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ADJUDICATIONS STAFF

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE COMMISSION

In the Matter of	July 23, 2009
ENTERGY NUCLEAR VERMONT YANKEE, L.L.C. and ENTERGY NUCLEAR) OPERATIONS, INC.	Docket No. 50-271-LR
	ASLBP No. 06-849-03-LR
(Vermont Yankee Nuclear Power Station)	

NEW ENGLAND COALITION'S PETITION FOR REVIEW OF THE LICENSING BOARD'S FULL INITIAL DECISION, LBP-09-09

I. INTRODUCTION

Pursuant to 10 C.F.R. § 2.341(b), (New England Coalition, Inc (NEC) , through its *pro se* representative, Raymond Shadis, now submits this Petition for Review of the Licensing Board's Full Initial Decision, LBP-09-09 of July 8, 2009.

NEC is a non-profit 501C3 corporation registered in the State of Vermont and maintaining offices within 10 miles of Vermont Yankee Nuclear Power Station , a thirty-five year old reactor-driven steam-electric generating station seeking a 20 year renewal of its operating license, now due to expire in 2012. Risk levels and aging effects on this station are exacerbated by a 120 percent extended power uprate approved by NRC in 2006. Numerous concerned NEC members live within the Vermont Yankee emergency planning zone, which extends into Vermont, New Hampshire, and Massachusetts, and more members live within a 50-mile radius.

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NEC is the sole intervenor in the above proceeding to bring a contention (filed May 26, 2006) through the more than three years of legal and procedural challenge to Evidentiary Hearing, Post-Hearing Brief, Partial Initial Decision, and Full Initial Decision (July 8, 2009).

In this Petition, NEC takes exception to the ASLBP's ("Board") Full Initial Decision (FID) of July 8, 2008 and by extension the Board's Partial Initial Decision (PID) of November 24, 2008 ,which the Full Initial Decision references and upon which it rests and depends.

The staff of the U.S. Nuclear Regulatory Commission ("Staff") has petitioned for review of the Atomic Safety and Licensing Board's ("Board") Partial Initial Decision (Ruling on Contentions 2A, 2B, 3 and 4), LBP-08-25, 68 NRC ___ (Nov. 24, 2008) (slip op.) ("PID" or "LBP-08-25").

NEC submits that Commission review is warranted because:

(1) The FID is based on clearly erroneous perceptions of the facts inherent in the scientific, technical, and engineering issues raised in fatigue analysis of reactor components,

(2) The FID peremptorily and unjustly abrogates the intervenor's right to present his case with respect to an accepted contention; and the FID raises substantial questions of NRC policy, practice, and procedure under the Atomic Energy Act that are without governing precedent.

(3) Furthermore, Commission review is in the public interest because this decision raises issues that could affect public confidence in the NRC and its hearing

process, including credence accorded pending and future license renewal determinations.

Therefore, NEC respectfully requests that the Commission,

1. review the Board's decision with respect to NEC's "new contention,
2. order an examination by independent experts of the Board's Findings of Fact with respect technical and scientific metal fatigue issues,
3. following such an examination, make a determination as to safety and policy implications, and, if warranted by the facts,
4. order full adjudication of NEC's Contention 2 by a newly constituted ASLB Panel.

III. BACKGROUND

On January 25, 2006, Entergy filed an application to extend its operating license for the VYNPS for 20 years beyond the current expiration date of March 21, 2012[1]. NRC published a notice of opportunity to request a hearing on the application and among several requests for intervention, NEC filed a Petition for Leave to Intervene on May 26, 2006.

An ASLB Panel was constituted and on September 22, 2006, the Board issued an order granting the hearing requests of two entities, the Vermont Department of Public Service (DPS) and NEC. LBP-06-20, 64 NRC 131 (2006). Denied intervenor status was the State of Massachusetts and the Town of Marlboro (VT). NEC submitted six

[1] [VYNPS] License Renewal Application (Jan. 25, 2006), ADAMS Accession No. ML060300085 [Application]. Entergy has since supplemented and amended its application several times.

contentions of which four were initially accepted for litigation[2]. One of the admitted contentions dealt with

The Board accepted NEC's contention on metal fatigue, as follows,

NEC Contention 2: Entergy's License Renewal Application does not include an adequate plan to monitor and manage the effects of aging [due to metal fatigue] on key reactor components that are subject to an aging management review, pursuant to 10 C.F.R. § 54.21(a) and an evaluation of the time limited aging analysis, pursuant to 10 C.F.R. § 54.21(c). Id. at 183.

NEC Contention 2 is based on the fact that Entergy's renewal application specified that, if the license were extended for 20 years, certain key components and piping of VYNPS would have a metal fatigue cumulative use factor (CUF) greater than unity (CUF > 1), meaning that they would be likely to develop metal fatigue "engineering" cracks that might eventually affect their function. Application at 4.3-6 to 4.3-8. Under such circumstances, the applicant is required to "demonstrate" that the effects of aging (i.e., cracks) "will be adequately managed for the period of extended operation." 10 C.F.R. § 54.21(c)(1)(iii).

In response to this requirement Entergy offered that it would satisfy the regulation either by refining its CUF calculations to show that the CUFs were really less than unity, or by managing the metal fatigue cracking at locations where the CUF remained greater than unity via an inspection and replacement program.[3]

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[2] Among the two aging management contentions rejected by the Board was , Contention 5 – The License renewal application does not have an adequate plan to manage and monitor aging of the condenser. The condenser has since repeatedly sprung leaks requiring power reductions and it is now slated for replacement..

[3] Application at 4.3-7; Entergy's Answer to [NEC]'s Petition for Leave to Intervene, Request for Hearing, and Contentions (June 22, 2006) at 18-19.

