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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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

ENTERGY'S RESPONSE TO NEW ENGLAND COALITION'S REQUEST FOR LEAVE TO FILE NEW CONTENTIONS

Pursuant to 10 C.F.R. § 2.309(h)(1), Applicants Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.[1] (collectively "Entergy") hereby submit this Response in opposition to the "New England Coalition's Request for Leave to File New Contentions" ("NEC Request"), filed on April 6, 2006.[2] The NEC Request is inexcusably late and fails to propose any contentions that meet the admissibility requirements of 10 C.F.R. § 2.309(f). Accordingly, it should be denied.

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[1] Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. are the licensees of the Vermont Yankee Nuclear Power Station ("VY").

[2] As further discussed below, the NEC Request should have been filed no later than April 5, 2006 in order to comply with the Atomic Safety and Licensing Board's ("Board") directives. See March 10, 2006 Prehearing Conference, Tr. 778, 823-24.

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I. PROCEDURAL BACKGROUND

On September 10, 2003, Entergy filed an application ("EPU Application") to amend the VY operating license to increase the maximum authorized power level from 1593 megawatts thermal ("MWt") to 1912 MWt (extended power uprate or "EPU").[3]

On August 30, 2004, NEC filed a petition to intervene and request for hearing with respect to Entergy's EPU Application.[4] In its Petition, NEC proffered seven proposed contentions. On November 22, 2004, the Board admitted two of NEC's proposed contentions. LBP-04-28, 60 NRC 548 (2004). Hearings on NEC's two admitted contentions and on two other contentions put forward by the Vermont Department of Public Service are scheduled for September and October 2006, with initial witness testimony and statements of position by the parties due on May 17, 2006 and rebuttal materials due on June 14, 2006.[5]

NEC verbally advised counsel for Entergy and the NRC Staff on January 20, 2006 that it intended to file on January 23, 2006 three new contentions on "alternate source term, small bore pipe breaks, and steam dryer failures." At the prehearing conference with the Board and the parties on January 24, 2006, NEC confirmed its intention to imminently file those new contentions. Tr. 734. Some two and a half months later, NEC finally filed the contentions.

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[3] The EPU Application is available in the NRC ADAMS system under accession number ML032580089.

[4] New England Coalition's Request for Hearing, Demonstration of Standing, Discussion of Scope of Proceeding and Contentions (Aug. 30, 2004) ("Petition").

[5] Revised Scheduling Order (April 13, 2006) at 3-4. Other milestones for the rest of this proceeding are also set forth in the April 13 Order.

II. ARGUMENT

The NEC Request should be denied because the contentions it raises are unjustifiably late. The contentions propounded in the Request were neither prompted by, nor based on, new information in the NRC Staff's Final Safety Evaluation Report ("SER"), but originated with information that NEC admits it had long before the SER was issued. Even if the contentions had arisen from the SER, the NEC Request would still be untimely because it was filed after the deadline for filing new contentions arising from the SER set by the Board. NEC offers no explanation for its lateness in filing these contentions or for its flagrant disregard of the Board's Order.

Moreover, even if the NEC Request had been submitted within the filing deadline, the contentions it seeks to raise are still inexcusably late. A party seeking to raise a late-filed contention based on new information in an NRC licensing proceeding must meet two sets of lateness-related requirements before the contention is admitted: (1) the timing and procedural requirements set forth in 10 C.F.R. § 2.309(f)(2); and (2) the balancing of factors test for nontimely filings in 10 C.F.R. § 2.309(c).[6] As will be seen below, NEC fails to meet both.

Finally, a proposed late-filed contention must satisfy the basic contention admissibility standards of 10 C.F.R. § 2.309(f)(1). LBP-05-32, 62 NRC at 822. The new contentions

[6] In LBP-05-32, 62 NRC 813 (2005), the Board expressed doubts as to whether the balancing of factors test for nontimely filings in 10 C.F.R. § 2.309(c) should apply if a contention based on new information was determined to be timely under 10 C.F.R. § 2.309(f)(2). 62 NRC at 821. The issue need not be resolved in the instant situation because the NEC Request does not meet the timeliness tests of § 2.309(f)(2).

propounded by NEC also fail to meet the contention admissibility tests and must accordingly be rejected.[7]

A. The Proposed New Contentions are Inexcusably Late

1. The Proposed Contentions Do Not Arise From the SER

According to the Board's directive in its order issued on January 17, 2006[8] (repeated at the March 10, 2006 Prehearing Conference), new contentions arising from matters covered in the SER had to be filed within 30 days of distribution of the SER by the Staff. Tr. 778. By NEC's own admission, however, the issues raised in the Request "were not directly addressed in the final SER." NEC Request at 13.[9] NEC further concedes that it was aware of the alleged deficiencies raised in Proposed New Contentions 1 through 3 long before the issuance of the SER in March 2006. "[T]hrough its expert witness, [NEC] provided the Advisory Committee on Reactor Safeguards (ACRS) and the NRC Staff in formal meetings designed for review of technical issues in ENVY's license amendment application and in the draft SER, with exposition on the issues raised in Proposed New Contentions 1-3." NEC Request at 13. Those meetings

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[7] NEC acknowledges that its Request must satisfy both sets of timeliness standards as well as the admissibility requirements applicable to all proposed contentions. NEC Request at 3-5.

[8] "Once the Final SER is issued and delivered to the parties, they shall have ten (10) days within which to move for any adjustment to the schedule herein and thirty (30) days within which to move for leave to file any new or amended contentions." Memorandum and Order (Ruling on Deliberative Process Privilege Claims), LBP-06-03, 63 NRC ___ (Jan. 17, 2006), slip op. at 13-14.

[9] NEC states that it filed its proposed contentions "as soon as possible following New England Coalition's first opportunity to cumulatively apprehend clear and unambiguous information about the erroneous assumptions and conclusions of the licensee regarding radiological dose consequences for design basis accidents ("DBAs") under uprate conditions, the omission of small bore piping analysis, and the misplaced reliance on faulty steam dryer performance analysis, as contained in NRC Staff and Licensee presentations to the ACRS and in the Final SER." NEC Request at 11. NEC is improperly seeking to substitute a subjective standard (when it first "cumulatively apprehended" the information on which its contentions are allegedly based) instead of the objective standard of when such information became available, which was by NEC's own admission long before the SER was issued.

were held, according to NEC and its representative Dr. Joram Hopenfeld, on November 15, 16, 29 and 30, and December 7, 8 and 9, 2005. Id.; Declaration of Dr. Joram Hopenfeld Supporting New England Coalition's New Contentions (April 6, 2006) ("Hopenfeld Declaration") at 2.

Since the new contentions do not arise from the SER but from facts whose knowledge significantly predate the SER issuance, they are by definition nontimely and should be rejected.

2. The NEC Request was Filed After the Board-Imposed Deadline

Even if the three new contentions were based upon the SER, they would be late-filed because they failed to satisfy the Board's directive that new contentions arising from the SER were to be filed within thirty days of the delivery of the SER by the Staff. LBP-06-03, slip op. at 13-14; Tr. 778. The Staff physically delivered the SER to NEC on March 6, 2006. Tr. 823-24. NEC filed the Request on April 6, 2006, thirty-one days after the SER was delivered to NEC and thirty-four days after it was available online in the NRC's ADAMS system. Tr. 780.[10]

Therefore, NEC filed its Request after the expiration of the Board's deadline for filing new SER-based contentions -- a deadline that was explicitly set by a the Board in a written order and brought again to the parties' attention by the Board on March 10, 2006. Tr. 778, 823-24. NEC failed to seek an extension of the deadline and offered no justification for its lateness.

Were this the first instance of NEC's flouting the deadlines set by the Board in this proceeding, leniency might be warranted. However, NEC has a long history of missing filing dates without explanation or justification. Less than a month ago, the Board stated: "The Board is concerned about NEC's repeated and cavalier disregard for the schedule. This pattern of conduct will have a cascading negative effect on the remainder of the proceeding." Order

[10] The SER is available in ADAMS under accession number ML060050028. Its accession date is March 2, 2006.

(Granting Motion for Enlargement of Time Related to NEC Contention 4 and Granting Enlargement of Time, Subject to Sanction, Related to NEC Contention 3) (March 23, 2006) (March 23, 2006 Order) at 2. The Board went on to warn that "parties are advised that the failure to meet the deadlines and briefing schedules may include default under 10 C.F.R. § 2.320." Id. at 3-4.[11] NEC ignored the Board's warning.

Under the circumstances, the remedies provided by 10 C.F.R. § 2.320 are indeed appropriate. That regulation states in part that:

> If a party fails to file an answer or pleading within the time prescribed in this part or as specified in the notice of hearing or pleading, to appear at a hearing or prehearing conference, to comply with any prehearing order entered by the presiding officer, or to comply with any discovery order entered by the presiding officer, the Commission or the presiding officer may make any orders in regard to the failure that are just. . . .

NEC's latest instance of disregard for its obligations as a participant in this proceeding is a violation of the Commission rules and precedent. As the Board has pointed out, the right of participation accorded pro se representatives carries with it the corresponding responsibilities to comply with and be bound by the same agency procedures as all other parties, even where a party is hampered by limited resources. March 23, 2006 Order at 2-3, quoting Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1), ALAB-772, 19 NRC 1193, 1247 (1984). Coming as it does on the heels of the Board's stern warnings, NEC's failure to meet the filing deadline for proposed new contentions by itself warrants the denial of NEC's Request.

[11] The Board subsequently modified this Order as to matters not material to the discussion herein. Memorandum (Clarifying and Correcting March 23, 2006 Order) (March 23, 2006).

