

May 25, 2006

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

June 6, 2006 (3:29pm)

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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))

Docket No. 50-271-OLA

ASLBP No. 04-832-02-OLA

NEW ENGLAND COALITION'S REPLY TO NRC STAFF AND ENTERGY ANSWERS
TO
NEW ENGLAND COALITION'S REQUEST FOR LEAVE TO FILE A NEW CONTENTION

INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(h)(1), New England Coalition hereby replies to the NRC Staff and Entergy Nuclear Vermont Yankee, LLC And Entergy Nuclear Operations, Inc ("Entergy") responses, filed on May 25, 2006, to "New England Coalition's Request for Leave to File A New Contention" ("Request"), filed by New England Coalition ("NEC") on April 20, 2006.

The NRC Staff and Entergy argue in the main that New England Coalition's new contention does not (1) demonstrate the existence of a genuine dispute on a material issue of law or fact and (2) is not supported by a sufficient basis as required by 10 C.F.R. § 2.309(f).

Further, NRC Staff and Entergy argue that (3) to the extent that the petition may have intended to challenge the sufficiency of the acoustic modeling and methodology relied upon by Vermont Yankee, it is untimely.

For reasons set forth below, New England Coalition respectfully submits that NRC Staff and Entergy' arguments should be rejected and New England Coalition's new late-filed contention should be admitted for adjudication.

BACKGROUND

On July 1, 2004, the Commission published in the *Federal Register* a Notice of Consideration of Issuance and Opportunity for Hearing, regarding an application filed by Entergy for an amendment to the operating license of the Vermont Yankee Nuclear Power Station ("Vermont Yankee"), that would authorize an extended power uprate ("EPU"), increasing the maximum power level to 120% of original licensed thermal power ("OLTP").

New England Coalition timely filed its petition to intervene, together with seven (7) proposed contentions on August 30, 2004.¹

On October 20, 2004, New England Coalition filed a motion to dismiss the proceeding and to require that notice of opportunity for hearing in this matter be reissued only after a "completed application" had been filed with the NRC. New England Coalition argues that dismissal and renoticing of the hearing in this case was required because as of October 19, Entergy had filed at least twenty supplements to the application, many of which were filed after July 1, 2004 and that Entergy's application was incomplete as of July 1, 2004, and thus the notice was fatally defective as the application was "still being completed." NEC Memorandum at 2-3.

Following a brief discussion of this motion at the October 21, 2004 prehearing conference, the Board declined to delay the proceeding. Tr. at 85-92.

¹ "New England Coalition's Request for Hearing, Demonstration of Standing, Discussion of Scope of Proceeding and Contentions," dated August 30, 2004.

On November 22, 2004, the Licensing Board granted NEC's petition to intervene and admitted two (2) of its initial contentions.³

On December 17, 2004, the Board issued an Order denying New England Coalition's Motion and noted that New England Coalition was not prejudiced by a proceeding in which license amendment application supplements were still being issued because,

a participant in a proceeding has the ability to file new, amended, or late-filed contentions when additional documentation becomes available. 10 C.F.R. § 2.309(c) and (f)(2). Newly available material information has long been held to provide good cause to file a new contention. Consumers Power Co. (Midland Plant, Units 1 and 2), LBP-82-63, 16 NRC 571, 577 (1982). With these existing procedures available to all participants, we believe that NEC has adequate means by which to address all newly docketed supplements to the Entergy application.

On March 2, 2006, the Staff issued its Final Safety Evaluation (in which it made a No Significant Hazards Considerations determination) along with the requested EPU amendment.⁴ At this time forty-five (45) Supplements to the License Amendment Application had been filed with Supplement No. 45, ML060590261 not added to NRC's Agencywide Documents Access and Management System (ADAMS) until a week later, March 8, 2006.

2. In its Reply, NRC Staff mistakenly asserts that several New England Coalition initial contentions were admitted. In fact, only two were admitted.

³ See *Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548 (2004).

⁴ On March 3, 2006, the Commission declined to a Request from New England Coalition to stay the Staff's issuance of the requested EPU license amendment. New England Coalition argued that issuance of a license amendment prior to a hearing and decision on safety relation contentions; in particular New England Coalition Contention 3 (a requirement for full transient testing) would render the contentions effectively mooted. See *Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-06-08, 63 NRC___ (March 3, 2006).

On April 6, 2006, New England Coalition filed three proposed New Contentions based in part on the NRC Final Safety Evaluation Report (omissions) and in part on cumulative apprehension of emerging issues.⁵

On April 20, 2006, New England Coalition filed a Request for Leave to File a new Contention regarding Entergy Nuclear Vermont Yankee's continued reliance on steam dryer performance modeling adapted from a Quad Cities Nuclear Power Station Program.