NEC contended that Entergy's application failed to demonstrate that it would safely manage the metal fatigue aging and cracking process, and instead simply provided a list of three options: (a) recalculate the CUFs, (b) inspect affected locations, and/or (c) repair or replace pipes or components, as needed, at locations where calculated CUFs were greater than unity.[4]

On September 22, 2006, the Board concluded that NEC Contention 2 satisfied the admissibility criteria of 10 C.F.R. § 2.309(f)(1). This was based on NEC's position that Entergy's application contained what amounted to a list of options for the development of future plans, not an actual demonstration of regulatory compliance. LBP-06-20, 64 NRC at 186-87. The Board noted that efforts by Entergy's attorneys to justify the options presented in the Application, for example by claiming that reanalyzing the CUF factors is a feasible option, failed to address NEC's concern that the Application provided no information at all about how Entergy intended to reanalyze the CUF factors if that becomes necessary. Should reanalysis yield a CUF greater than 1, Entergy stated that it would implement "management of fatigue at the affected locations by an inspection program that has been reviewed and approved by the NRC (e.g., periodic non-destructive examination of the affected locations at inspection intervals to be determined by a method acceptable to NRC)" Id. (citations omitted).The Board found this to be "vague."

On June 12, 2007, Entergy announced that it had been performing, with the help of its consultants, revised fatigue analyses incorporating environmentally assisted fatigue (CUFen) Tr. at 568-69. If the revised analyses showed all CUFs less than unity

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[4] Application at 4.3-7; Entergy's Answer to [NEC]'s Petition for Leave to Intervene, Request for Hearing, and Contentions (June 22, 2006) at 18-19.

(1<CUF), then said Entergy this would show that environmentally assisted metal fatigue would be low enough during the 20-year renewal period to eliminate the need for Entergy to have a program to manage such metal fatigue. Entergy's counsel offered that, when finalized, these revised analyses would render NEC Contention 2 moot, Tr. at 569 and that, on June 7, 2007, Entergy had provided the parties with draft copies of the rnew fatigue analyses Tr. At 572-74.

On July 12, 2007, NEC filed NEC Motion One, seeking the admission of a new contention challenging the adequacy of the revised metal fatigue analyses contained in the draft CUF analyses disclosed in June.

Entergy then answered, requesting that a ruling on the motion await release of the final report of the revised analyses.] In its reply, NEC agreed to the delay[5].

On August 2, 2007, counsel for Entergy provided all parties with a copy of its final reports and recalculations regarding the metal fatigue and CUF issues.[6]

And so, on September 4, 2007, NEC filed NEC Motion Two, superseding NEC Motion One; seeking admission of a new contention and challenging the adequacy of the revised metal fatigue analyses.

In LBP-07-15, the Board admitted NEC Contention 2A: NEC now contends . . . that the analytical methods employed in Entergy's [environmentally corrected CUF, or] CUFen Reanalysis were flawed by numerous uncertainties, unjustified assumptions, and insufficient conservatisms, and produced unrealistically optimistic results. Entergy has not, by this flawed reanalysis, demonstrated that the reactor components assessed will not

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[5] Entergy's Response to [NEC Motion One] (Aug. 6, 2007) at 1 and [NEC] Reply to Entergy and Staff Answers to [NEC Motion One] (Aug. 10, 2007) at 1.

[6] NEC Motion Two, Attach. 1, Letter from Matias F. Travieso-Diaz, Counsel for Entergy, to Mary C. Baty, Sarah Hofmann, and Karen L. Tyler (Aug. 2, 2007).

fail due to metal fatigue during the period of extended operation. *See* 66 NRC 261, 267-68 (2007) (omissions and brackets in original). In that decision, the Board ruled that NEC Contention 2 would be held in abeyance. *Id.* at 271.

Entergy then calculated the CUFen for the feedwater nozzle using the ASME Code, Section III, Subsection NB-3200 methodology and made that analysis the analysis of record.[7]

The results of Entergy's analysis were sent to the parties on February 15, 2008. In addition, the Staff has proposed a license condition requiring Entergy to, at least two years prior to the period of extended operation, calculate the CUFen for the reactor recirculation nozzle and the core spray nozzle, using the ASME Code method and document the analysis as the analysis of record in its Final Safety Analysis Report. *See* Safety Evaluation Report Related to License Renewal of Vermont Yankee Nuclear Power Station ("SER") (Feb. 25, 2008) at Section 1.7; Section 4.3.3.2. *See also* Letter from William J. Shack, Advisory Committee on Reactor Safeguards Chairman, to Chairman Dale E. Klein (Mar. 20, 2008) (ML080660692)

After the Board admitted NEC 2A, Entergy calculated the CUFen for one [representative and presumably bounding] component; the feedwater nozzle using the ASME Code, Section III, Subsection NB-3200 methodology and made that analysis the analysis of record.2

Entergy's analysis were sent to the parties on February 15, 2008. In addition, the Staff proposed a license condition requiring Entergy to, at least two

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[7] *See* Letter, Entergy to USNRC, "License Renewal Application, Amendment 34," BVY 08-002 (Jan. 30, 2008); Letter Entergy to USNRC, "License Renewal Application Amendment 36," BVY 08-012 (Feb. 21, 2008)

years prior to the period of extended operation(but not necessarily before the close of the record), calculate the CUFen for the reactor recirculation nozzle and the core spray nozzle, using the ASME Code method and document the analysis as the analysis of record in its Final Safety Analysis Report.