3. The Proposed New Contentions Were Not Filed in a Timely Fashion Based on the Availability of the Information on Which They are Based

Since NEC's proposed new contentions are not SER-based, they must comply with the timeliness requirements for late-filed contentions in the NRC regulations. In LBP-05-32, the Board examined the requirements of 10 C.F.R. § 2.309(f)(2) for the admissibility of contentions based on allegedly new information. The Board wrote:

> Our analysis begins with the Commission's regulations for admissibility of "new contentions." This new regulation allows for a "new contention" to be filed upon a showing that:
>
> (i) The information upon which the amended or new contention is based was not previously available;
>
> (ii) The information upon which the amended or new contention is based is materially different than information previously available; and
>
> (iii) The amended or new contention has been submitted in a timely fashion based on the availability of the subsequent information.
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> 10 C.F.R. § 2.309(f)(2)(i)-(iii).
>
> The three requirements listed above do not alleviate the Requester's burden to demonstrate that the new contention meets the standard admissibility requirements of 10 C.F.R. § 2.309(f)(1)(i)-(vi). Rather, the requirements of 10 C.F.R. § 2.309(f)(2)(i)-(iii) provide additional timing and procedural requirements governing the admissibility of new contentions.

LBP-05-32, 62 NRC at 819 (footnote omitted).

NEC's proposed contentions are not based on amended or new information that was not previously available and, even assuming the information was "new," the contentions were not submitted in a timely fashion. Therefore, the contentions proposed by NEC fail the tests for admissibility set forth in 10 C.F.R. § 2.309(f)(2).

As explained above, NEC avers that it raised the issues in New Contentions 1-3 with the ACRS and the NRC Staff during meetings held in November and December, 2005. That NEC chose to raise the issues in different fora and failed to submit them as proposed contentions in this proceeding until April 2006 demonstrates that the "information upon which the amended or new contention is based" was "previously available" to NEC, contrary to 10 C.F.R. § 2.309(f)(2)(i).[12] Thus, NEC's belated filing of the proposed new contentions also fails to satisfy the "timely fashion" requirement of 10 C.F.R. § 2.309(f)(2)(iii).[13]

The Commission has ruled that when a contention is superseded by the issuance of new documents, the contention must be disposed of or modified "as early as possible."[14] Clearly, four months after the new information becomes available is not "as early as possible," particularly at this late stage of the licensing process.[15] Thus, NEC's proposed contentions cannot be deemed submitted "in a timely fashion" and should be dismissed as inexcusably late.

NEC invokes – as it frequently does – its "naiveté as a pro se intervenor" in an attempt to excuse its failure to raise its contentions in a timely manner. NEC Request at 12. This argument also provides no justification for NEC's untimeliness. First, NEC's decision to participate as pro

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[12] The fact that a party may have delayed the filing of a contention in the hopes of resolving the issue outside the adjudicatory proceeding does not constitute good cause for failure to file on time. Commonwealth Edison Co. (Braidwood Nuclear Power Station, Units 1 and 2), CLI-86-8, 23 NRC 241, 245 (1986).

[13] NEC does not discuss these factors systematically with respect to any of its three proposed contentions. It addresses the "not previously available" and the "materially different" factors with respect to Proposed New Contention 1 (Request at 14-15) but not for the other new contentions, and its discussion of the timeliness factor in 10 C.F.R. § 2.309(f)(2)(iii) merely says that the filing is timely because it complies with the Board's schedule for filing new contentions based on the SER (which it does not, as discussed above).

[14] Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382 & n. 42 (2002) (citing Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1050 (1983)).

[15] A good indication of what would be a timely submission is the thirty-day deadline set by the Board for the filing of new contentions based on information contained in the SER.

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 represent it in the VY NRC license renewal proceeding.[16] 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.

In addition, it is well established that a pro se intervenor enjoys no special prerogatives when it comes to meeting its obligations in an NRC licensing proceeding. In particular, pro se intervenors are "expected to comply with our basic procedural rules – especially ones as simple to understand as those establishing filing deadlines." Yankee Atomic Electric Co. (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 201 (1998).

a. Proposed New Contention 1 was not Submitted in a Timely Fashion Based on the Availability of Subsequent Information

Proposed New Contention 1 reads:

> ENVY has failed to provide correctly calculated offsite and control room radiological consequences in the event of a design basis accident ("DBA") under extended power uprate ("EPU") conditions; using both questionable models and applied erroneous assumptions. NRC staff has, through incorporation in the SER, erroneously accepted and approved the ENVY methodology of predicting dose releases under the EPU conditions. Thus ENVY and NRC staff have failed to provide adequate assurance that all Vermont Yankee DBAs while operating under uprate conditions

[16] David Gram, A Busy Year Ahead for Nuclear Plant (Jan. 3, 2006), available online at http://www.concordmonitor.com/apps/pbcs.dll/article?AID=/20060103/REPOSITORY/601030312/1002/NEWS02, copy enclosed as Exhibit 2. Petitions to intervene in this proceeding must be filed by May 28, 2006. 71 Fed. Reg. 15,220 (2006).

> will meet 10CFR 50.67, General Design Criteria 19, and SRP 15.01 radiological dose requirements. Since therefore the public will be at risk of exposure to radioactivity releases that would exceed the allowable limits, ENVY should not be allowed to operate Vermont Yankee Nuclear Power Station under the proposed EPU.

NEC Request at 5. NEC admits in its Request that it had knowledge of the circumstances giving rise to this proposed contention long before the SER was issued in March 2006. "New England Coalition did have notice of one error addressed by Proposed New Contention 3 [sic] and in Dr. Hopenfeld's Declaration (the mistaken assumption that available iodine concentrations under accident conditions will be balanced out by increased flow) as early as issuance of the draft SER, November 2, 2005." NEC Request at 12. That admission alone should suffice to have the proposed contention dismissed as failing to meet the timeliness of submission requirement in 10 C.F.R. § 2.309(f)(2)(iii).[17] Indeed, on NEC's behalf, Mr. Hopenfeld raised some of the same concerns about radiological dose calculations (involving issues that he termed "generic") at meetings held by the ACRS in November 2005.[18]

NEC shifts the blame for its failure to raise this contention in November 2005 (rather than five months later) to the Board. NEC admits that it "considered filing a contention on what it took to be the NRC staff's error at that time." NEC Request at 12. But NEC argues that the Board failed in its Scheduling Order of February 1, 2005 to include a deadline for filing contentions based on the SER, as if this somehow excused NEC from complying with the

[17] The draft SER is available in the ADAMS system with accession number ML053010167. It shows an accession date of November 2, 2005.

[18] See Exhibit 3 at 293-295.

requirements of 10 C.F.R. § 2.309(f)(2)(iii).[19] NEC also asserts that a statement by Judge Rubenstein in an October 14, 2004 prehearing conference[20] misled NEC into not filing a proposed contention until "[o]nly recently, [when] through interaction with the Board on the scope of contentions, New England Coalition has learned not to rely on a plain reading interpretation of the Board's articulations."[21] Whatever NEC means to convey by this unprecedented argument, it hardly justifies NEC's untimely filing.

There is yet another reason why NEC fails to meet the timeliness standards of 10 C.F.R. § 2.309(f)(2) with respect to proposed New Contention 1. The methodology attacked by NEC in proposed New Contention 1 was presented in July 2003 by Entergy when it sought NRC Staff approval of the use of an Alternative Source Term ("AST") (Technical Specification Proposed Change No. 262, submitted under letter BVY 03-70 (July 31, 2003), ADAMS Accession Number ML032190646 ("AST Application").[22] Any alleged deficiencies in that methodology

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[19] NEC ignores that such a deadline was imposed by the Board in its January 17, 2006 Memorandum and Order LBP-06-03.

[20] The referenced prehearing conference actually took place on October 13, 2004.

[21] NEC Request at 12. The allegedly misleading statement by Judge Rubenstein was: "In other words, one should understand that the contentions have to be derived from the SAR and related documents. And one cannot question the SER so that should not be within the scope." Id. (emphasis supplied by NEC). Of course, Judge Rubinstein was referring to the long-standing principle that a contention may not be based on a challenge to the Staff's evaluation of the licensing application, but must address the application itself, including the SAR and related documents. See, e.g., Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-01-3, 53 NRC 84, 97 (2001); Curators of the Univ. of Mo., CLI-95-1, 41 NRC 71, 121-22 (1995), affirmed on motion for consideration, CLI-95-8, 41 NRC 386, 396 (1995); Louisiana Power & Light Co. (Waterford Steam Electric Station, Unit 3), ALAB-812, 22 NRC 5, 55-56 (1985); Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 807 (1983), review denied, CLI-83-32, 18 NRC 1309 (1983).

[22] Copies of the cited pages of the AST Application are enclosed as Exhibit 4 hereto.

should have been raised in the AST proceeding when it was announced almost three years ago,[23] and not here and now. Significantly, the AST Application indicated that "the AST analyses which have been performed consider the core isotopic values at EPU conditions and this application for license amendment is based on a bounding core isotopic inventory." Cover letter of AST Application at 2 (emphasis added).[24] Therefore, NEC was on notice that the methodology and assumptions in the AST Application would be applicable to uprate conditions. If NEC felt that any aspect of the AST analyses should not be used under EPU conditions, it should have challenged it in the AST license amendment proceeding, or at the very latest in its August 2004 Petition.

b. Proposed New NEC Contention 2 Is Untimely

NEC's proposed New Contention 2 reads:

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

NEC Request at 6. This proposed new contention has nothing to do with the SER, and NEC never claims it does. As stated by NEC, "Contention Two is a simple contention of omission," NEC Request at 10, for it claims that an analysis that should be performed in support of the EPU

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[23] See 68 Fed. Reg. 66,131, 66,135 (Nov. 25, 2003).

