

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

May 16, 2006 (11:58am)

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)

May 8, 2006

Docket No. 50-271-OLA

ASLBP No. 04-832-02-OLA

**NEW ENGLAND COALITION'S REPLY  
TO NRC STAFF AND ENTERGY'S RESPONSES  
TO 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 Reply to NRC Staff and Entergy's Responses to New England Coalition Request for Leave to File New Contentions pursuant to 10 CFR §2.309(h)(2).

**II. BACKGROUND**

A. On April 6, 2006, New England Coalition filed a Request For Leave to File Late Contentions in accordance with 10 CFR § 2.309 (f) in the above captioned matter. This Request was timely insofar as the proposed new contentions reflected omissions in the U.S. Nuclear Regulatory Commission ("NRC") staff Final Safety Analysis Report provided to New England Coalition by U.S. Mail on March 6, 2006. However, insofar as the more broadly drawn information giving rise to basic safety concerns was known to New England Coalition much earlier, New England Coalition requested that the board weigh the eight balancing factors for granting late filed contentions under 10 C.F.R. § 2.309 (c).

B. On May 1, 2006, Entergy Nuclear Vermont Yankee ("Entergy" or "ENVY") filed a timely Response electronically at 4:51 PM.

C. On May 1, 2006, NRC Staff filed a Response electronically at 6:39 PM.

### **III. DISCUSSION**

**A. Both NRC Staff and Entergy Responses argue that New England Coalition's Request for Leave to File New Contentions should be denied.**

**B. Both NRC Staff and Entergy Responses assert that New England Coalition's proposed new contentions are filed substantially late without good cause, unredeemed by balancing factors, and impermissibly vague.**

**C. As to technical issues, neither NRC Staff nor Entergy Responses are accompanied by supporting affidavit or declaration of a qualified expert, nor anyone else. Thus no NRC Staff or Entergy technical arguments; no arguments regarding the substantive merits of Dr. Joram Hopfenfeld's Declaration in Support of New England Coalition's Request For Leave To File New Contentions are provided sufficient evidentiary basis to credibly inform the record or the Board's decision. Nonetheless, Dr. Hopfenfeld addresses the technical issues raised in his Declaration in support of this Reply, attached as, Exhibit One.**

**D. NRC Staff has provided little if anything in the way of argument regarding the substance on New England Coalition's proposed new contentions except to aver that the issues in them have been review by NRC Staff. With all due respect, this line of argument is at best, irrelevant. If NRC staff were both pure in motive and infallible there would be no need of this hearing process.**

**E. Where Entergy may have felt it inadequate to attempt controverting the message, they have attempted to attack the messenger; arguing that Dr. Hopfenfeld, a widely respected 45 year veteran in the disciplines of materials degradation, thermal hydraulics (including development of computer codes in current use by NRC and industry), fluid structure interaction, radioactivity, and instrumentation, is not qualified as an expert because his resume' "suggests that Dr. Hopfenfeld has considerable experience on pressurized water reactor steam generator tube degradation issues, but none of the topics NEC seeks to raise here."**

- 1. Dr. Hopfenfeld reaffirms and explains his credentials in the attached Declaration at 8 (d), page 7.**
- 2. Entergy gratuitously attempts to invoke a standard of experience or expertise it did not invoke for Mr. Gundersen (NEC), Mr. Sherman (DPS), or Mr. Nichols (ENVY) or, so far any other witness, including those of NRC Staff.**

3. Dr. Hopenfeld's credentials and expertise were acknowledged by this Board in accepting his support in defense on NEC Contention 3 on the issue of full transient testing – an issue that surely fully encompasses the disciplines required for a valid expert on three proposed new contentions.