On March 17, 2007 NEC filed, "New England Coalition, Inc.'s Motion to File a Timely New or Amended Contention" ("Motion").[8]

NEC contended: 1) Entergy's analysis of record neither validates the results of Entergy's "First CUFen Reanalysis" nor independently demonstrates that CUFens for all components listed in License Renewal Application Table 4.3-3 and all NUREG/CR-6260 locations are less than 1.0) Entergy's analysis of record "does not address errors in Entergy's First CUFen Reanalysis resulting from several other factors indentified in NEC's Contention 2A;" 3) Entergy's analysis of record "addresses only the feedwater nozzle, and its results are not bounding for other components." Motion at 3. NEC relied on the Seventh Declaration of Dr. Joram Hopenfeld ("Seventh Hopenfeld Declaration") to support its Motion.

Reply at 4.

On April 24, 2008, the Board wrote, "NEC Contention 2A is still on the table and Entergy's Second CUFen Reanalysis was apparently intended to respond to certain aspects of that contention. NEC's current amendment, which we will designate NEC Contention 2B, was apparently designed to prevent NEC from being foreclosed from

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[8] Safety Evaluation Report /License Renewal of Vermont Yankee Nuclear Power Station ("SER") (Feb. 25, 2008) at Section 1.7; Section 4.3.3.2. *See also* Letter from William J. Shack, Advisory Committee on Reactor Safeguards Chairman, to Chairman Dale E. Klein (Mar. 20, 2008) (ML080660692) at 3.

challenging Entergy's Second CUFen Reanalysis, and is really just a subset of NEC Contention 2A.

On April 28, 2008, the parties filed Statements of Position, Direct testimony, and Exhibits; Rebuttal Prefiled Testimony was filed on June 2nd. NEC was now firmly under the impression that Contention 2 was held in abeyance while Contentions 2A and 2B would first be litigated. NEC was also mindful of the presiding officer's scheduling conference admonition contained in the transcript of November 29, 2008,

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First, in terms of the initial and rebuttal
23 testimony, statements, exhibits, et cetera, I think
24 we've said it before, and we want to say it again,
25 particularly to parties less familiar with the Subpart
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1 L proceedings, that when you put your initial
2 materials in, and that's Section II.10B, C, and D of
3 the initial scheduling order, you need to get
4 everything in that you need for your case, from the
5 most basic, to the most esoteric, because you need to
6 understand that if and when an evidentiary hearing on
7 that particular element of that contention occurs, we
8 may not call any additional witnesses. We may not
9 have questions for additional witnesses, and there's
10 no automatic right to have witnesses sit on the stand
11 and either be directly examined, or cross examined.
12 And, so, get your case in by your testimony, and don't
13 assume that your witnesses will have an opportunity to
14 expound at the live hearing. Hopefully, that's
15 relatively clear.[9]

In a Scheduling Conference on June 24, 2008, however, the presiding officer informed NEC that all aspects of Contention 2 and its A and B subsets were likely to be probed at the oral hearings scheduled less than 4 weeks away.

NEC's attorney protested that NEC (reasonably) had briefed only the A and B subsets and not Contention 2.

[9] See, NEC Petition for Review, Attachment One for a more complete selection of the relevant text.

The Board was undeterred and offered that should confirmatory analyses be required, NEC might litigate the issue further.

JUDGE KARLIN::
18 Fourth issues we might point out is
19 Contention 2. As we see it, Contention 2 has morphed
20 and evolved from initially a contention of an
21 inadequate aging management plan, that was the
22 allegation, into a CUFEN analysis or reanalysis which
23 would seem to or arguably show CUFEN's lesson one and
24 that was contested in 2(A) and then 2(B) contested the
25 one specific CUFEN reanalysis and now it seems to me
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1 that it's almost evolved back to a position that was
2 a suggestion that by doing CUFENS later that
3 constitutes an adequate aging management plan.
4 The point I think we're making is that we
5 see this -- All three parts of Contention 2 seem to be
6 on the table, 2, 2 (A) and 2 (B). And, so we'll be
7 probing, I think, asking questions, related to all
8 three of those potential aspects of Contention 2.
...
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2 MS. TYLER: Yes. This is Karen Tyler. I
3 need a little clarification about your instruction
4 that we're to be litigating Contention 2 as well as
5 Contentions 2(A) and 2(B) . Contention 2, . if I
6 understood it, CUFEN orders is held in abeyance at the
7 moment and we were to be litigating only Contentions
8 2(A) and 2(B) at this hearing and, as I understood it,
9 we were to litigate Contention 2 which went to the
10 sufficiency of Entergy's aging management plan only in
11 the event that the Board ruled in NEC's favor on
12 Contentions 2(A) and 2(B) which concern exclusively
13 the sufficiency of the CUFEN analysis. And I think
14 that the issue of whether that CUFEN analysis can be
15 corrected or completed as a component of the aging
16 management plan, that's really an issue of -- a legal
17 issue. I think that's an issue of the interpretation
18 of Rule 54.21(c) (I).
19 So basically, NEC has not briefed its
20 position on Contention 2 and is not prepared to
21 litigate the sufficiency of any aging management
22 program for metal fatigue in July [10]

Hearings were held in Newfane, Vermont on July 21,22,23,24, 2008, nonetheless, addressing all three aspects of Contention 2; and defeating at the onset through this arbitrary and capricious put-and-take of scope, NRC's stated basic goal of fairness.

[10] [10] See, NEC Petition for Review, Attachment One for a more complete selection of the relevant text.

On November 24, 2008, the Board issued a Partial Initial Decision, ordering no Board approval of license renewal would issue and that record would be held open until confirmatory CUFen metal fatigue analyses were performed on the reactor core spray and recirculation outlet nozzles. Further the board ordered that NEC and DPS (Vermont) would have up to 45 days from the time that Entergy provided its reanalysis to file a new contention based on any defects, within a very constricted set, the intervenors could point to in the analyses.