[24] Likewise, the Safety Assessment in support of the AST Application ("Safety Assessment") states that "[t]he radiological dose analyses have been performed assuming reactor operation at the Extended Power Uprate thermal power of 1950 MWt (102% of 1912 MWt)." BVY 03-70, Attachment 5, Safety Assessment at 1.

(the analysis of small bore pipe breaks) has not been conducted. Accepting the contention at face value, this analysis was unaccountably missing when the EPU Application was originally filed in September 2003 and was not included in subsequent supplements to the EPU Application.[25] Its alleged absence could and should have been raised as a proposed contention by NEC with its Petition in August 2004, as it did for the alleged missing Cooling Tower analysis in NEC-4. The contention is almost two years too late and there is no possible way it could be considered timely now. It should be rejected for failure to comply with any of 10 C.F.R. § 2.309(f)(2)(i), (ii) or (iii) requirements.

c. Proposed New Contention 3 is Based on Information that Has Long Been Available to NEC

Proposed New NEC Contention 3 alleges:

> ENVY Technical Specification Proposed Change No.263 w/ Supplements 1-42 does not comply with Drafts GDC- 40 and 42 insofar as they require that protection must be provided against the dynamic effects of a LOCA.
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> Specifically, and in contradiction to Supplement 42 (provided to New England Coalition 12 05/ 2005) and ENVY testimony before the NRC Advisory Committee on Reactor Safeguards (11/15/2005, 11/16,2005, 11/29/2005, 11/30/2005, 12/07/2005, 12/08/2005, 12/09/2005), and the Steam Dryer Monitoring Plan endorsed in the NRC Final Safety Evaluation Report at page 50, and NRC staff endorsement of Ascension Power Testing as described in NRC staff's response to public comments on the SER at page 325, and NRC Staff's acceptance of ENVY steam dryer inspection results as determinative of no further crack growth at SER page 337, New England Coalition asserts that:
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> a. The fatigue and the intergranular stress corrosion cracks, (IGSCC) which already exist on various Vermont Yankee steam dryer surfaces will increase in number and grow in size because of

[25] As discussed below, the allegedly missing reference to small bore pipe break radiological consequences analysis was contained in Supplement 4 to the EPU Application.

the higher stresses on the dryer structure from flow induced vibrations under EPU conditions.

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

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

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

NEC Request at 6-7. At the center of this lengthy formulation appears to be the discovery of stress corrosion cracks on the surface of the steam dryer at VY during refueling outage nos. 24 and 25 (spring 2004 and fall 2005, respectively). Hopenfeld Declaration at 12. Those cracks are allegedly similar to those discovered at other reactors that have implemented EPUs, particularly Quad Cities (2002) and Dresden (2004). Id. at 11-12. The solution proposed by Entergy for EPU operation at VY consists of monitoring of vibration during power ascension coupled with technical analyses to show that the cracks will not propagate under EPU operations, including design basis accidents. NEC challenges the adequacy of both the monitoring program and the analyses performed by Entergy. Id. at 11-13.

NEC's proposed New Contention 3 challenges "Supplement 42 (provided to New England Coalition 12 05/ 2005) and ENVY testimony before the NRC Advisory Committee on Reactor Safeguards (11/15/2005, 11/16,2005, 11/29/2005, 11/30/2005, 12/07/2005, 12/08/2005, 12/09/2005), and the Steam Dryer Monitoring Plan endorsed in the NRC Final Safety Evaluation

Report at page 50, and NRC staff endorsement of Ascension Power Testing as described in NRC staff's response to public comments on the SER at page 325, and NRC Staff's acceptance of ENVY steam dryer inspection results as determinative of no further crack growth at SER page 337." NEC Request at 6. NEC states that the information on Entergy's proposed approach for dealing with the steam dryer concerns is contained in "Supplement 42 (provided to New England Coalition 12 05/ 2005) and ENVY testimony before the NRC Advisory Committee on Reactor Safeguards (11/15/2005, 11/16/2005, 11/29/2005, 11/30/2005, 12/07/2005, 12/08/2005, 12/09/2005)," in the "the Steam Dryer Monitoring Plan," the "Ascension Power Testing," and Entergy's "steam dryer inspection results." Id. While NEC does not cite the dates of the last three events it challenges, they are as follows: the Steam Dryer Monitoring Plan and the Power Ascension Power Testing plan were submitted in Attachment 6 to Supplement 33 and in Attachment 1 to Supplement 36 to the EPU Application on September 14, 2005 and October 17, 2005, respectively,[26] and the steam dryer inspection results were submitted in Supplement 42 to the EPU Application on November 22, 2005.[27] Thus, according to the contention itself, NEC had knowledge of Entergy's proposed plan of action as early as November 2005, four and a half months before the contention was filed.[28] By its own admission, NEC had obtained all the information that purports to serve as the basis for proposed New Contention 3 over four months

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[26] See SER at 42, 46. Supplement 33 is available in ADAMS with accession number ML052650122; Supplement 36 is available in ADAMS with accession number ML052940225.

[27] See SER at 333. Supplement 42 to the EPU Application is available in ADAMS with accession number ML053320190.

[28] The contention also avers that in the SER the NRC Staff "endorsed" Entergy's steam dryer monitoring plan and power ascension plan and "accepted" the results of Entergy's steam dryer inspection results "as determinative of no further crack growth," see NEC Request at 6, but it does not claim that any new factual information on which the contention is based was contained in those Staff issuances.

before filing it.[29] Thus, the proposed contention fails to satisfy the timeliness of submission requirement in 10 C.F.R. § 2.309(f)(2)(iii).[30]

NEC acknowledges that it was aware of the alleged potential vulnerability of VY to flow-induced vibration failure of its steam dryer as early as 2004. Dr. Hopenfeld cites a January 2004 NRC Information Notice on the "failure of the [steam] dryer and the formation of loose parts at Quad Cities." Hopenfeld Declaration at 13. Dr. Hopenfeld also cites to a March 2005 presentation on "the rapid crack formation and growth at Dresden." Id. NEC could have and should have raised its steam dryer contention when it filed its Petition in August 2004.

In reality, NEC itself had asserted the alleged vulnerability of the VY steam dryer to failure due to flow-induced vibration during EPU operations as early as August 2003, when NEC submitted testimony by its witness Arnold Gundersen in the Vermont EPU proceeding. In his testimony, Mr. Gundersen testified extensively about the claimed risk of steam dryer failures at VY, stating as follows:

> Q 5 Are there additional examples of a components likely to have an adverse effect on reliability under extended power uprate conditions that you would like to bring to the Board's attention?
>
> Response: There are many examples of components at Vermont Yankee that are showing signs of age and wear; all of which result in reduced safety margins and reduced reliability. Reactor components are embrittled, the reactor vessel pressure head has

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[29] Dr. Hopenfeld also testified before the ACRS on behalf of NEC about alleged steam dryer deficiencies at VY in November 2005. See Exhibit 3.

[30] In an apparent attempt to bring the contention within the bounds of timeliness, NEC asserts that the Staff acceptance of Entergy's proposed inspection program in the SER "is materially different than what was presented in the draft SER." NEC Request at 15; see also Hopenfeld Declaration at 14. However, the acceptance by the Staff of Entergy's proposed testing program and analyses is irrelevant to this proceeding, since as Judge Rubenstein noted, "one cannot question the SER" in an NRC licensing proceeding. Neither NEC nor Dr. Hopenfeld point to any new information in the SER that would provide the basis for a new contention.

indications of surface cracking, and the reactor core shroud has cracked and is held together with improvised fixtures.

The progress of these phenomena under normal conditions that is, original license power or even minor uprate conditions, can largely be anticipated from the experience of other reactors. I would like to point out however that the program for extended power uprates is very new with only eight reactors uprated 17 percent or more and just three reactors having received 20 percent uprates; all during 2002. The record so far is not good. The Quad Cities - Unit 2 nuclear reactor, uprated by 17.8 percent in 2001, had a major steam dryer failure in June 2002.

As early as 9/26/02, VY was aware that increasing the reactor flow would cause problems with the Steam Dryer. Rather than completely analyze the problem, in an unsigned, undated, untitled document provided by Entergy in discovery, reviewer Brian Hobbs was told " ... add a statement justifying why expansion of the operating domain will not result in dryer component failures." (The only available reference to the identity of this document provided by Entergy is 128/t0305, but I do not know what that means.)

I testified before the Board on June 19, and was unaware that the same dryer had failed a second time on June 11, 2003. In my oral testimony, I related problems that I had encountered on early BWR's wherein we had thought we had solved the problem, only to have it erupt again within a year. This is exactly what happened at Quad Cities, and what ENVY had denied could happen at Vermont Yankee. In fact, the second failure now appears to be much worse than originally reported.

According to NRC Information Notice 2002-26, supplement 1, dated July 21, 2003, "Inspection of the dryer revealed (10 through wall cracks (about 90 inches long) in the vertical and horizontal portions of the blank hood, 90 degree side, (2) one vertical and two diagonal braces detached...(3) one severed internal brace... and (4) three cracked tie bars. ...The licensee believes that the most probable cause of the failure is low frequency, high cycle fatigue driven by flow induced vibrations associated with higher steam flows present during EPU operating conditions."

