADAMS No. ML040080392), the rapid crack formation and growth at Dresden (RIC 2005 Presentation –James Meister – Power Uprates “Exelon Learnings from Extended Power Uprates Presentation to NRC 2005 Regulatory Information Conference,

March 8, 2005, ADAMS No. ML052140189) and crack formation at several other plants operating under EPU conditions clearly demonstrate that rapid crack formation under from FIV is a common mode steam dryer failure at EPU conditions. ENVY has not provided adequate or technically defensible analysis showing that rapid crack propagation will not occur at resonant frequencies during DBA and under varying load conditions during steady state operations.

h. ENVY has not provided adequate or technically defensible supporting analysis to show that the cracks newly discovered cracks would not propagate under DBAs conditions. The discovered cracks indicate that the stresses in the dryer may have already exceeded design levels. The dynamic loads under and FIV following DBA could result in rapid crack growth. The proposal to operate at EPU conditions requires that safety analyses for those DBAs whose results depend on power level be recalculated at the higher power level. This requires that crack growth and potential dryer fragmentation be evaluated at the higher EPU flow rates. ENVY has not provided an adequate or technically defensible evaluation of crack growth and potential dryer fragmentation under EPU conditions.

i. The fatigue loads on the dryer are based on theoretical calculations of two computer models: the Computational Fluid Dynamic Model (CFD) and the Acoustic Circuit Model (ACM). Neither the CFD nor the ACM were bench marked against properly scaled dryer structure. The complex flow geometry of the dryer and the steam plenum precludes strictly theoretical considerations as was done by ENVY (Supplement 42) Consequently, the use of these computer models to predict loads on the dryer from data which is

generated on instruments that are distanced from the dryer is unreliable. The ACM and the CFD can not predict reliably high cycle fatigue due to fluctuating loads during normal operations and following DBAs because they were not benched marked against full scale tests or at least properly scaled tests.

In part, because of the uncertainties in the CFD and ACM codes, the ACRS (tr. 12/07/2005 at pages 9,12-14, 25, 29, 60) raised serious concerns regarding ENVY statements that the code predictions are conservative.

j. Addition in the Final SER of the NRC Staff's acceptance of ENVY steam dryer inspection results and ENVY analysis as determinative of no further crack growth or very slow crack growth (Final SER page 337) is a significant material change from the Draft SER and in my professional opinion technically unjustified.

11. Conclusion

For the above-discussed reasons, it is my professional opinion that New England Coalition's new contentions addressing the above-described inadequacies are supported by credible evidence based upon an examination of topically relevant industry and NRC documents; and of Docket 50-271 Technical Specification Proposed Change No. 263 documents, and NRC staff and licensee statements before the NRC Advisory Committee on Reactor Safeguards, submitted as part of the license amendment process for the extended power uprate in this case.

In my professional opinion, the above-discussed issues are included in New England Coalition's new contentions and the Atomic Safety and Licensing Board should examine all of these issues in the context of a full hearing before making a final decision on the Vermont Yankee EPU application.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this day, April 6, 2006 at Rockville, Maryland.

A handwritten signature in cursive script, reading "Joram Hopenfeld, PhD". The signature is written in black ink and is positioned above a horizontal line.

Joram Hopenfeld, PhD

UNITED STATES
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of

ENTERGY NUCLEAR VERMONT YANKEE, LLC
and ENTERGY NUCLEAR OPERATIONS, INC.
(Vermont Yankee Nuclear Power Station)

April 6, 2006

Docket No. 50-271

ASLBP No. 04-832-02-OLA

Office of the Secretary
ATTN: Rulemaking and Adjudications Staff
Mail Stop: O-16C1
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Rulemaking and Adjudications Staff,

Please find for filing in the above captioned matter one original and two copies of
**NEW ENGLAND COALITION'S REQUEST FOR LEAVE TO FILE NEW
CONTENTIONS.**

Thank you for your kind assistance in making this filing,



Raymond Shadis
Pro se Representative
New England Coalition
Post Office Box 98
Edgecomb, Maine 04556
207-882-7801
shadis@prexar.com