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The Board also concludes that, as a legal and technical matter, the license renewal cannot be authorized or issued until Entergy either (1) properly recalculates the CS and RR outlet nozzle CUFens such that they demonstrate that these important components will not fail during the PEO (i.e., that the calculations produce a value less than unity), or (2) submits an AMP that demonstrates that aging of these components will be adequately managed during the PEO. Such recalculations (or an adequate AMP) cannot be consigned to some post hearing activity, because they are a condition precedent to the license, involve complex scientific and technical judgments and discretion, and are not merely ministerial. Thus, the NRC Staff's proposed license condition 4 and Entergy's Commitment 27 do not suffice. Such recalculations (or an adequate AMP) are a pre-requisite to issuance of the license renewal.
The consequence is that the license renewal may be issued only if the above pre-conditions are met, i.e., our authorization of any license renewal is contingent on these pre-conditions. Assuming Entergy still wishes to pursue this license renewal, it must (1) recalculate the CUFen analyses for the CS and RR outlet nozzles, in accordance with the ASME Code, NUREG 6583 and 5704, and all other regulatory guidance, (2) resubmit these results to the NRC Staff and serve them on the other parties herein, and (3) either demonstrate that the TLAAs are less than unity or submit an adequate AMP for these components. At that point we presume (but do not and cannot order) that the NRC Staff will evaluate Entergy's submissions.
Presumably NEC will do the same.
If the CUFen analyses are (1) done in accordance with the above stated guidance and the **basic** approach used in the Confirmatory CUFen Analysis for the FW nozzle, (2) contain no significantly different scientific or technical judgments, and (3) demonstrate values less than unity, then this adjudicatory proceeding terminates. **If not, NEC may file a new or amended contention challenging the adequacy of the CUFen calculation,**[95]
or, if Entergy chooses to proceed under the AMP route, NEC may revitalize dormant Contention 2 (as to the adequacy of Entergy's AMP). In light of these possible eventualities, our ruling today can only be a partial initial decision, and this ASLB proceeding will remain open until 45 days after Entergy performs the

> confirmatory CUFen analyses on the CS and RR nozzles, the NRC Staff approves them, and Entergy serves NEC and Vermont with full written results of such analyses. If no motion involving any such new, amended, or revitalized contention is filed by the 45th day, the adjudicatory proceeding on these matters shall be terminated.

[95]NEC may not, however, use any such challenge as an opportunity to rehash or renew any technical challenges that have already been raised and resolved in this proceeding (e.g., dissolved oxygen, outdated equations, etc.), but rather must specifically state how the new analyses are not consistent with the legal requirement and the calculations performed for the feedwater nozzle.

[Emphasis added]

Entergy performed its reanalyses on the core spray and recirculation nozzles and on April 24, 2009, NEC timely filed a Petition for a New Contention based on perceived errors in assumptions and technical, scientific judgments that had been fed into Entergy's CUFen calculations and, in the opinion expressed in the attached affidavit of NEC's expert, Dr. Joram Hopenfeld, had resulted in potentially non-conservative conclusions.

On July 8, 2009, the Board, stating that because NEC's proposed new contention did not meet the criteria for a contention, the Board need not consider interim filings (answers, replies, or disputes over timeliness or service, etc,) and issued an order denying NEC's new contention; thus terminating the proceeding.

III. DISCUSSION

A. The Hearings – The Board conducted the hearings in a manner overall prejudicial to NEC's case. An review of the transcripts will show that they lavished time and attention on NRC Staff and Entergy witnesses , permitting them to inject with offers of spontaneous testimony in order to "clarify" while greeting an NEC witness's shy, polite attempt to gain attention with a snarled admonition to "put your hand down...we're not in school here." Entergy and NRC Staff testimony was rife with hearsay about the mindset and motives of distant entities; and it was favored by the Board as more credible than NEC testimony supported by data in-hand, which was met with skepticism, scorn, and

rude interruptions. One judge ran some calculations based on Dr. Hopenfeld's testimony on metal fatigue and opined that the inputs led to nonsensical conclusions; arguing with the witness and refusing to allow the witnesses to explain his point of view on the subject. NEC's attorneys were new to NRC proceedings and were somewhat uncertain as to how objections would be handled or just what the thresholds might be. At one point when the Board was "tag-teaming'" Dr. Hopenfeld; three persons popping questions without an opportunity to give a complete answer, NEC counsel rose to gently ask some relief for the witness. The presiding officer looked very annoyed and asked if there was an "objection here" or was counsel just trying to make conversation. Most 'déclassé' in NEC's experience and from a public perspective, this sort of thing can do little to bolster confidence in NRC. More importantly as the hearing process bears on issues of public safety, NEC submits that, while no single act or display on the part of the Board, crossed the threshold of preservable error, it is impossible for NEC to see how the Board's overall attitude did not color its findings. An unbiased review of the transcript and filings , in particular the testimony and declarations of NEC witness, Dr. Hopenfeld, will give weight to the observation that the findings themselves, because they are so often at odds with basic science and established engineering practice, are detriment to the ASLB's and the NRC's scientific and technical reputation of competence[11]. For example, the mute

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[11] . Appendix A to 10 C.F.R. Part 50 establishes "GeneralDesign Criteria [GDC] for Nuclear Power Plants." Appendix A – GDC 1 specifies that"[s]tructures, systems, and components important to safety shall be designed, fabricated,erected, and tested to quality standards commensurate with the importance of the safetyfunctions to be performed." Appendix A – GDC 30 requires that components that are "part of the reactor coolant pressure boundary shall be designed, fabricated, erected and **tested** to the highest quality standards practical." Augmenting the GDCs is 10 C.F.R. § 50.55a "Codes and Standards," which endorses the use of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code in assessing metal fatigue. In particular, 10 C.F.R. §50.55a(c) states that "[c]omponents which are part of the reactor coolant pressure boundary must meet the requirements for Class 1 components in Section III of the ASME Boiler and Pressure Vessel Code.".

testimony of the high energy pipe burst incidents at Surry and Mihama nuclear power plants is ample warning that deep conservatism is in order when calculating the reestablishment of laminar flow. The Board preferred Entergy's back-of-the-envelope approach. The PID and as a consequence the FID are rife with misguided concepts and misplaced assumptions.