The Board is urged to remember that in 2002, Quad Cities told the NRC that the repairs would successful solve the first failure. In the "Preliminary OE Report", OE16403, the NRC states that after the

first failure, "Several teams of Excelon Nuclear, General Electric and industry experts are assembled to ...determine the ...corrective actions."

Despite this expert review, the dryer failed again and the failure was much worse, less than a year later. The key statement from the latest NRC information notice is exactly what I had been trying to tell the Board in my oral testimony. "GE Nuclear Energy and the licensee did not foresee this phenomenon." As Shakespeare would say, "There are more things in heaven and earth, Horatio, then are dreamt of in your philosophy." When you push an old plant beyond what it was designed to perform, there will always be situations where Entergy "...did not foresee this phenomenon."

ENVY Expert Witness Burns (reliability expert) provides an exhibit highlighting the significance of the two events at Quad Cities. It is an Inside NRC trade publication article from June 30, 2003 that states, "...fatigue relating to the age of the plant may have contributed to the crack." By providing this exhibit, Mr. Burns apparently supports the point I made in my oral testimony, when I stated that plants built when Lawrence Welk was on TV were more likely to experience failures.

Despite all indications that the steam dryer is marginal even at VY's current power level, Entergy has chosen not to improve the system in any major way. Specifically, in Jay Thayer's Prefiled Rebuttal Testimony, dated July 2, 2003, attachment EN-JKT-10 is entitled Vermont Yankee Power Upgrade Project Description. Based on this description, VY has no intention of making any improvements to the steam dryer system in response to the second Quad Cities event. In response to the first Quad Cities event, Entergy had committed only to provide a heavier top plate and round over the plate's edges in hopes of avoiding eddy currents. Thus Entergy's approach to design analysis remains reactive and may well lead to Entergy conducting post-analysis on its own version of steam dryer or other component failure.

VY already has cracks in its steam dryer and surrounding area.

The number 215 Dryer support bracket has had cracks since 1983 according to a Report of In-Vessel Examination, dated March-April 1995).

In 1999 a report titled, Vermont Yankee RFO 21, identified three new cracks in three of the Steam Dryer Jacking Bolts (144,215,

> and 324). (Despite our discovery request, ENVY failed to provide section 2.4 of this report, which discusses the magnitude of these cracks.
>
> In the 2002 RFO 23 In-vessel Services Final Report, new debris was located on the 180 degree end of the Dryer Cover Plate. Despite our discovery request, ENVY failed to provide tab 9 of this report, which discusses the magnitude of this debris.
>
> Because ENVY failed to provide key pieces of information, I am forced to conclude that the trend is that failures in this area are continuing to grow.

State of Vermont Public Service Board, Docket 6812, Prefiled Surrebuttal Testimony of Arnold Gundersen on Behalf of New England Coalition, dated August 19, 2003 at 9-12.[31]

It is thus clear that NEC's proposed New Contention 3 fails to satisfy any of the timeliness requirements in 10 C.F.R. § 2.309(f)(2)(i), (ii) or (iii) and should be dismissed.

B. The Balancing Test for Admissibility of Late-Filed Contentions Weighs Heavily Against the Admission of NEC's Proposed New Contentions

A late-filed contention in a Commission licensing proceeding may be admitted only upon the presiding officer's determination that it should be admitted after balancing the following eight factors, all of which must be addressed in the filing of the party requesting that the contention be admitted:

> (i) Good cause, if any, for the failure to file on time;
>
> (ii) The nature of the requestor's/petitioner's right under the Act to be made a party to the proceeding;
>
> (iii) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding;

[31] A copy of this excerpt of Mr. Gundersen's surrebuttal testimony is enclosed as Exhibit 5.

(iv) The possible effect of any order that may be entered in the proceeding on the requestor's/petitioner's interest;

(v) The availability of other means whereby the requestor's/petitioner's interest will be protected;

(vi) The extent to which the requestor's/petitioner's interests will be represented by existing parties;

(vii) The extent to which the requestor's/petitioner's participation will broaden the issues or delay the proceeding; and

(viii) The extent to which the requestor's/petitioner's participation may reasonably be expected to assist in developing a sound record.

10 C.F.R. § 2.309(c)(1). Those seeking admission of a late-filed contention bear the burden of showing that a balancing of these factors weighs in favor of admittance. Baltimore Gas & Elec. Co. (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 347 (1998).

The first factor, whether good cause exists for the failure to file on time, is entitled to the most weight. Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-05-24, 62 NRC 551, 564 (2005); State of New Jersey (Department of Law and Public Safety), CLI-93-25, 38 NRC 289, 296 (1993); LBP-05-32, 62 NRC at 821. To demonstrate good cause, the proponent must show not only why it could not have filed within the specified time, but also that it filed as soon as possible thereafter. Millstone, CLI-05-24, supra. NEC has provided no credible explanation for its lateness in submitting the proposed new contentions, and has totally failed to explain why it took at least four months for it to request their admission; in fact, why it did not raise all of them with its Petition in August 2004.

Where, as is the case with the NEC Request, no showing of good cause for the lateness is tendered, the petitioner's demonstration on the other factors must be "compelling." Millstone, CLI-05-24, supra; Texas Utilities Elec. Co. (Comanche Peak Steam Electric Station, Units 1 and

2), CLI-92-12, 36 NRC 62, 73 (1992). Whereas the Board has already ruled that NEC satisfies factors (ii), (iii) and (vi), LBP-05-32, 62 NRC at 822, the other factors weigh strongly against admission of NEC's late-filed contentions. The fourth factor, the possible effect of any order that may be entered in the proceeding on the requestor's interest, argues against admission of the proposed new contentions. NEC is already a party to this proceeding and will be able to advance its interest regardless of how the Board rules on its proposed new contentions. Likewise, the fifth factor, the availability of other means to protect the requestor's interest, weighs against allowing the admission of these contentions. The Commission has recently reaffirmed that a party, like NEC, seeking to raise safety issues in connection with the operation of a licensed facility, can "file a petition under 10 C.F.R. § 2.206 requesting that the NRC Staff take enforcement or other action" with regard to the facility. Millstone, CLI-05-24, 62 NRC at 565. The record of the handling of such petitions by the NRC Staff shows that the petitions constitute a meaningful avenue for seeking relief from perceived safety deficiencies. Id. at n. 63. In addition, NEC was afforded the opportunity to make several arguments before the ACRS on these very topics, and took advantage of it.

The seventh factor in 10 C.F.R. § 2.309(c)(vii), the extent to which the requestor's participation will broaden the issues or delay the proceeding, argues strongly against admission of NEC's untimely new contentions. None of the issues that NEC seeks to raise has been before the Board. Compare LBP-05-32, 62 NRC at 822. Their admission would unquestionably broaden the scope of this proceeding and would lead to significant delays in its ultimate resolution. The impact of these proposed new contentions is magnified because they come near

the start of the hearings on other contentions, which have now been outstanding for a year and a half.[32]

NEC has failed to show that the last factor, the extent to which the requestor's participation may reasonably be expected to assist in developing a sound record, favors admission of its proposed new contentions. NEC's main argument is that it now has the assistance of two former NRC Staff members, Drs. Joram Hopenfeld and Ross Landsman, to assist NEC to provide "expert assistance and direction" to NEC. NEC Request at 11. However, there is no indication that Dr. Landsman has any prior experience or expertise on the subject matter of the new contentions, and the NEC Request nowhere references any support provided by Dr. Landsman with respect to them. Dr. Hopenfeld's resume (filed as Exhibit A to NEC's December 23, 2005 Answer to Entergy's Motion for Summary Disposition of NEC Contention 3) suggests that Dr. Hopenfeld has considerable experience on pressurized water reactor steam generator tube degradation issues, but none on the topics NEC seeks to raise here. It is interesting to note that neither Dr. Landsman nor Dr. Hopenfeld was put forward by NEC when it presented testimony on steam dryer issues before the Vermont Public Service Board in 2003. See Exhibit 5.

As noted above, requestors seeking admission of a late-filed contention bear the burden of showing that a balancing of the factors listed in 10 C.F.R. § 2.309(c)(1) weighs in favor of admittance. NEC has clearly fallen short of making such a showing.

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[32] NEC argues that the "Board has set a schedule for Response (25 days) and Reply (7 days) regarding the proposed new contentions which would accomplish these preliminaries prior to scheduled submission of initial filings, now set for May 17, 2006." NEC Request at 10. Those are of course, the preliminaries to the litigation of these proposed claims. If NEC's new contentions are admitted, their adjudication will undoubtedly extend well into next year.

C. NEC's Proposed New Contentions do not Satisfy the Admissibility Requirements for Contentions in NRC Licensing Proceedings

In addition to fulfilling the requirements of 10 C.F.R. § 2.309(f)(2), a party requesting the admission of a late-filed contention must also show that the contention meets the basic contention admissibility requirements of § 2.309(f)(1)(i)-(vi). See Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station), CLI-93-12, 37 NRC 355, 362-363 (1993); LBP-05-32, 62 NRC at 822. This regulation requires a requestor to:

> (i) Provide a specific statement of the issue of law or fact to be raised or controverted;
>
> (ii) Provide a brief explanation of the basis for the contention;
>
> (iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;
>
> (iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;
>
> (v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and
>
> (vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

10 C.F.R. § 2.309(f)(1)(i)-(vi).

A proposed contention must refer to specific documents and be accompanied by a concise statement of the alleged facts or expert opinion which support the proposed contention. See Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001) (citing Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333 (1999)). Failure to comply with any of the requirements may be grounds for dismissing a contention. Millstone, CLI-05-24, 62 NRC at 567, citing Final Rule, "Changes to Adjudicatory Process," 69 Fed. Reg. 2,182, 2,221 (2004); Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999).