**F. Entergy seeks to bring in to question the ability of New England Coalition to contribute to a sound record by questioning the abilities of its expert witnesses (and maybe the motives of both New England Coalition and its experts).**

1. Entergy says that there is no indication that Dr. Landsman has any prior experience ...on the subject matter of the new contentions. "Our fault", supposes New England Coalition, for mentioning our PhD. Civil Engineer, former career NRC staffer, Dr. Ross Landsman. No Dr. Landsman, who is focusing on the Alternate Cooling System, is not expected to testify on the proposed new contentions, but he nonetheless is a resource to help New England Coalition help the Board to create a solid record.
2. Entergy says, " It is interesting to note that neither Dr. Landsman nor Dr. Hopenfeld was put forward by NEC when it presented testimony on the steam dryer issues before the Vermont Public service Board in 2003 (page 22). Interesting, perhaps. But, is it relevant? At the time New England Coalition was proceeding with experts volunteering most of their time and the issue, perforce federal preemption, was plant reliability, not nuclear safety. At the time, Entergy was sanctioned with a record fine of \$51, 000 for discovery irregularities and presenting a non-conforming cross-examination exhibit. That too is, of course, irrelevant and the Board should not allow the record to become cluttered with such sniping and innuendo.
3. As New England Coalition pointed out in its Request, the Board has already found that New England Coalition is capable of helping to build a sound record, by accepting two contentions supported by New England Coalition experts, including Dr. Hopenfeld.

**G. Entergy attacks New England Coalition's pro se representation status,**

NEC invokes – as it frequently does – its “naiveté as a pro se intervenor” in attempt to excuse its failure to raise its contentions in a timely manner. NEC Request at 12. This argument provides no justification for NEC’ untimeliness. First, NEC’s decision to participate as pro se intervenor is its own choice. NEC was represented by counsel in this proceeding for over a year, until October 1, 2005, when its counsel withdrew. It is currently represented by counsel in the Vermont Uprate proceeding (Vermont Public Service Board Docket 6812), see Exhibit 1 to this Response, and Reportedly intends to retain counsel to assist it in the VY License renewal proceeding (cites newspaper article). Having chosen to engage counsel to assist it on other challenges to VY but not here, NEC has forfeited any right to complain about its pro se status and limited resources and must bear the consequences of its decision to participate pro se herein.

New England Coalition respectfully offers as simile that which W.C. Fields inscribed on his tombstone  
“But for the honor, I’d rather be in Philadelphia.”

1. If, as Entergy states, “NEC invokes ...its naiveté as prose intervenor...frequently,” Entergy should cite the occasions. And should, by some miracle of nit-picking, it be able to find in the record a few or several examples of New England Coalition reminding the Board that it is a *pro se* intervenor, what of it, but consistency? To paraphrase Jefferson, Rights are not diminished by exercise.
2. Entergy invokes the visage of legal representation past, “ NEC was represented by counsel...” How true, and but for lack of ready wherewithal, New England Coalition might still have counsel. As it was, more than one-third of the organization’s revenues were going to pay counsel. For a sense of scale, one might refer to Entergy’s website homepage, [www.Entergy.com](http://www.Entergy.com), where one would find Entergy’s income listed at approximately \$10 billion; thus a comparable \$3.3 billion in attorney’s fees. Entergy holds that New England Coalition is a pro se intervenor by its own choice. No, New England Coalition simply could not afford counsel, no more than Entergy could if its attorneys were absorbing a third of its gross revenue.
3. Entergy points to New England Coalition current representation by counsel before the Vermont Public Service Board with no demonstrable apprehension of the fact that said counsel (a) does not practice before NRC, and (b) is providing counsel at public service rates, and (c) is doing work that New England Coalition’s *pro se* before the ASLB would have to do if he were at once Alan Dershowitz and able to bi-locate.