NEC respectfully submits that the PID and the FID in this proceeding, as well as their genesis, merit Commission review and, if the Commission agrees that serious questions arise, review by technically competent, independent experts.

Much of the foregoing is captured and referenced in NEC's Motion for Reconsideration of the Board's Partial Initial Decision of December 17, 2008. NEC here includes said Motion by reference and begs the Commission to consider its contents.

B. The Rejected Contention - The Board has denied NEC's motion to file a new contention. The Board finds that NEC failed to satisfy either the requirements specified in its Partial Initial Decision or the new contention pleading requirements of 10 C.F.R. § 2.309(f)(2)(i)-(iii).

The feedwater, reactor recirculation, and core spray nozzles on a BWR nuclear power reactor such as VYNPS are part of the "reactor coolant pressure boundary." They must be designed, fabricated, erected, and **tested** to the "highest quality standards practical," and must meet the Class I requirements of ASME BPV Code Section III. See Oyster Creek, CLI-08-28, 68 NRC at __ (slip op. at 5-6).

ASME Code Section III sets forth procedures for analyzing components for metal fatigue, provides "fatigue curves" for various materials, and requires that the CUF for any given location or Class I component not exceed 1.0 or "unity."

The ASME Code fatigue design curves and CUFs are based on fatigue testing of polished metal, at room temperature, in an air environment.

This is problematic because the actual environment inside of a nuclear reactor is very different. LWR environments such as the VYNPS involve non-polished metal, and water and steam at very high and changing temperatures and pressures, which shorten the life-span of metal components and can significantly increase metal fatigue beyond that predicted by the ASME (air/room temperature) fatigue curves.

"For components . . . exposed to reactor coolant water, the fatigue life, as measured by the allowable number of stress cycles, is reduced compared to the components' fatigue life when exposed to an air environment."

1. CUFen Analyses Requirements- The Board laid out three specific requirements for the Final CUFen Analyses in the PID . Vermont Yankee, LBP-08-25, 68 NRC __, __ (slip op. at 67).

a. First, the Board's FID recounts, they must be done in accordance with the approach used in the confirmatory CUFen analysis for the FW nozzle.

Actually, the Board laid out more than three specific requirements , it also said, " Assuming Entergy still wishes to pursue this license renewal, it must (1) recalculate the CUFen analyses for the CS and RR outlet nozzles, in accordance with the ASME Code, NUREG 6583 and 5704, and all other regulatory guidance..."

NEC's witness, Dr. Hopenfeld[12], discusses Entergy's failure to meet or conform with the ASME code or "all other regulatory guidance" in specific terms in both his April 24, 2009 and May 26, 2009 Declarations. NEC sums and memorializes this in both its Petition and its Reply]

b. Second, the Board says, Entergy should not use significantly different scientific or technical judgments.

In its order the Board couched the prohibition of the use of "significantly different scientific or technical judgments " within the context of using the "same basic" approach. How is this to be interpreted?

Dr. Hopenfeld agrees that Entergy used the same judgments, but what does he so obviously intend? Is the use of the same relatively undefined judgments technically

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[12] Dr. Hopenfeld holds Bachelor of Science, Masters of Science, and Doctor of Philosophy degrees in mechanical engineering from the University of California at Los Angeles. He has 45 years of experience in industry and government, including 18 years with the NRC, primarily in 24 the areas of thermal hydraulics, materials, corrosion, radioactivity transport, instrumentation, steam generator testing, and accident analysis. Hopenfeld Decl. Post Tr. 779, at 1.

valid, when applied to different materials, different geometries, and different environments of stress, temperature, and chemistry? Simply, no. NEC's proposed contention takes into account the transcending character of specific instruction to do the same. In NEC's view the order means use the same considerations in weighing each element for the individual application and not simply weigh each element as you did the last time. A change in nozzle diameter, for example, requires input adjustments that are not linearly proportional, and professional, technical judgments, variations, based in established physical principles must be applied. If not, the results will be unacceptably unreliable.

c. Finally, the Board requires that CUFen analyses should demonstrate values less than unity. "We ruled that new contentions could be filed only if the Final CUFen" Analyses did not meet these requirements.

NEC's proposed new contention argues and provides expert testimony to the effect that the standards and criteria of regulation and guidance are not met; that Entergy's assumptions and input selections are technically indefensible; hence any assertion that CUFens are less than unity cannot be validly supported by the analyses..

2. Settled Issues - The Board warned in the PID that any new contention could not "rehash or renew any technical challenges that have already been raised and resolved in this proceeding (e.g., dissolved oxygen, outdated equations, etc.), but rather must specifically state how the new analyses are not consistent with the legal requirement and the calculations performed for the feedwater nozzle." Id. at __ (slip op. at 67 n.95).

Despite NEC argument and testimony to the contrary which the Board ignores, the Board opines that "NEC did not follow the foregoing requirements, and its motion

fails to show that the Final CUFen Analyses were not performed in accordance with the approached used by Entergy in its analysis of the FW nozzle."

Instead, says the Board, Dr. Hopenfeld stresses that the Final CUFen Analyses "methodology was the same" as the prior analyses, and that fact represents a major thrust of his opposition to the Final CUFen Analyses". Hopenfeld Decl. at A6-A7.