1. Proposed New NEC Contention 1 Does Not Meet Admissibility Standards

Proposed New Contention 1 asserts that Entergy has failed to provide correctly calculated offsite and control room radiological consequences in the event of a design basis accident ("DBA") under EPU conditions; using both questionable models and applied erroneous assumptions. The bases for Proposed New Contention 1 are described by Dr. Hopenfeld as follows:

> a. The iodine source term is not affected by the EPU because the 20% increase in fission products is compensated by a 20% decrease in the iodine concentration in the coolant, or, as NRC staff, apparently in complete agreement, restated ENVY's position, both in testimony before ACRS (tr. ACRS, 11/30/2005 at p.205) and in the draft Safety Evaluation Report (DSER) at p.248, 2.10.1, " The concentration of noble gas and other volatile fission products in the main steam line [under EPU] will not change. The increased production rate (20%) of these materials is offset by the by the corresponding increase in steam flow (20%)."

b. The use of iodine activity of 1.1 uCi/gm and 4uCi/gr with a pre accident iodine spike in the dose calculations is not applicable to the EPU conditions.

c. The assumption that the concurrent iodine spike during the Main Steam Line Break, MSLB, can be ignored is incorrect and is not valid.

d. The assumption that dry well sprays will remove iodine is not applicable to the MSLB design basis accidents.

e. The assumption that credit can be taken for iodine deposition in the main steam lines is not valid.

Hopenfeld Declaration at 4. This recitation of alleged deficiencies fails to comply with a fundamental requirement for the admissibility of proposed contentions, that is, that they "must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes." 10 C.F.R. § 2.309(f)(1)(vi) (emphasis added). With respect to the five claims raised in the proposed contention, neither NEC nor Dr. Hopenfeld cite where in the EPU Application the allegedly erroneous assumptions are made.

In support of the claim in Dr. Hopenfeld's item a (the assumption that the iodine source term is not affected by the EPU because the 20% increase in fission products is compensated by a 20% decrease in iodine concentration in the coolant), Dr. Hopenfeld cites the Staff's testimony before the ACRS and the Staff's draft SER (Hopenfeld Declaration at 4) but does not cite where in Entergy's EPU Application the assumption is made. This comes as no surprise, for no such an assumption was made in Entergy's accident analyses.[33]

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[33] The quotation from the draft SER that Dr. Hopenfeld references is taken out of context, since the NRC Staff is addressing there the radioactive releases during normal plant operations, not during accidents. This is demonstrated by the next sentence after those quoted by Dr. Hopenfeld; the complete quotation reads: "The concentration of noble gas and other volatile fission products in the main steam line will not change. The increased production rate (20%) of these materials is offset by the corresponding increase in steam flow (20%). Although the concentration of these materials in the steam line remains constant, the increased steam flow

Footnote continued on next page

The allegation in Dr. Hopenfeld's item b, which challenges the use of iodine activity of 1.1 uCi/gm and 4uCi/gr "with a pre-accident iodine spike" in the dose calculations, references Entergy's testimony at the ACRS meeting on November 29 and December 8, 2005. Hopenfeld Declaration at 5. Testimony before the ACRS is not part of the EPU Application. In fact, the EPU Application does not contain source term computations, but references the AST Application for such data.[34] As discussed earlier, the AST Application was filed in 2003 and NEC was, or should have been, aware of its contents at that time.

Dr. Hopenfeld provides no reference whatsoever for the claims that Entergy ignored the concurrent iodine spike during an MSLB event (item c), or that it assumed that drywell sprays will remove iodine during MSLB events (item d), or that it erroneously took credit for iodine deposition in the main steam lines (item e). These are not mere inadvertent omissions by NEC. They reflect the fact that the allegedly erroneous assumptions with which Entergy is charged were actually not made. Neither the EPU Application nor the AST Application make any of these three assumptions, as NEC claims.

NEC's proposed New Contention 1 fails because its claims do not controvert the EPU Application.

Footnote continued from previous page

results in a 20% increase in the rate these materials are introduced into the main condenser and offgas systems." See Draft SER, ADAMS Accession Number ML053010167 at 248, emphasis added. That the quotation is taken out of context is made even clearer by the fact that the text quoted by Dr. Hopenfeld is not in the radiological consequences of design basis accidents section of the draft SER (Section 2.9.2 at 247) but in the health physics section dealing with occupational and public radiation doses during normal operations (Section 2.10.1 at 248).

[34] See Sections 8.3, 8.5 and 9.2 of the "Safety Analysis Report for Vermont Yankee Nuclear Power Station Constant Pressure Power Uprate," GE Nuclear Energy Report NEDO-33090 (Rev. 0) dated September 2003 (non-proprietary version), available in the ADAMS system with accession number ML032580103. (This report was submitted as Attachment 6 to the EPU Application.) Copies of the cited sections are included in Exhibit 6.

2. Proposed New NEC Contention 2 Does Not Raise a Litigable Issue

The basis for proposed New NEC Contention 2 is described by Dr. Hopenfeld as follows:

> NRC RS-001, Insert 9 for Section 3.2 -2.9.3, "Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment," requires that the NRC review the analysis of the radiological consequences of failures outside the containment of small lines connected to the primary coolant pressure boundary.
>
> * * * *
>
> Further, diligent search of ENVY Technical Specification Proposed Change No.263 w/ Supplements 1-42 has not discovered any comprehensive discussion of the information required to complete a review under RS-001, Insert 9, Section 3.2-2.9.3, "Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment". I can only conclude that ENVY has not provided the requisite information in the instant application.

Hopenfeld Declaration at 9-10.

The claim raised by NEC in Proposed New Contention 2 is that the EPU Application is incomplete in that it does not provide the information required for the NRC to perform its review under RS-001, Insert 9, Section 3.2-2.9.3; i.e., it lacks a discussion of the radiological consequences of the failure of small lines carrying primary coolant outside of containment. This proposed new contention is one of omission, for it alleges that analyses that should have been performed in support of the EPU Application do not exist. See, e.g., Memorandum and Order (Granting Motion to Dismiss State Contention 6) (Mar. 15, 2005) at 4.

However, according to the very NRC guidance on which NEC purports to rely, an EPU applicant who submits an AST application need not submit an analysis of the radiological consequences of small bore line breaks. See RS-001, "Review Standard for Extended Power

Uprates" (Rev. 0, Dec. 2003), ADAMS accession number ML023610659 at p. 59 (Matrix 9, p. 2).[35]

NEC also ignores that information responsive to the cited section of RS-001 is part of the EPU Application, and has been available since January 2004. In Supplement 4 to the EPU Application, Entergy makes reference to this NRC guidance as the basis for not submitting such an analysis. Enclosed as Exhibit 8 is Matrix 9 of Attachment 6 to letter BVY 04-009 (January 31, 2004), which forwarded Supplement 4 to the EPU Application (ADAMS accession number ML040360118). Matrix 9 discusses how the VY EPU complies with Section 2.1 of RS-001, the NRC Staff review standard for power uprates. On page 8 of the notes to Matrix 9 there is the following entry under SE 2.9.3 (the section cited by Dr. Hopenfeld):

> SE 2.9.3 VY NOTE, Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment: RS-001 Matrix 9 states that this review criterion is applicable to EPU's that do not utilize alternative source term. VYNPS previously submitted an Alternative Source Term license amendment request.[36]

Thus, the reason that the EPU Application did not include an analysis of the radiological consequences of the failure of small lines carrying primary coolant outside containment is that it was not required to do so.

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[35] According to RS-001, the analysis of the radiological consequences of the failure of small lines carrying primary coolant outside containment is applicable only to "EPUs that do not utilize alternative source term whose failure of small lines carrying primary coolant outside containment result in fuel failure." A copy of the relevant page of RS-001 is included as Exhibit 7.

[36] The same statement appears on Section 2.9.3 of Insert 9 to the "Revised Safety Evaluation Template for GDC," Attachment 4 to letter BVY 04-009. Section 2.9.3 reads: " 2.9.3 Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment [This section is not applicable because the Vermont Yankee Nuclear Power Station is implementing an alternative source term.] See Exhibit 8.

NEC's proposed contention erroneously alleges that a required analysis is missing when in reality such an analysis is not required. The contention lacks factual basis and does not show "that a genuine dispute exists with the applicant/licensee on a material issue of law or fact" and thus fails to satisfy 10 C.F.R. § 2.309(f)(vi). It must be dismissed for, as the Board has noted, "[a]ny contention that fails directly to controvert the application or that mistakenly asserts the application does not address a relevant issue can be dismissed." LBP-04-28, 60 NRC at 557.

3. Proposed New NEC Contention 3 Lacks Factual Basis and is Impermissibly Vague and Speculative

NEC's proposed New Contention 3 makes a number of unsupported and ill-defined claims against the performance of the steam dryer at VY. These allegations fall into three general categories:

- Claims that Entergy "did not provide a supporting analysis showing that the strain gage data is applicable and relevant to the prediction of the fatigue loads on the dryer." Hopenfeld Declaration, at 11 ¶ 10c. If NEC and Dr. Hopenfeld are claiming that a supporting analysis simply does not exist, they are mistaken. Information regarding this analysis was provided to the NRC in docketed submittals including Supplements 8 (7/2/04), 13 (9/14/04), 15 (9/23/04), 20 (10/7/04), 26 (3/31/05), 27 (4/5/05), 29 (6/2/05), 30 (8/1/05), 31 (8/4/05), and 33 (9/14/05) to the EPU Application.[37] The analysis is contained in both proprietary and non-proprietary documents generated by Entergy's contractors GE Nuclear

[37] All supplements to the EPU Application are available in the NRC ADAMS system.

and Continuum Dynamics, Inc. ("CDI"). For those files that contained proprietary information, redacted versions were also made available.