On May 1, 2006, the Board issued an Order denying admission of New England Coalition's proposed three new (April 6, 2006) contentions.

On May 25, 2006, NRC Staff and Entergy electronically filed their responses to New England Coalition's (April 20, 2006) proposed new contention.

For the reasons set forth below, New England Coalition submits that NRC Staff and Entergy responses are inadequate, erroneous and irrelevant to addressing the litigability and substance of the instant petition and should be rejected. For all of the good reasons stated in New England Coalition's Request for Leave to File a New Contention and in consideration of the following arguments, New England Coalition's new late-filed contention should be admitted.

DISCUSSION

NRC Staff and Entergy argue that New England Coalition fails

- (1) to demonstrate the existence of a genuine dispute on a material issue of law or fact,
- (2) is not supported by a sufficient basis as required by 10 C.F.R. § 2.309(f),

⁵ In some cases, determination of the "good cause" factor for lateness may involve more than looking at the dates on the various documents submitted by the petitioners. Instead, the Board's inquiry turns on a slightly more difficult determination about when, as a cumulative matter, separate pieces of new information were sufficiently in place to make the specific concerns brought forward by the petitioner reasonably apparent. *Yankee Atomic Electric Co. (Yankee Nuclear Power Station)*, LBP-96-15,44 NRC 8, 26 (1996).

(3) to the extent that the petition may have intended to challenge the sufficiency of the acoustic modeling and methodology relied upon by Vermont Yankee, it is untimely.

1. Existence of a genuine dispute on a material issue of law or fact

It its petition and through Dr. Joram Hopenfeld's testimony, New England Coalition avers, based on new information revealing an unanticipated structural failure of a steam dryer at the Quad Cities Nuclear Power Station, that Entergy should forgo reliance on a steam dryer monitoring and analysis program modeled on the that employed at Quad Cities until it can be verified that cracking in the Quad Cities steam dryer was not cause by flow induced vibration or other increased cyclic stress phenomena that are a result of extended power uprate. NRC Staff and Entergy counter with the production of certain documents, most heavily relying on an Excelon Quad Cities Root Cause Report (ML061420307) to argue that the cause of the Quad Cities dryer cracking was determined not be flow induced vibration and therefore New England Coalition's arguments are invalidated and mooted. However, examination of this document (NRC Staff Exhibit 3 and Entergy Exhibit 5) finds that unanticipated cracks were found in locations other than the lower skirt that was impacted in the installation incident,

" Subsequent inspections also identified cracking in the steam dryer vane bank end plate in the "E" bank (Refs. 12&13), and a crack in the lower right corner of one dryer latch box...Additional cracking was identified during Q2R18, and although not specifically included in the scope of this RCA [Root Cause Analysis], all dryer cracking was reviewed and dispositioned in accordance with IVVI program requirements."

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and that previously analyzed flow conditions were not analyzed (before or after the cracking incident),

"3. Hydrodynamic and acoustic loading on the dryer were reevaluated. Ref.21 noted that the turbulent water loads acting on the dryer skirt were not analytically evaluated, but the skirt is in a relatively quiet region near the vessel wall. This indicates that any loading on the skirt will be a turbulent buffeting from the mixing of these flow streams below the skirt...."

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Further examination of the report finds that metallurgical analysis concluded only that

...it is likely that the lifting event contributed to the observed failure..."

[Emphasis added]

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With respect to the potential contribution of phenomena other than flow induced vibration, turbulence, and strains introduced by the lifting incident, the report adds,

"One additional observation was the presence of transgranular cracking in the weld root region of both the 140 and 220 ° samples. Given the branched nature, along with the presence of multiple indications in both the skirt and baseplate regions, the most likely cause is TGSCC [Transgranular Stress Corrosion Cracking]. TGSCC requires three factors to be present: (1) wetted environment; (2) aggressive species (e.g. halogens); and (3) stress." [Emphasis added]

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Entergy Nuclear Vermont Yankee's discovery, on the eve of issuance of the draft safety evaluation report, of more than fifty cracks, including root weld cracks in the Vermont Yankee steam dryer is a well-known matter of record.

Thus, NRC Staff and Entergy "proofs" that New England Coalition's proposed contention has no technical merit, instead validate and sustain the concern that reliance on steam dryer monitoring methods derived directly from the Quad Cities methodology, because Quad Cities totally failed to predict or detect any of the cracks, should be suspended until credible analysis of the Quad Cities experience can be translated to Vermont Yankee; that is analyzed for reliability and performance with consideration of "as-is" dryer condition and the Quad Cities event(s).