Yes, But unless this is some word game devoid of considerations of public safety, we understand that Hopenfeld intends us to understand that the "basic approach" remains the same while the failure to appropriately adjust inputs according to changing circumstances actually results in de facto change. By analogy, this year's "living wage" in Vermont in not next year's "living wage" in Palm Springs.

The Board says, "NEC has rehashed old arguments (e.g., adequacy of consideration of dissolved oxygen in CUFen analyses, appropriateness of the heat transfer coefficients)..etc..." These are physical phenomena relevant to CUFen analysis. It is unclear if the Board has a patent on all physical phenomena upon which it has opined, or just the applications as the related to the feedwater nozzle.

And then goes on to say, that Dr. Hopenfeld submits detailed "responses" to various assertions made by Entergy and the NRC Staff. and has... "for the first time, raised new arguments concerning technical assumptions and judgments that have not changed since 2007."

Yet elsewhere in this docket, the Board has ordered that new information maybe introduced in defense of a contention if the particular subject was raised by another party in attacking it. Dr. Hopenfeld has done nothing "more than to respond to "various assertions

The Board declares that NEC also fails to meet the requirements for new contentions under 10 C.F.R. § 2.309(f)(2)(i)-(iii) [timeliness] and goes on to say that the assumptions used in Entergy's 2008 refined CUFen analyses for the CS and RO nozzles were the same ones used in its 2009 Final CUFen Analyses, and in CUFen analyses for the CS and RO nozzles on August 2, 2007, and that NEC should have challenged these assumptions in the many opportunities it has had since, but this challenge is now untimely. This is dead wrong. NEC is not challenging assumptions that went into discarded license renewal application amendments that were discarded long ago, NEC is challenging assumptions that were filed by Entergy as part of its confirmatory analyses, which were removed from these proceedings by agreement with NRC Staff and only returned upon issuance of the Board's PID of November 24, 2008 and only provided as calculations of record to the parties 45 days in advance of NEC's Petition For Leave to File a New Contention, which was timely filed in accordance with the Board's Order.

The NRC regulations create a two-decision process for the initiation of new contentions. First, the parties litigate, and the Board decides, whether the intervenor should be granted leave to file a new contention. 10 C.F.R. § 2.309(f)(2). If so, then the parties litigate, and the Board decides, whether the contention satisfies the requirements of 10 C.F.R. § 2.309(f)(1). The Board's FID unfairly reaches beyond the minimal factual, material requirements for a new contention to deny NEC its hearing rights.

By preempting and radically reducing the acceptable scope of any new contention, post-PID, the Board improperly abridges NEC's hearing rights under Section 189(a) of the Atomic Energy Act. Under the AEA, petitioners have a right to an adjudicatory hearing on any material public safety-related issue.

Dr. Hopenfeld's affidavit serves as the "concise statement of supporting fact or expert opinion" required by 10 C.F.R. § 2.309(f)(1)(v). NEC is not required to present its entire case at the contention admissibility stage of the proceeding. Nor is it required to demonstrate that it will prevail on the merits. LBP-06-20, 64 NRC at 151

NEC's challenges to the assumptions made by Entergy are challenges that fall outside of the scope or apart from the particularity of those previously rejected by the Board and are timely. The new contention relies on information that was "not previously available" with respect to the confirmatory analysis as ordered by the Board in its PID and therefore does meet the requirements of 10 C.F.R. § 2.309(f)(2)(i) or (ii).

The Commission should , in its discretion, favor assurance of public safety, over regulatory gamesmanship, and overturn the FID, remanding NEC 's New Contention to a freshly constituted ASLB Panel.

IV. CONCLUSION

For all of the good reasons stated above, the Commission should undertake review of the Partial Initial decision and the Full Initial Decision in the above captioned matter, together with the docket record, and testimony provided by the parties.

The Commission should refer the scientific and technical findings of fact to a competent, independent technical body for confirmation of their soundness. The Commission should provide a meaningful hearing opportunity on the concerns raised in NEC's Petition for Leave to file a New Contention.

The world is watching.

NEC now eagerly awaits the Commission's decision

Respectfully Submitted,

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NEC EXHIBIT ONE
PETITION FOR REVIEW
TRANSCRIPT EXCERPT

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

IN THE MATTER OF: : Docket No. 50271-LR
ENTERGY NUCLEAR OPERATIONS 06-849-03-LR
INC. : ASLB No. PRE-HEARING CONFERENCE CALL
(Vermont Yankee Power Station) November 29, 2007

15 The above-entitled matter came on for prehearing
16 conference, pursuant to notice, at 2:00 p.m.
17 BEFORE:
18 THE HONORABLE ALEX S. KARLIN, Chair
19 Administrative Judge
20 THE HONORABLE RICHARD WARDWELL,
21 Administrative Judge
22 THE HONORABLE THOMAS S. ELLEMAN,
23 Administrative Judge
24 (participating via phone)

19 On the nature of clarifications, we've got
2.0 a couple of things we want to point out, and this is
21 probably as good a juncture as any to get those out of
22 the way. First, in terms of the initial and rebuttal
23 testimony, statements, exhibits, et cetera, I think
24 we've said it before, and we want to say it again,
25 particularly to parties less familiar with the Subpart
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1 L proceedings, that when you put your initial
2 materials in, and that's Section II.10B, C, and D of
3 the initial scheduling order, you need to get
4 everything in that you need for your case, from the
5 most basic, to the most esoteric, because you need to
6 understand that if and when an evidentiary hearing on
7 that particular element of that contention occurs, we
8 may not call any additional witnesses. We may not
9 have questions for additional witnesses, and there's
10 no automatic right to have witnesses sit on the stand
11 and either be directly examined, or cross examined.
12 And, so, get your case in by your testimony, and don't
13 assume that your witnesses will have an opportunity to
14 expound at the live hearing. Hopefully, that's
15 relatively clear.
16 Second point of clarification for purposes
17: of this is, you need to recognize that we've had

18 several motions for summary disposition, and other
19 filings in this case, and some of them have involved
20 affidavits, declarations, exhibits that were attached
21 to those motions, even admissions that occurred in the
22 context of those motions. None of those materials
23 will be in evidence for purposes of evidentiary ruling
24 by this tribunal, so you need to re-introduce
25 anything, any witness, or any declaration you think is
610
1 important, you need to re-introduce it with your
2 initial and rebuttal written testimony, if you would,
3 please.