If, on the other hand, the claim is that the analysis exists but is somehow deficient, NEC has failed to specify in what respects the analysis is deficient. The contention is therefore unacceptably vague and fails to satisfy the Commission's test for specificity. 10 C.F.R.§ 2.309(f)(1)(ii); Baltimore Gas & Electric Co. (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 NRC 39, 41 (1998).

- Claims that the cracks discovered at VY during Refueling Outage nos. 24 and 25 will grow "rapidly" under EPU operation and may lead to the creation of loose parts. Hopenfeld Declaration at 10, ¶¶ 10a. and 10b and 11, ¶ 10f. Entergy, NEC claims, has not provided "adequate or technically defensible" analysis showing that rapid crack propagation will not occur. Id. at 12, ¶¶ 10g. and 10h. Again, if Dr. Hopenfeld is asserting that Entergy has performed no analyses of crack propagation potential, he is mistaken. Extensive analyses of the issue have been performed by Entergy and GE Nuclear. Information regarding these analyses were provided to the NRC in docketed submittals including Supplements 8 (7/2/04), 13 (9/14/04), and 42 (11/22/05) to the EPU Application. Those analyses are non-proprietary and have been readily available to NEC in ADAMS.

  If, on the other hand, NEC claims that the analyses are inadequate or technically indefensible, NEC has completely failed to state in what respect the analyses are deficient.

- Claims that the computer models used to calculate flow induced loads on the dryer are unreliable and "can not predict reliably high cycle fatigue due to fluctuating loads during normal operations and following DBAs because they were not benched marked against full scale tests or at least properly scaled tests." Hopenfeld Declaration at 13-14, ¶ 10i. Again, benchmarking reports on the computer models used by Entergy are contained in proprietary records kept by the vendors. Those reports have been provided to and/or audited by the NRC Staff. The computer analyses are contained in both proprietary and non-proprietary documents generated by Entergy's contractors GE Nuclear and CDI. Information regarding these analyses was provided to the NRC in docketed submittals including 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), 31 (8/4/05), and 33 (9/14/05) to the EPU Application. For those files that contained proprietary information, redacted versions were provided.

  Any claims of deficiencies in the computer models themselves are unspecified and unsupported.

In short, no supporting evidence is offered for any of the claims raised in this proposed contention. Nor is there a description of the deficiencies alleged to exist in the VY analyses and test data.

It is well settled that vague or conclusory assertions, even by an expert (which, as explained earlier, Dr. Hopenfeld is not) cannot support the admission of a proffered contention. Without more, these undefined assertions fail the Commission's test for specificity. 10 C.F.R.§

2.309(f)(1)(ii); Calvert Cliffs, CLI-98-14, supra; Fansteel, Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003); Dominion Nuclear North Anna, LLC (Early Site Permit for North Anna ESP Site), LBP-04-18, 60 NRC 253, 265 (2004).

Failure to adequately support a contention's bases requires that the contention be rejected. Arizona Public Service Co. (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), CLI-91-12, 34 NRC 149, 155 (1991). NEC's Proposed New Contention 3 amounts to nothing more than a string of vague and unsupported assertions by Dr. Hopenfeld. The contention lacks an adequate basis and should not be admitted.

III. CONCLUSION

NEC's Request constitutes a belated attempt to introduce into this proceeding, at the eleventh hour, issues of which NEC was or should have been aware at the time it filed its Petition in August 2004. Because of their unjustified untimeliness and their failure to meet the Commission's other admissibility standards, the contentions proffered by NEC in its Request are inadmissible. Therefore, NEC's Request should be denied.

Respectfully submitted,

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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

CERTIFICATE OF SERVICE

I hereby certify that copies of "Entergy's Response to New England Coalition's Request for Leave to File New Contentions" were served on the persons listed below by deposit in the U.S. mail, first class, postage prepaid, and where indicated by an asterisk by electronic mail, this 1st day of May, 2006.

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ASSOCIATE ATTORNEYS

ANDREW N. RAUBVOGEL
EILEEN I. ELLIOTT
OF COUNSEL

March 8, 2006

HAND DELIVERED

Mrs. Susan Hudson, Clerk
Vermont Public Service Board
112 State Street, Drawer 20
Montpelier, VT 05620-2701

Re: Petition of Entergy Nuclear Vermont Yankee
Docket No. 6812

Dear Mrs. Hudson:

Enclosed for filing in the above matter are the original and six copies of the following documents:

1. New England Coalition's (NEC's) Notice of Appeal to Supreme Court, along with a check in the amount of $225.00 for the filing fee;

2. NEC's Motion for Injunction Pending Appeal;

3. Notice of Appearance of Ronald A. Shems and John B. Kassel on behalf of NEC.

I would appreciate your bringing this to the Board's attention at your earliest convenience. Thank you.

Sincerely,

John B. Kassel
SHEMS DUNKIEL KASSEL & SAUNDERS PLLC

Encs.
cc: Docket No. 6812 Service List
Clerk, Vermont Supreme Court

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EXHIBIT 1

*Also admitted in the District of Columbia

STATE OF VERMONT
PUBLIC SERVICE BOARD

Petition of Entergy Nuclear Vermont Yankee, LLC et al.	))	No. 6812

NOTICE OF APPEAL

The New England Coalition, a party before the Public Service Board in this matter, gives notice of its appeal to the Vermont Supreme Court of the Board's March 3, 2006 Order re: Filings and Other Motions.

March 8, 2006 New England Coalition

by: JBK

Ronald A. Shems
SHEMS DUNKIEL KASSEL & SAUNDERS PLLC
For the firm

Attorneys for NEC

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Vermont

A busy year ahead for nuclear plant

By DAVID GRAM
The Associated Press

January 03. 2006 8:00AM

Seeking to boost its power output, expand its nuclear waste storage capabilities and add 20 years to its license, the Vermont Yankee nuclear plant is looking forward to a busy 2006.

"At some point all three of them will be under consideration at the same time," said Nuclear Regulatory Commission spokeswoman Diane Screnci. The NRC only reviews two of the major projects Vermont Yankee has on its plate -the 20 percent power increase and relicensing.

Dry cask storage - the plant's plan to store highly radioactive nuclear waste in concrete and steel casks on its grounds in Vernon -needs only to get approval from the state Public Service Board, which could issue a decision by April. The casks themselves already have a generic license from the NRC.

Jay Thayer, plant owner Entergy Nuclear's site vice president and top executive at its Vermont facility, said in an interview that Vermont Yankee has separate teams working on the power increase, dry cask storage and license extension.

"We really look at them as independent projects," Thayer said. "We don't think the overlap (in timing) really has any effect one way or another."

Screnci said she saw at least one link besides the close timing of the plant's projects. "If they're going to have license renewal, they're going to need a place to

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store spent fuel."

Raymond Shadis, technical adviser with the New England Coalition, a nuclear watchdog group, maintained in an interview that the power boost is closely related to dry cask storage as well.

"If you have to go to such extreme lengths to store it (radioactive waste), how do you justify making 20 percent more of it per year?" Shadis asked.

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Vermont Yankee, located just across the Connecticut River from Hinsdale, N.H., will run out of room in its spent fuel pool to store waste by 2008 and will have to shut down if it can't expand waste storage, Thayer said.

Vermont Yankee had hoped by now to have approval for its proposed 20 percent power increase in hand by last January; it just cleared a key regulatory hurdle earlier this month and is expected to get final approval from the NRC in February.

The plan for an "uprate," as such a power increase is known in nuclear industry and regulatory circles, has run into tough scrutiny from nuclear watchdog groups. And the state Department of Public Service has questioned whether, after the uprate, enough cold water could be pumped into the reactor in an accident to cool it or if steam bubbles might form that could interfere with that.

Before Vermont Yankee expects final approval for the power increase, it will formally apply to the NRC for permission to add 20 years to its license, which currently is set to expire in 2012, when the reactor hits 40 years old.

Thayer said a team from Vermont Yankee and Entergy had been working for two years to prepare the application for the license extension.

The New England Coalition and other groups critical of nuclear power say they are gearing up for a big fight over relicensing. Shadis, who is not a lawyer, represented NEC in recent state and federal hearings on the power boost and state hearings on dry cask storage.

For the relicensing fight, the Coalition has decided to hire a lawyer, as well as technical experts. It recently launched a $350,000 fund-raising

campaign to help in those efforts.

It's a sure bet that NEC and Vermont Yankee will be striving to paint very different pictures of the plant as the regulatory processes go forward.

NEC board member Scott Ainslie called Vermont Yankee "our Katrina. That plant is the only threat to our homes, lives, and businesses that could throw this region into the sort of chaos and destruction we see today on our Gulf Coast and in New Orleans."

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Thayer pointed to the costs of power from the plant - a relative bargain in the New England energy market. Vermont's two largest utilities, Central Vermont Public Service and Green Mountain Power, saved about $60 million from the market price for power during the first 11 months of this year, due to a contract they have to buy power from the Vernon reactor, Thayer said. The savings for all the electric companies around the region that get Vermont Yankee power was a combined $110 million, he said.

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----- End of article

By DAVID GRAM

The Associated Press

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS)

SUBCOMMITTEE ON POWER UPRATES

+ + + + +

WEDNESDAY,

NOVEMBER 30, 2005

+ + + + +

The meeting was convened in Room T-2B3 of Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, at 8:30 a.m.