The proofs offered by NRC Staff and Energy serve only to reinforce Dr. Hopenfeld's professional opinion and situational analysis and to reinforce New England Coalition's claim that empirical evidence is not to be brushed off. Further NRC Staff and Entergy "proofs" only go to magnify New England Coalition's claimed material dispute with the licensee.

NRC Staff and Entergy have provided a good deal in the way of argument and exhibits on the material and factual issues that are generated by New England Coalition's proposed contention. This is neither the time nor the forum for presenting such evidence. At this juncture the intervenor is required only to show that a material dispute exist and to provide its contention sufficient basis and specificity so as to allow the Board to determine if a litigable issue exists.

2. Sufficient basis as required by 10 C.F.R. § 2.309(f)

New England Coalition and its expert Dr. Hopfenfeld rely on such new information as was available within the ten-day race to filing; mainly the reference NRC PNO-III-06-010 on the Quad Cities dryer failure and the NRC Staff's Determination to proceed with ascension power testing based on only (at the time) a cursory review of the Quad Cities event.

Since the issuance of NRC PNO-III-06-010, several additional documents have been placed in the public record (ADAMS) and both NRC Staff and Entergy have referenced them in their responses. Had they been available within the time for filing, New England Coalition would certainly have incorporated them and referenced them, as it does here, in fleshing out documentary basis. Intervenors seeking leave to file a late contention have the burden of presenting "a minimal showing that material facts are in dispute, thereby demonstrating that an 'inquiry in depth' is appropriate. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7,43 NRC 235,249 (1996); *Georgia Institute of Technology*(Georgia Tech Research Reactor), CLI-95-12-42 NRC 111,118 (1995) *Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 51 (1994); *accord, Nuclear Management Co., LLC* (Palisades Nuclear Plant), LBP-06-10, 2006 NRC LEXIS 56 (March 7, 2006).⁶

⁶ The Commission has indicated that the factual support necessary to show that "a genuine dispute" exists at the contention filing stage "need not be of the quality necessary to withstand a summary disposition motion." However, the Commission has likewise indicated that a contention may not rest

As demonstrated, above and below, New England Coalition meets that standard.⁷

In fact, NRC Staff asserts, That New England Coalition's contention is admissible in so far as "NEC's proposed new contention relies on the assumption that cracking of the Quad Cities Unit 2 steam dryer was the result of flow-induced vibration associated with its EPU [Emphasis in the original]."

The statement is untrue.

New England Coalition relies on no "assumption." New England Coalition relies on the professional assessment of an expert with more than 40-years of experience in analyzing the subject phenomena. Based on the documents, an intimate and deep understanding of the issues, and the astounding and extensive history of failures at Quad Cities, Dr. Hopenfeld offers his measured opinion that there is a high probability that the cracks were propagated by flow phenomena.

Exelon's Root Cause Report uses language that is no more absolute, opining only that the lifting incident "likely" contributed to the cracking.

The Exelon report mourns the lost opportunity (page 6 of 43) to adequately determine the as-found condition of the steam dryer prior to reinstallation. How, we must ask, would that

merely "on a bald or conclusory allegation" that such a dispute exists. "The protestant must make a minimal showing that material facts are in dispute, thereby demonstrating that an 'inquiry in depth' is appropriate." Statement of Consideration, "Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989), quoting *Connecticut Bankers Ass'n v. Board of Governors*, 627 F.2d 245, 251 (D.C. Cir. 1980).

⁷ Licensing Boards are to be lenient with respect to specificity for petitions drawn pro se or by counsel new to the field or to the bar. *Kansas Gas & Electric Co. (Wolf Creek Generating Station)*, ALAB-279, 1 NRC 559, 576-577 (1975). Also, please see *Wisconsin Public Service Corp. (Kewaunee Nuclear Power Plant)*, LBP-78-24, 8 NRC 78, 82 (1978). *Public Service Electric and Gas Company (Salem Nuclear Generating Station, Units 1 and 2)*, ALAB-1 36, 6 AEC 487, 489 (1973), cited in *Houston Lighting and Power Co. (Aliens Creek Nuclear Generating Station, Unit 1)*, ALAB-590, 11 NRC 542, 546 (1980); *Consumers Power Co. (Midland Plant, Units 1 and 2)*, LBP-82-63, 16 NRC 571, 578 (1982).

compare with the as found condition of the Vermont Yankee dryer, hosting as it does numerous initiator cracks, defects, and repairs? This Board is well aware of New England Coalitions involvement and concern on steam dryer monitoring issues, dating to the November 2005 ACRS meetings and the Board is aware of Dr. Hopenfeld's considered background in analysis of the thermal-hydraulic and other physical phenomena involved in assuring the integrity of the steam dryer. It is against this background, that New England Coalition points to and analyzes timely and seminal documents as basis for the Board to conclude that New England Coalition has raised a substantive and litigable issue.