NEC EXHIBIT TWO
PETITION FOR REVIEW
TRANSCRIPT EXCERPT

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
++++.+
ATOMIC SAFETY AND LICENSING BOARD PANEL
TELECONFERENCE

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

ASLBP Docket No.
06-849-03-LR
Docket No. 50-271-LR

Tuesday, June 24, 2008
2:00 p.m.

BEFORE:
ALEX S. KARLIN, Administrative Judge, Chair
RICHARD E. WARDWELL, Administrative Judge
WILLIAM H. REED, Administrative Judge

(645 1 T-A-B-L-E 0-F C-O-N-T-E-N-T-S - 9 Advance Notice of Several Issues)

18 Fourth issues we might point out is
19 Contention 2. As we see it, Contention 2 has morphed
20 and evolved from initially a contention of an
21 inadequate aging management plan, that was the
22 allegation, into a CUFEN analysis or reanalysis which
23 would seem to or arguably show CUFEN's lesson one and
24 that was contested in 2(A) and then 2(B) contested the
25 one specific CUFEN reanalysis and now it seems to me
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1 that it's almost evolved back to a position that was
2 a suggestion that by doing CUFENS later that
3 constitutes an adequate aging management plan.
4 The point I think we're making is that we
5 see this -- All three parts of Contention 2 seem to be
6 on the table, 2, 2 (A) and 2 (B). And, so we'll be
7 probing, I think, asking questions, related to all
8 three of those potential aspects of Contention 2.

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2 MS. TYLER: Yes. This is Karen Tyler. I
3 need a little clarification about your instruction
4 that we're to be litigating Contention 2 as well as
5 Contentions 2(A) and 2(B) . Contention 2, . if I
6 understood it, CUFEN orders is held in abeyance at the
7 moment and we were to be litigating only Contentions

8 2(A) and 2(B) at this hearing and, as I understood it,
9 we were to litigate Contention 2 which went to the
10 sufficiency of Entergy's aging management plan only in
11 the event that the Board ruled in NEC's favor on
12 Contentions 2(A) and 2(B) which concern exclusively
13 the sufficiency of the CUFEN analysis. And I think
14 that the issue of whether that CUFEN analysis can be
15 corrected or completed as a component of the aging
16 management plan, that's really an issue of -- a legal
17 issue. I think that's an issue of the interpretation
18 of Rule 54.21(c) (I).
19 So basically, NEC has not briefed its
20 position on Contention 2 and is not prepared to
21 litigate the sufficiency of any aging management
22 program for metal fatigue in July.
23 JUDGE KARLIN: We were -- Our take is that
24 you have raised that issue by virtue of what we see a
25 challenge in questioning of the postponement of the
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1 conduct of the CUFENs for the core spray nozzle and
2 the recirculation outlet nozzle. As I understand part
3 of your challenge, it's a legal challenge, yes. But
4 that's not permissible.
5 As I understand, -the staff took a position
6 with regard to 54.21(c) (3) (ii) versus (I) and so
7 there's a legal issue in there as to whether that's
8 permissible and then the second issue would be if
9 they, and you have addressed that as I see it in your
10 materials, that is the plan that they have, let's
11 assume that's legally permissible to postpone conduct
12 of CUFEN reanalysis until after the license renewal is
13 issued.
14 The question then evolves into maybe is
15 the proposal by Entergy to conduct such CUFEN
16 reanalysis on those two nozzles adequately elaborated
17 so that it's an adequate management plan. And I think
18 you've talked about that and it's a simple matter to
19 address which is to say if it is indeed an aging
20 management plan and it is a legitimate thing to do
21 under (iii), then is it just some vague statement or
22 is it relatively specific in terms of what's entailed
23 and we're going to ask the staff and the Applicant
24 perhaps what is entailed, as I've said, in doing that.
25 We see this as to Entergy and NEC part of
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1 their contention and I understand it's in abeyance.
2 But it's clear from the initial statement and rebuttal
3 statements that --
4 (Off the record comments.)
5 It's clear from the initial statements and
6 the rebuttal statements that this is an issue to us.
7 MS. TYLER: This is Karen Tyler again. I
8 think that this is a little convoluted to me right
9 now. Basically, as I've understood it, our original
10 Contention 2 was about the sufficiency of Entergy's
11 aging management program for metal fatigue which in