4. Entergy cites an Associated Press newspaper article to show that New England Coalition intends to hire counsel for ENVU license extension proceedings. (a). New England Coalition is waiting for the Board to strike this as hearsay, pursuant to 10 C.F.R. § 2.319(d), and chastise Entergy as the Board, in its May 12, 2005 Order, chastised New England Coalition for offering the Board a newspaper article in support of its estimation that there would not likely be a hearing before the last quarter of 2005. Therein, the Board struck...” the May 11, 2005 letter from counsel for the New England Coalition (NEC), and attached newspaper clipping, from the record of this proceeding as irrelevant, immaterial, and unreliable.” That said, if New England Coalition is trying to raise funds to field an attorney in another NRC proceeding (not yet commenced), but the Coalition has already, for lack of funds, been forced to go the *pro se* path in this proceeding, what of it?
- H. Entergy invokes the “C” word. Borrowing from the Board’s Order of March 23, 2006, Entergy accuses New England Coalition of a “cavalier” attitude to toward scheduling and deadlines because in Entergy’s view (and counting from March 6<sup>th</sup>) New England Coalition’s proposed new contentions based on the omissions in the Final SER are one day late.
1. While this document may have been posted on the NRC website earlier than March 6<sup>th</sup>, because of its size in pdf format, several megabytes, it is simply impossible to download using a dial-up connection (all that is available in our location). Further, NRC staff found the Final SER file too large to transmit via e-mail. March 6<sup>th</sup> is the date that NRC Staff claims the Final SER was delivered to the Edgecomb, Maine Post Office. According to 10 CFR § 2.306, “The day of the act, event, or default after which the designated period of time begins to run is not included... Whenever a party has the right or is required to do some act within a prescribed period after the service of notice or other paper upon him or her and notice is served upon him or her and the notice is served upon by first class mail, five days (5) are added to the prescribed period. is not included. Two (2) days are added to the prescribed period when a document is served by express mail or expedited delivery service.

2. With all due respect to the Board's discernment and the Board's Order of March 23, 2006, it is time to do away with the urban legend of New England Coalition's "cavalier attitude" toward deadlines and scheduling, as invoked in this matter by Entergy. While it may be that case law weighs against allowance for limited resources of the pro se intervenor or citizen's group intervenor, allowance is constantly and consistently made because the attorneys for NRC Staff or the licensee are engaged in legal proceedings or because celebration of some religious holiday is invoked. What else is this, where parties are represented by multiple counsels, but an invocation of limited resources? New England Coalition, a non-profit public advocacy organization, is headquartered in Brattleboro, Vermont with a membership and constituency direct affected by Entergy Corporation's purchase and initiatives to uprate and extend the license of Vermont Yankee Nuclear Power Station. Entergy, according to its website ([www.Entergy.com](http://www.Entergy.com)) is a \$14 billion dollar corporation with 26, 000 employees. Within a short period of three years, 2003-2006, Entergy has retained no less than four major law firms, and pursued permitting and licensing initiatives before two Vermont agencies and two federal agencies involving no less than six significant actions that affect New England Coalition members and constituents. New England Coalition has a hard time meeting deadlines not because it has a "cavalier" attitude, but because it is besieged by a storm of initiatives which it perceives as working against its interest and to which it takes rightful exception.

New England Coalition respectfully requests: let no one take the foregoing explanation as a complaint, it is a simple statement of fact.

Finally, New England Coalition incorporates herein by reference all of the good reasons contained in its Request for Leave to File New Contentions.

**CONCLUSION** New England Coalition respectfully requests that where this Board has discretion, 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. NRC Staff and Entergy arguments regarding timeliness, notwithstanding, 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:

A handwritten signature in black ink, appearing to read 'Raymond Shadis', written over a horizontal line.

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cc: As per Certificate of Service

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

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

May 5, 2006

Docket No. 50-271

ASLBP No. 04-832-02-OLA

**DECLARATION OF DR. JORAM HOPENFELD  
IN REPLY TO NRC STAFF AND ENERGENCY RESPONSES TO  
NEW ENGLAND COALITION'S APRIL 6, 2006  
REQUEST FOR LEAVE TO FILE 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.

In addition, I have offered expert testimony in support of New England Coalition's Request for Leave to File New Contentions, which was filed April 6, 2006.

5. I have reviewed the NRC Staff and Entergy Nuclear Vermont Yankee ("ENVY" Responses to New England Coalition's April 6, 2006 Request for Leave to File New Contentions and now respectfully submit the following in support of New England Coalition's Reply.

#### **6. Proposed First New Contention**

Entergy asserts that the radiological issues in connection with the pre accident and concurrent Iodine spikes be dismissed because New England Coalition does not cite where in the EPU application the assumptions regarding the Iodine spiking were made.