MEMBERS PRESENT:

RICHARD S. DENNING, Chairman

THOMAS S. KRESS

VICTOR H. RANSOM

JOHN D. SIEBER

GRAHAM B. WALLIS

ACRS STAFF PRESENT:

RALPH CARUSO, ACRS Staff

ACRS CONSULTANTS PRESENT:

GRAHAM M. LEITCH

SANJOY BANERJEE

NRC STAFF PRESENT:

JAMES BONGARRA, NRR

ROBERT DAVIS, NRR

BARRY ELLIOT, NRR

RICK ENNIS, NRR

RAY GALLUCI, NRR

MICHELLE HART, NRR

CORNELIUS HOLDEN, NRR

STEVE JONES, NRR

KRZYSZTOF PARCZEWSKI, NRR

ROGER PEDERSEN, NRR

DEVENDER REDDY, NRR

ENTERGY/GE STAFF PRESENT:

VINCENT ANDERSON

RICO BETTI

MICHAEL DICK

JIM CALLAGHAN

JOHN DREYFUSS

JIM FITZPATRICK

JERRY HEAD

BRIAN HOBBS

PAUL JOHNSON

CRAIG NICHOLS

PEDRO PEREZ

MR. HOPENFELD: My name is Joe Hopenfeld. I'm a consultant to New England Coalition.

I'll be very, very brief because I spoke for half an hour a couple of weeks ago. Let me repeat my concern.

First, very simple. What happens to a damaged dryer that is exposed to DBA loads? I'd like to remind you, and I think it was mentioned here by Entergy, that these plants were designed to withstand DBA. So it's true the computer codes that were used 40 years ago are a little bit different than the computer model that we're using today.

And based on my experience with PWRs, you'll find new things, new loads under DBA condition that you didn't see before. Obviously they have not at that time considered it a dryer that contains certain distribution of cracks of unknown size and unknown location.

That issue should be addressed, and I haven't heard it discussed, only very briefly.

The second issue, and I can go through this very, very quickly, has to do with the iodine spike or iodine releases. We heard this presentation in the afternoon, and I haven't heard anything said about the iodine uncertainty.

There is a generic issue that is unresolved. When you operate with EPU, under EPU conditions, the flow rates are higher. So the concentration of iodine is lower, and if you remember or you can go back to the database and you'll see when the concentration is lower, there's a potential for a much higher iodine spike, and I'm not talking factor of two or three. I'm talking an order of magnitude.

So are we asking ourselves are we meeting the 10 CFR 100 or the 10, what is it, 50.69? That issue hasn't been even touched on, and I think we have to assure ourselves that under the EPU conditions you meet the requirement, the legal requirements.

And what I would like to remind you, that the database on which the iodine spike is based on, it's purely empirical, and it is not -- you cannot extrapolate the directive to the way I understand it was done. It wasn't described in the presentation today, but from reading the SER, I believe that they're just plain extrapolated directly, and I think that issue should be addressed because you cannot assure yourselves that we meet the criteria.

Now, I don't know how far are we for the 5 REM or whatever it is in the control room. The numbers were not presented. They were not in the SER.

So I don't know how far we are, but I've looked at some numbers in other plants, and there was no order of magnitude cushion in there. They were very, very much closed.

So you really have to look at it. It's not an academic issue if you really want to meet the legal requirements. It's not a safety issue, but it's an issue that should be addressed.

The last one has to do with the delta P across the screen, and one thing that bothered me a little bit, we have some experiments at Los Alamos. We have some experiments at VY. We have some experiments at EPRI, and for a person that, you know, is kind of removed from that, it's very difficult to see how all of that matches together.

In addition to this, I keep hearing the word "conservatism." However, the conservatism that you're talking about is based on data which was obtained in '96 by weighing the sludge in the pool. But now what happens to all the sludge that you have during blow-down? What happened to all of the crud and the rust that you get in the drywall that's coming down there?

But more important than that, the SER states that the conductivity of the coolant is

different, and obviously the particle size, particle distribution is going to be affected by the pH.

So it's not really a conservative kind of approach. That's ridiculous, but conservative approach would be to take a one-eighth of an inch fiberglass and put it on the screen and take a spray gun and shoot it with particles. That would be conservative, and then work yourself back.

There's no modeling at all. There's absolutely no understanding how these pieces come together. They just -- they're somewhere there, but you know, there's some insight.

Well, I have absolute zero insight as to how these things go together. So I know you have a lot of flow area, and that's good, but that clearly is not sufficient.

Now, with regard to another comment I made last time, it had to do with flow acceleration and corrosion. I think answers were clear. The gentleman that was sitting here asked the question, and the question was answered with regard to velocity and the fact that you're going to increase the scope of your inspection probably will take care of it, but it is a potential problem because you're running 100 feet or 200 feet per second with some particles in there. So

basically, these are the four issues that I am sort of repeating myself.

CHAIRMAN DENNING: Do we have any questions?

Let me ask one question, and that is with regard to your first concern, which is in additional accident loads, it looked to me like as far as local loads that they really aren't changed very much, and I was wondering whether, you know, it was EPU or whether it's -- that even though the power is up, the blow-down looks awfully similar, and I was just wondering was there a particular accident scenario that was of concern to you that would --

MR. HOPENFELD: Well, I think I just went on a gut feeling that we are talking about increasing power. I know you're going to be choked on one side, but as it was pointed out, you're going to run in for a long period of time.

Really the question is: are you going to excite some new vibrations in that dryer during that different conditions? And you've got to address that. Because if you do, there was a case. I forgot where it was in Florida. I just don't remember the case, where we did have, I think, a valve on the main steam line lifted and excited very, very strong vibrations.

Entergy Nuclear Vermont Yankee, LLC
Entergy Nuclear Operations, Inc.
185 Old Ferry Road
Brattleboro, VT 05302-0500

July 31, 2003
BVY 03-70

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Technical Specification Proposed Change No. 262
Alternative Source Term

Pursuant to 10CFR50.90 and 10CFR50.67, Vermont Yankee[1] (VY) hereby proposes to amend its Facility Operating License, DPR-28, by incorporating a revision to the licensing basis of the Vermont Yankee Nuclear Power Station (VYNPS) that supports a full scope application of an Alternative Source Term (AST) methodology. Associated, proposed Technical Specification (TS) changes, which are supported by the AST analyses, are included in this application for a license amendment. In addition, VY is requesting a specific exemption from 10CFR50.54(o) and the requirements of Sections III.A and III.B of 10CFR50, Appendix J, Option B.

10CFR50.67, "Accident Source Term," provides a mechanism for currently licensed nuclear power reactors to replace the traditional source term used in design basis accident analyses with an alternative source term. Under this provision, licensees who seek to revise the accident source term in design basis radiological consequence analyses must apply for a license amendment under 10CFR50.90.

Full Scope AST analyses were performed by VY in accordance with the guidance in Regulatory Guide 1.183[2], and Section 15.0.1 of the Standard Review Plan[3]. VY performed AST analyses for the four design basis accidents that could potentially result in significant control room and offsite doses. These include the loss of coolant accident, the main steam line break accident, the refueling accident, and the control rod drop accident. The analyses demonstrate that using AST methodologies, post-accident control room and offsite doses remain within regulatory acceptance limits.

VY proposes implementation of this Proposed Change through a change to the VYNPS licensing basis, including the TS and associated Bases. Upon approval, conforming changes will be made to the VYNPS Updated Final Safety Analysis Report (UFSAR) and submitted to the NRC staff in accordance with 10CFR50.71 as part of the regular UFSAR update process.

[1] Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. are the licensees of the Vermont Yankee Nuclear Power Station.
[2] U.S. Nuclear Regulatory Commission, Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000.
[3] U.S. Nuclear Regulatory Commission , NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants – LWR Edition," Section 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," Rev. 0, July 2000.

A001

Proposed changes in the licensing basis for VYNPS resulting from application of the AST include the following:

- Revisions to the primary containment leakage rate testing program, including changes to the TS and a proposed exemption to Sections III.A and III.B of 10CFR50, Appendix J, Option B.
- Revised test criteria for periodic TS surveillances of the secondary containment.
- Credit for use of the standby liquid control (SLC) system to buffer suppression pool pH to prevent iodine re-evolution following a postulated design basis loss-of-coolant accident (LOCA).
- New offsite atmospheric dispersion factors (X/Qs) for ground level releases.
- Revised TS definition of Dose Equivalent Iodine I-131.
- Various references to 10CFR100 in the TS Bases are being changed to 10CFR50.67 to reflect adoption of the Alternative Source Term.

Table 6 of Attachment 1 provides a description of each proposed TS change.

The current operating license allows VYNPS to operate at a maximum steady-state power level of 1593 megawatts thermal (MWt). VY is currently engaged in an Extended Power Uprate (EPU) project to increase the maximum licensed thermal power to 1912 MWt. Therefore, the AST analyses which have been performed consider the core isotopic values at EPU conditions and this application for license amendment is based on a bounding core isotopic inventory. The analyses are also applicable to operation in the maximum extended load line limit (MELLLA) power-flow condition as proposed by VY[4].

The use of an AST results in changes in the design basis accident radiological consequences; however, the AST methodology has no direct impact on the probability or initiation of the evaluated design basis accidents. Application of AST methodology and the other changes requested by this application for a license amendment do not increase the core damage frequency or the large early release frequency. Therefore, this request for a revision to VYNPS's licensing basis is not being submitted as a "risk-informed licensing action" as defined by Regulatory Guide 1.174.[5]

Several domestic boiling water reactors (Duane Arnold, Brunswick Units 1 and 2, Grand Gulf, Hope Creek, Clinton, and Perry) have previously provided justification for the use of AST methodology utilizing a similar approach. These applications of AST methodology have been approved by NRC.