3. Timeliness

NRC Staff and Entergy argue that the issue of the adequacy and reliability of Vermont Yankee's steam dryer monitoring program has been around for a long time and timeliness has long lapsed for attempting to raise ("again") this issue. What they fail to address is the fact that in any safety evaluation, context must be considered. That is why NRC staff gave review (albeit cursory) to the Quad Cities event in its determination to permit continued ascension power testing.

In balancing consideration of factors in 10 C.F.R. § 2.309(c), good cause for late filing is entitled to the most weight. *State of New Jersey* (Department of Law and Public Safety), CLI-93-25, 83 NRC 289,296 (1993).

In fact, NRC's preliminary notice of the occurrence at Quad Cities was the first notice that New England Coalition had of an empirical demonstration that the steam dryer monitoring program, insofar as it is based on Quad Cities, does not work⁸.

At issue, however is not the quality of the monitoring program over the period of time (as various timeliness milestones have gone by), but the here and now appropriateness of continuing to place reliance on the program in the face of new evidence, a clear, dramatic physical demonstration, that it may not perform as advertised.

NRC Staff admits, "To the extent that NEC's new contention is based upon the March 2006 discovery of cracks at Quad Cities Unit 2, the Staff does not contest the timeliness of NEC's filing." NRC Staff Response at Page 9

CONCLUSION

For the reasons set forth above and its Request for Leave to File a New Contention, the New England Coalition submits that NEC's new contention fully satisfies the Commission's requirements governing admission of contentions, as set forth in 10 C.F.R. § 2.309(f)(1). For these reasons, New England Coalition respectfully requests that its proposed new contention should be admitted as follows:

The failure of modeling, testing, and analysis, in support of extended power uprate (EPU), to detect or predict recent discovery of a 5 foot crack with multiple branches on the surface of the Quad Cities Unit 2 dryer indicates that the technical basis for ascension power testing at the Entergy Vermont Yankee Nuclear Power Station, largely based on the Quad Cities model and methodology, is flawed and cannot reliably predict steam dryer durability or performance under EPU conditions. Because a cracked or fractured steam dryer can result in an accident, prevent mitigation of an accident, or increase the consequences of an accident, with major catastrophic effects on public health and safety, and because Vermont Yankee is proceeding in an unknown condition, the Atomic Safety and Licensing Board, (ASLB) must not permit Vermont Yankee to operate at the EPU conditions until such time as it can be definitively demonstrated that the ascension power

8 Assuming a proposed contention is filed shortly after the information became available, the appearance of information for the first time in a document not available when contentions initially were to be filed would satisfy the "good cause for delay" aspect of the late-filed contention criteria, Yankee Atomic Electric Co. (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 255 (1996).

testing program at Vermont Yankee has not been invalidated by the experience at Quad Cities.

If the Board finds that the Petition or this Reply are handicapped by curable defects, New England Coalition respectfully requests an opportunity to cure such defects prior to a decision on the merits of the proposed new contention.⁹

Respectfully submitted,



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Dated at Edgecomb, Maine
this 1st day of June, 2006

⁹ Benefit of the doubt should be given to the potential intervenor in order to obviate dismissal of an intervention petition because of imprecise language, or procedural or pleading defects. Sequoyah Fuels Corp. (Gore, Oklahoma Site Decontamination and Decommissioning Funding), LBP-94-8, 39 NRC 116 (1994). As such, petitioners will usually be permitted to amend petitions containing curable defects. Virginia Electric & Power Co. (North Anna Power Station, Units 1 & 2), ALAB-146, 6 AEC 631 (1973). See Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), LBP-91-1, 33 NRC 15, 40 (1991); Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), LBP-91-7, 33 NRC 179,195 (1991); Sequoyah Fuels Corporation and General Atomics (Gore, Oklahoma Site), LBP-94-19, 40 NRC 9,15 (1994).

**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 ANSWERS TO NEW ENGLAND COALITION'S REQUEST FOR LEAVE TO FILE A NEW CONTENTION," in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class; or as indicated by an asterisk (*), by deposit in the Nuclear Regulatory Commission's internal mail system; and by e-mail as indicated by a double asterisk (**), this 1st day of June, 2006.

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
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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 ENERGENCY NUCLEAR OPERATIONS, INC.
(Vermont Yankee Nuclear Power Station)

June 1, 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 ENERGENCY
RESPONSES TO NEW ENGLAND COALITIONS REQUEST FOR LEAVE TO
FILE A NEW CONTENTION**

Thank you for your kind assistance in making this filing,



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