As discussed in the New Contention document, New England Coalition disagreed with Entergy that the iodine source term is not effected by the EPU. Entergy provided no data to support the above assumption even though this assumption has a major impact on the calculations of the radiological consequences.

The important effect of iodine concentration on the iodine spike was completely ignored by Entergy as evidenced by the fact that they have adopted the AST- RG-1.183 guidelines (pre accident iodine spike concentration of 1.1 microcuries per gram and 4 uCi/gm dose equivalent). Since the RG -1.183 guidelines were formulated to non-EPU conditions it is the responsibility of the user as specified in the guide to justify the applicability of the guideline to the specific user application. Entergy failed to provide the required justification.

In fact, RG 1.183, 2.4 specifies that **"The AST must have a defensible technical basis supported by sufficient experimental and empirical data, be verified and**

**validated, and be documented in a scrutable form that facilitates public review and discourse.**

Because Entergy has ignored the iodine spiking issue entirely, and provided no specific calculations of radioactivity calculations it was not possible for the New England Coalition to cite the specific paragraph where Entergy made incorrect assumptions regarding iodine spiking. Instead the New England Coalition provided a specific discussion why the iodine spiking is important to EPU conditions. This discussion is summarized below.

The issue of iodine spiking in accident analysis is very important, the ACRS (NUREG 1740, ACRS hearings 02/03, 04/04) has raised concerns of how radiological calculations are made especially when data is extrapolated to new plant conditions. The NRC is currently working on a related Generic Safety Issue (GSI-197). Entergy use of RG-1.183 as discussed above is not applicable to EPU conditions because of the reduction in iodine concentration in the coolant.

The conflict between Entergy and the New England Coalition is as follows: Entergy believes that the AST concentrations as specified in AST- RG-1.183 guide lines and discussed above are applicable to the EPU. The New England Coalition position is that these concentrations must be modified because they are not applicable to EPU conditions.

Entergy's request for dismissal of the proposed new contention regarding iodine-spiking issues is without technical merit should be denied. The New England Coalition met its obligation under 10CFR2.309 (f) by showing specifically where the Entergy

methodology regarding radiological releases is deficient and where the dispute between the parties exists

## **7. Proposed Second New Contention**

Entergy alleges that the Proposed Second New Contention does not raise a Litigable Issue. I strongly disagree. There is now a clear disagreement between the New England Coalition and Entergy regarding the need to evaluate the radiological consequences of small line failures outside containment:

New England Coalition's position is that the radiological consequences of small bore piping failures must be evaluated for EPU conditions in order to assure the public that the dose releases from such failures are within accepted limits.

Entergy's position is that there is no need to analyze the radiological releases from the failures of the above pipes.

To support its position Entergy relies (p. 27 and p.28) on the following statements:

However, according to the very NRC on which NEC purports to rely, an EPU applicant who submits an AST application need not submit an analysis of consequences of small bore line breaks" See RS-001, Review standard for Extended Power Uprates (Rev 0, Dec. 2003 ) Adams accession number ML0236106659 at p. 59( Matrix 9 p.2) ...

RS 001- Matrix 9 states that this review criteria (reference to small lines) is applicable to EPU's that do not utilize alternative source term VYNPS previously submitted an Alternative Source Term License Amendment...

New England Coalition's review of RS 001 Matrix 9 (Exhibit 7, Entergy Response) does not lead to the same conclusions that Entergy apparently drew from Matrix 9 . Matrix 9 states that the analysis applies to " EPUs that do not utilize alternative source term whose failure of small lines carrying coolant outside containment result in fuel failure." Thus, Matrix 9 refers only to a subset where there

is a postulated fuel failure; it does not provide an exemption to the analysis of small lines when they **do not** result in fuel failure. New England Coalition does not agree with Entergy's conclusion that Matrix 9 does not require them to conduct the analysis. There is a clear difference between the New England Coalition and Entergy in the interpretation of RS-001.

The above difference notwithstanding, New England Coalition believes that the EPU introduces new and important effect that must be analyzed. The EPU lowers the iodine concentration in the coolant, which in turn increases the magnitude of iodine spikes and the source term (see attached figure). The amount of radioactivity released to the environment would depend on the intensity of the iodine spike, the concentration of the iodine in the coolant and the required time to isolate a given ruptured pipe.