12 the license renewal application basically was not
13 presented. What was presented was an intention to
14 develop that type of program later.
15 That contention was stayed when we
16 submitted Contentions 2(A) and 2(B) which have to do
17 with the refinement of the fatigue analysis. And as
18 I understood it, the refinement of the fatigue
19 analysis was to substitute for the development of the
20 aging management program. That is, if Entergy could
21 demonstrate it through refinement of the fatigue
22 analysis that, in fact, it didn't have an issue with
23 environmentally assisted metal fatigue, then it would
24 avoid the obligation to develop an aging management
25 program. Okay. So that's what I thought we were
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I litigating under Contentions 2(A) and 2(B) is the
2 sufficiency of that reanalysis.
3 Now the issue of whether they can continue
4 to work on this reanalysis as an aging management
5 program, we've briefed that solely as a legal issue.
6 It's our position that under 54.21(c) (1) they have to
7 submit that TLAA analysis that's part of the license
8 renewal application and it's only if they can't extend
9 that TLAA to the end of the license renewal period
10 that they then are required to develop an aging
11 management program under 54.21(c) (1) (iii).
12 So again, we briefed that issue which goes
13 purely to the timing of when Entergy has to finish
14 this TLAA. We've briefed that purely as of the
15 interpretation of the regulations and it's our
16 understanding that if the Board were to rule in NEC's
17 favor and find that the TLAA analysis is either
18 invalid or is incomplete and on the question of laws
19 that Entergy is required to submit an analysis that is
20 valid and complete as part of the license renewal
21 application, if the Board were to agree with us on all
22 of those points, then it would rule in NEC's favor on
23 Contentions 2(A) and 2(B) and we would then, Entergy
24 would then, be required to develop an aging management
25 program for metal fatigue, that we would have the
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1 opportunity to review and litigate under NEC's
2 Contention 2. So I'm not prepared or comfortable with
3 litigating NEC's Contention 2 in July.
4 JUDGE KARLIN: Let me perhaps clarify a
5 little bit; Your Contentions 2(A) and 2(B) challenge,
6 for example, 2(A) as I understand it challenges some
7 of the CUFEN reanalyses that were done by Entergy,
8 that they weren't done properly or adequately or
9 whatever. There- are difficulties. There are
10 uncertainties. There are other problems with the
11 CUFEN reanalysis that they did for 2(A).
12 If we were to agree with you ultimately
13 that those CUFENs were not done properly, then I think
14 that NEC, I'm sorry, Entergy would have -- Then we
15 would have a different ball game and Entergy would

16 have the option of either proposing an aging
17 management plan to deal with those problems or
18 correcting its calculations in some way that would get
19 its CUFEN to be under one. I agree with that. So
20 you're not prepared to litigate the aging management
21 plan or not vis A vis the CUFEN problems that are
22 raised in Contention 2(A).
23 But if we were to agree with Entergy and
24 say, "No, it looks like, Entergy, you did those CUFENs
25 right. We're happy with that. We think you satisfy
683.
1 the regulatory requirement on the CUFENs that you've
2 done, but then there's this legal issue of whether you
3 can postpone doing CUFENs with regard to the other
4 nozzles" -- And so we agree with Entergy that they've
5 done the CUFENs to the extent they've done any
6 correctly. But then we agree with NEC on the
7 proposition.
8 But those two that haven't been done, you
9 know, the question is can it legally be postponed
10 until later. And let's say we rule that, yes, it can
11 be legally postponed and we rule that way on the legal
12 issue, then there becomes a factual issue having
13 acknowledged that it can be legally postponed. Is
14 what they propose to do with regard to those two
15 nozzles an adequate aging management plan? And they
16 have asserted in these pleadings that it is and I
17 believe you have asserted that it is not, not just for
18 the legal issue, but for it's not an adequate aging
19 management plan, legally and factually.
20 So I think we would propose to go with
21 that now and if this becomes a problem, we may provide
22 an opportunity for additional submission. But that's
23 our current approach to this thing.
24 It seems a little convoluted. I think it
25 will become a little clearer when we submit some of
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1 our requests for briefing. I mean, obviously- no one
2 has submitted briefs yet. What's been submitted is
3 initial statements of position, initial testimony,
4 initial exhibits. And so it's a little convoluted and
5 we just want to forewarn people that we see this issue
6 with regard to the two nozzles as going back. Even if
7 everything else were okay, those two nozzles going
8 back actually are at an adequate aging management plan
9 setting aside the legal issue.
10 MS. TYLER: This is Karen Tyler. I don't
11 want to beat a dead horse. This is the last thing
12 that I'll say about this, but I feel that NEC has
13 dealt with this issue solely as a legal issue whether
14 Entergy can complete or postpone the TLAA as an aging
15 management plan and we really have not briefed the
16 issue as a factual matter, whether that would
17 constitute a sufficient plan.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Commission

In the Matter of	)	
	)	
Entergy Nuclear Vermont Yankee, LLC	)	Docket No. 50-271-LR
and Entergy Nuclear Operations, Inc.	)	ASLBP No. 06-849-03-LR
	)	
(Vermont Yankee Nuclear Power Station)	)	

CERTIFICATE OF SERVICE

I, Raymond Shadis, hereby certify that copies of NEW ENGLAND COALITION'S PETITION FOR REVIEW OF THE LICENSING BOARD'S PARTIAL INITIAL DECISION, LBP-09-09 in the above-captioned proceeding were served on the persons listed below, by deposit in U.S. Mail, first class postage affixed; and, where indicated by an e-mail address below, by electronic mail, on the 23rd of July, 2009.

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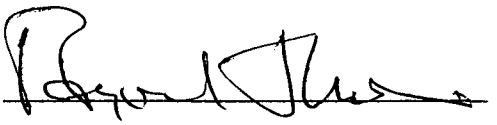
by: 

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July 23, 2009

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

RE: Docket No. 50-271-LR, ASLBP No. 06-849-03-LR, Vermont Yankee Nuclear Power Station

Dear Rulemaking and Adjudications Staff,

Please find enclosed for filing before the Atomic Safety and Licensing Board in the above captioned proceeding:
NEW ENGLAND COALITION'S PETITION FOR REVIEW OF THE LICENSING BOARD'S FULL INITIAL DECISION

Thank you for your kind attention,

RS

for New England Coalition, Inc.

Raymond Shadis
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