The public must be assured that such a release does not affect health and safety.

In conclusion the New England Coalition has demonstrated above that the Proposed Second New Contention has a factual basis and that a material dispute exists between the New England Coalition and Entergy. Therefore, the Proposed Second New Contention satisfies admissibility requirements under 10.CFR 2.309(f)

#### **8. Proposed Third New Contention**

Entergy asserts that the subject contention should be dismissed because it is based on "...vague and unsupported assertions by Dr. Hopfeld." Entergy also alleges that Dr. Hopfeld has no experience in the topics that have been raised by the New England Coalition.

New England Coalition denies these assertions, has shown Proposed New Contention Three is factual and that a dispute exists between the New England Coalition

and Entergy and therefore it satisfies all the admissibility requirements under 10.CFR 2.309(f)

The New England Coalition position regarding the subject contention is based on the fact that Entergy does not have reliable tools to predict high cycle fatigue on the dryer. This is because data from a full-scale dryer was not used to benchmark the CFD/ACM computer codes. The small-scale tests that were used instead are not sufficient. Consequently, Entergy does not know whether the existing cracks (Supplement 42, 11/05) will result in dryer fragmentation, which could then challenge the safety of the plant.

In addition to a discussion regarding the benchmarking issue, New England Coalition cited specific references, (ACRS hearing 12/07/2005, pages 9,12-14, 25, 29, 60), the Final SER (provided to New England Coalition on March 6, 2006), and License Amendment Supplements through 45 (most recently, Amendment 44, ML0060170320, added to ADAMS 01/25/25 and Supplement 45, ML060590261, added to ADAMS 03/08/2006) where additional details relevant to this issue were provided.

Discussion contained in my Declaration supporting New England Coalition's Proposed Third New Contention, together with the referenced documents, provides specific details as to why New England Coalition holds the Entergy methodology to be defective. Entergy on the other hand believes that their methodology is valid. Therefore, it is clear that a dispute exists between the NEC and Entergy regarding the validity of the methodology for predicting dryer behavior under EPU conditions.

Following are my additional comments regarding Entergy allegations.

a. Vagueness

It is a gross distortion on Entergy's part to assert, as it does, that New England Coalition merely made vague and unsubstantiated allegations and failed to state why the CFD/ACM methodology is defective. New England Coalition's Request For Leave to File New Contentions and my declaration in support of Proposed Third New Contention clearly state why the methodology is inadequate.

**b. EPU documents**

Entergy asserts that the New England Coalition did not indicate where the analysis in Supplements, 8 (7/2/04), 13 (9/14/04) 15(9/23/04), 26(3/31/05), 27(4/5/05), 29(6/2/05), 30(8/1/05) and 33 (9/14/05) was inadequate. New England Coalition believes that these documents are not relevant to the subject contention because they all rely on the referenced CFD/ACM methodology. Since this methodology underlines the fatigue loads on the dryer it is not necessary to be more specific and cite the documents referenced by Entergy .

**c. Analysis of crack propagation potential**

Entergy misrepresents the facts by stating that Dr. Hopensfeld is asserting that Entergy has performed no analysis of crack propagation potential. I have made no such sweeping allegation.

**d. Dr. Hopensfeld's Qualifications and Credibility**

New England Coalition emphatically disagrees with Entergy's assertion that Dr. Hopensfeld lacks any experience or expertise in connection the technical subject area of New England Coalition's proposed new contentions. These contentions require

experience in Thermal Hydraulics, Fluid Structure Interaction, Radioactivity, Material Degradation and Instrumentation.

As shown in my Curriculum Vitae, which I attached as Exhibit A to New England Coalition's Answer To Entergy's Motion For Summary Disposition of New England Coalition Contention 3, (12/23/2005) and in the list of publications (see Attachment) in peer reviewed journals, I have achieved recognition in the above fields during my 45 year of professional career. In addition to the above publications I have published numerous reports in the above fields, and obtained eight relevant patents.

While at AEC/DOE, I was responsible for the development of thermal hydraulic codes (COBRA, RELAP) and designs for both nuclear and fossil power plants.

While with the NRC, I was responsible for the MB-2 project, which generated thermal hydraulic data for benchmarking computer codes during reactor transients. I initiated and managed a program on iodine spiking (see Publications 3 and 5). This program also produces a commonly cited work by J.P. Adams "The Iodine Spike Release Rate During a Steam Generator Tube Rupture" Nuclear Technology, 94 (1990) 361

Entergy also states that Dr. Hopenfeld's experience is only limited to material degradation issues in PWR steam generators. It may be of interest to Entergy to know that flow induced vibrations, FIV, are thermal hydraulic phenomena that have for years plagued steam generator tubes. FIV related phenomena are central to the New England Coalition contentions. The Entergy argument that Dr. Hopenfeld does not have the required credentials or experience to stand before the ASLB and testify regarding the issues that are raised in New England Coalition's Proposed New Contentions has no merit and should be rejected.

**9. Conclusion**

Having reviewed and evaluated the Responses of the NRC Staff and Entergy Nuclear Vermont Yankee to New England Coalition's Proposed New Contentions, and in consideration of the foregoing good reasons and supporting documentation, it remains my professional opinion that New England Coalition's Proposed New Contentions addressing the above-described inadequacies are supported by credible evidence.

Based upon my long experience in the employ of the United States Nuclear Regulatory Commission and based on the documents referenced herein, it also remains my professional opinion that the issues discussed above are included in New England Coalition's Proposed New Contentions and raise serious public health and safety considerations germane to the subject of the license application in this case.

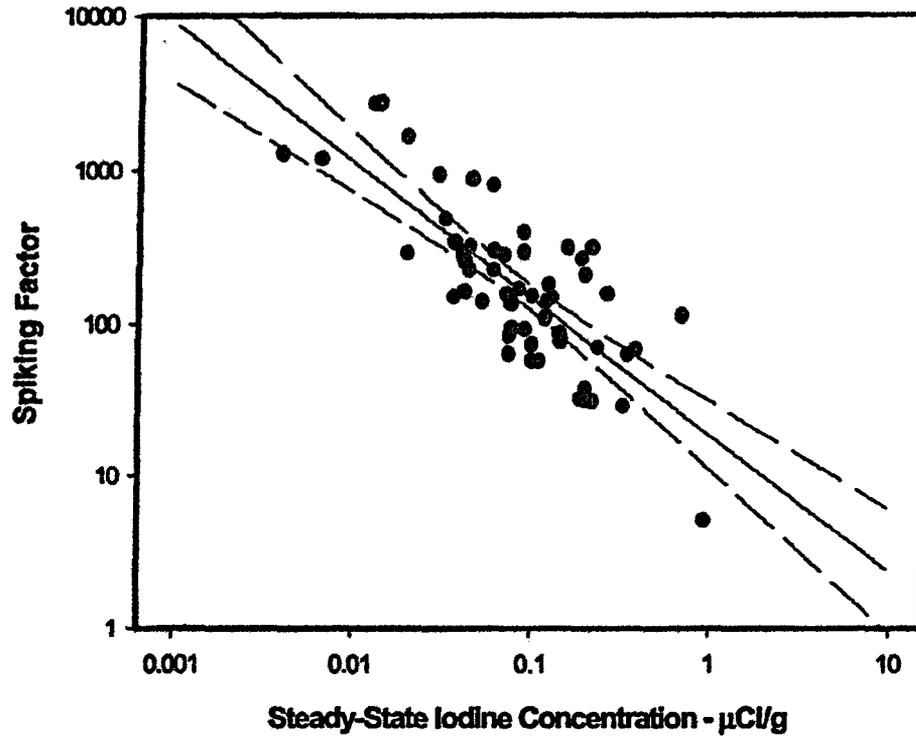
It remains my professional opinion that the Atomic Safety and Licensing Board should examine all of these issues in the context of a full hearing before making a final decision on the Vermont Yankee EPU application.

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

Executed this day, May 5, 2006 at Rockville, Maryland.

  
Joram Hopfenfeld, PhD

**Correlation of Bounded Iodine Spiking Factor Data**



**Correlation of Bounded Iodine Spiking Factor Data with Initial Iodine Concentration in the Coolant.** Solid circles denote values of the spiking factor published by Adams and Sattison multiplied by a factor of 3. The solid line is the prediction of the correlation described in the text. Dashed lines define the 95% confidence interval for predictions from the correlation.

## Attachment TWO to Hopenfeld Declaration

### **Dr. HOPENFELD'S PUBLICATIONS IN PEER REVIEWED JOURNALS**

1. Distributed Fiber Optic Sensors for Leak Detection In Landfills, Proceeding of SPIE Vol 3541 (1998)
2. Continuous Automatic Detection of Pipe Wall Thinning, ASME Proceedings of the 9th, International Conference on Offshore Mechanics and Arctic Engineering. Feb. 1990
3. Iodine Speciation and Partitioning in PWR Steam Generators, Nuclear Technology, March 1990
4. Comments on "Assessment of Steam Explosion Induced Containment Failures" Letter to the Editor, Nuclear Science and Engineering, Vol. 103, Sept. 1989
5. Experience and Modeling of Radioactivity Transport Following Steam Generator Tube Rupture, Nuclear Safety, 26,286, 1985
6. Simplified Correlations for the Predictions of Nox Emissions from Power Plants. AIAA Journal of Energy, Nov.-Dec., 1979
7. Grain Boundary Grooving of Type 304 Stainless Steel in Armco Iron Due to Liquid Sodium Corrosion, Corrosion, 27, No.11, 428, 1971
8. Corrosion of Type 316 Stainless Steel with Surface Heat Flux in 1200 Flowing Sodium, Nuclear Engineering and Design, 12; 167-169, 1970
9. Prediction of the One Dimensional Cutting Gap in Electrochemical Machining, ASME Transaction, J. of Engineering for Industry, p100 (1969)
10. Electrochemical Machining- Prediction and Correlation of Process Variables, ASME Transactions, J. of Engineering for Industry, 88:455-461, (1966)
11. Laminar Two-Phase Boundary Layers in Subcooled Liquids, J. of Applied Mathematics and Physics (ZAMP), 15, 388-399 (1964)
12. Onset of Stable Film Boiling and the Foam Limit, International j. of Heat Transfer and Mass Transfer, 6; 987-989 (1963) ) (co-author)
13. Operating Conditions of Bubble Chamber Liquids, The Review of Scientific Instruments, 34, 308-309. (1963); co-author
14. Similar Solutions of the Turbulent Free Convention Boundary Layer for an Electrically Conducting Fluid in the Presence of a Magnetic Field, AIAA J. 1:718-719 (1965)

**+UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

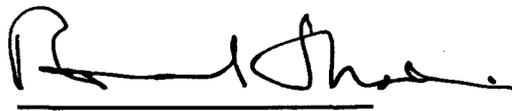
In the Matter of ) ) ENTERGY NUCLEAR VERMONT YANKEE) ) LLC and ENTERGY NUCLEAR ) OPERATIONS, INC. ) ) (Vermont Yankee Nuclear Power Station) )	Docket No. 50-271-OLA  ASLBP No. 04-832-02-OLA
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**CERTIFICATE OF SERVICE**

I hereby certify that copies of "NEW ENGLAND COALITION'S REPLY TO NRC STAFF AND ENTERGY RESPONSES TO NEW ENGLAND COALITION'S REQUEST 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 and by e-mail as indicated by a double asterisk (\*\*), this 8<sup>th</sup> day of May 2006

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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)

May 8, 2006

Docket No. 50-271

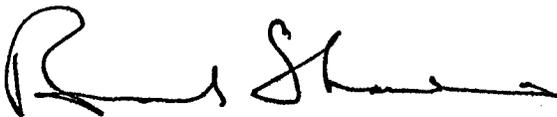
ASLBP No. 04-832-02-OLA

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 REPLY TO NRC STAFF AND ENTERGY  
RESPONSES TO NEW ENGLAND COALITION'S REQUEST FOR LEAVE TO  
FILE NEW CONTENTIONS.**

Thank you for your kind assistance in making this filing,



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