Attachment 1 to this letter contains a description and summary safety assessment of each proposed TS change. Also, included in Attachment 1 is a request for a regulatory exemption that VY requests the NRC staff grant concurrently with the license amendment. Attachment 2 contains the determination of no significant hazards consideration. Attachment 3 provides a mark-up of the current TS and TS Bases pages indicating the proposed changes. Attachment 4 provides the retyped TS and TS Bases pages. Attachment 5 provides the AST Safety Assessment for VYNPS, and Attachment 6 consists of eight calculations that support the Safety Assessment. Three of the calculations are considered proprietary information to Polestar Applied Technology, Inc. The three calculations are clearly marked as proprietary

[4] Vermont Yankee letter to U.S. Nuclear Regulatory Commission, "Technical Specification Proposed Change No. 257, Implementation of ARTS/MELLLA at Vermont Yankee (BVY 03-23)," March 20, 2003.
[5] U.S. Nuclear Regulatory Commission, Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 0, July 1998.

and should be withheld from public disclosure in accordance with 10CFR2.790. Polestar's affidavit for proprietary information is contained within Attachment 6. Also, included in Attachment 6 are non-proprietary versions of the same three calculations.

VY has reviewed the proposed change to the current licensing basis in accordance with 10CFR50.92 and concludes that the proposed change does not involve a significant hazards consideration. VY has also determined that the proposed change satisfies the criteria for a categorical exclusion in accordance with 10CFR51.22(c)(9) and does not require an environmental review. Therefore, pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment needs to be prepared for this change.

VY requests that this application for a license amendment be approved by March 2004 to support activities planned for the next, scheduled refueling outage.

If you have any questions, please contact Mr. Len Gucwa at (802) 258-4225.

Sincerely,

Jay K. Thayer
Site Vice President

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

Then personally appeared before me, Jay K. Thayer, who, being duly sworn, did state that he is Site Vice President of the Vermont Yankee Nuclear Power Station, that he is duly authorized to execute and file the foregoing document, and that the statements therein are true to the best of his knowledge and belief.

Sally A. Sandstrum, Notary Public
My Commission Expires February 10, 2007

NOTARY PUBLIC WINDHAM COUNTY, VERMONT

Attachments

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS
Vermont Department of Public Service (w/o proprietary information)

Docket No. 50-271
BVY 03-70

Attachment 5

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 262

Alternative Source Term

Safety Assessment

VERMONT YANKEE NUCLEAR POWER STATION (VYNPS)

APPLICATION FOR LICENSE AMENDMENT
ALTERNATIVE SOURCE TERM

SAFETY ASSESSMENT

1. INTRODUCTION

1.1 Evaluation Overview and Objective

The objective of this safety assessment is to document implementation of the Alternative Source Term (AST) for VYNPS. The implementation of AST is governed by 10 CFR 50.67, the guidelines of the Standard Review Plan (SRP) Section 15.0.1 (Reference 1), and Regulatory Guide (RG) 1.183 (Reference 2).

VY has elected to perform a full scope implementation of the AST as defined in RG 1.183. The implementation consists of the following:

1. Identification of the core source term based on plant specific analysis of core fission product inventory.
2. Determination of the release fractions for the four Updated Final Safety Analysis Report (UFSAR) Boiling Water Reactor (BWR) Design Basis Accidents (DBAs) that could potentially result in control room and offsite doses. These are the loss of coolant accident (LOCA), the main steam line break accident, the refueling accident, and the control rod drop accident.
3. Calculation of fission product deposition rates and removal efficiencies.
4. Calculation of offsite and control room personnel Total Effective Dose Equivalent (TEDE).
5. Evaluation of suppression pool pH to ensure that the particulate iodine deposited into the suppression pool during a DBA LOCA does not re-evolve and become airborne as elemental iodine.
6. Calculation of new control room and EAB atmospheric dispersion factors (χ/Q) for Reactor Building leakage.
7. Calculation of a new Control Room atmospheric dispersion factors (χ/Q) for a main steam line break accident instantaneous ground level puff release.
8. Evaluation of other related design and licensing bases such as NUREG-0737 (Reference 3).

The radiological dose analyses have been performed assuming reactor operation at the Extended Power Uprate thermal power of 1950 MWt (102% of 1912 MWt). This results in a conservative estimate of fission product releases for operation at current licensed power of 1593 MWt.

STATE OF VERMONT
PUBLIC SERVICE BOARD

Petition of Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc., pursuant to 30 V.S.A. §248, for a Certificate of Public Good to modify certain generation facilities	August 19, 2003 Docket 6812

PREFILED SURREBUTTAL TESTIMONY OF ARNOLD GUNDERSEN ON BEHALF OF NEW ENGLAND COALITION

Summary

Mr. Gundersen responds to Rebuttal Testimony of Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operation, Inc., ("Entergy") witnesses on issues of reliability, feasibility of the proposed power uprate, environmental and radiological impacts and certain externalities such as carbon offset.

Mr. Gundersen also responds to the Direct Testimony of Entergy witnesses Thayer, Yasi, and Dodson where Entergy responses to New England Coalition's First Set of Information Requests (April 23, 2003) were provided following both the Technical Hearings (June 16, 17, and 19, 2003) and the filing of Entergy rebuttal testimony on July 2, 2003.

Mr. Gundersen is prevented from responding in full by Entergy's continuing refusal, in apparent defiance of the Vermont Public Service Board ("Board") Orders of June 13, 2003 and July 10, 2003, to provide timely and complete answers to New England Coalition's First Set of Information Requests.

Fortunately VY is a base load plant, and the pressurization cycles for the condenser will not likely exceed 200 cycles through the end of license." When this report was written, this may have been true, but the 120% upgrade introduces fatigue cycles, which the author had not anticipated.

Despite all these indications that the system is marginal even at VY's current power level, VY has chosen not to improve the system in any way. Specifically, in Jay Thayer's Prefiled Rebuttal Testimony, dated July 2, 2003, page 2, Mr. Thayer states that "...plant modifications that are necessary to achieve the power upgrade have been firmly established for months." And in attachment EN-JKT-10 to the same testimony entitled Vermont Yankee Power Upgrade Project Description, a list of components Entergy is planning to replace or modify is provided. There are no listings for the condenser tube sheet. Based on this description, VY has no intention of making any improvements to the condenser tube sheet.

Q 5 Are there additional examples of a components likely to have an adverse effect on reliability under extended power uprate conditions that you would like to bring to the Board's attention?

Response: There are many examples of components at Vermont Yankee that are showing signs of age and wear; all of which result in reduced safety margins and reduced reliability. Reactor components are embrittled, the reactor vessel pressure head has indications of surface cracking, and the reactor core shroud has cracked and is held together with improvised fixtures.

The progress of these phenomena under normal conditions that is, original license power or even minor uprate conditions, can largely be anticipated from the experience of

other reactors. I would like to point out however that the program for extended power uprates is very new with only eight reactors uprated 17 percent or more and just three reactors having received 20 percent uprates; all during 2002. The record so far is not good. The Quad Cities- Unit 2 nuclear reactor, uprated by 17.8 percent in 2001, had a major steam dryer failure in June 2002.

As early as 9/26/02, VY was aware that increasing the reactor flow would cause problems with the Steam Dryer. Rather than completely analyze the problem, in an unsigned, undated, untitled document provided by Entergy in discovery, reviewer Brian Hobbs was told " . . . add a statement justifying why expansion of the operating domain will not result in dryer component failures." (The only available reference to the identity of this document provided by Entergy is 128/t0305, but I do not know what that means.)

I testified before the Board on June 19, and was unaware that the same dryer had failed a second time on June 11, 2003. In my oral testimony, I related problems that I had encountered on early BWR's wherein we had thought we had solved the problem, only to have it erupt again within a year. This is exactly what happened at Quad Cities, and what ENVY had denied could happen at Vermont Yankee. In fact, the second failure now appears to be much worse than originally reported.

According to NRC Information Notice 2002-26, supplement 1, dated July 21, 2003, "Inspection of the dryer revealed (10 through wall cracks (about 90 inches long) in the vertical and horizontal portions of the blank hood, 90 degree side, (2) one vertical and two diagonal braces detached...(3) one severed internal brace... and (4) three cracked tie bars. ...The licensee believes that the most probable cause of the failure is low

frequency, high cycle fatigue driven by flow induced vibrations associated with higher steam flows present during EPU operating conditions."

The Board is urged to remember that in 2002, Quad Cities told the NRC that the repairs would successful solve the first failure. In the "Preliminary OE Report", OE16403, the NRC states that after the first failure, "Several teams of Excelon Nuclear, General Electric and industry experts are assembled to …determine the …corrective actions."

Despite this expert review, the dryer failed again and the failure was much worse, less than a year later. The key statement from the latest NRC information notice is exactly what I had been trying to tell the Board in my oral testimony. "GE Nuclear Energy and the licensee did not foresee this phenomenon." As Shakespeare would say, "There are more things in heaven and earth, Horatio, then are dreamt of in your philosophy." When you push an old plant beyond what it was designed to perform, there will always be situations where Entergy "…did not foresee this phenomenon."

ENVY Expert Witness Burns (reliability expert) provides an exhibit highlighting the significance of the two events at Quad Cities. It is an Inside NRC trade publication article from June 30, 2003 that states, "…fatigue relating to the age of the plant may have contributed to the crack." By providing this exhibit, Mr. Burns apparently supports the point I made in my oral testimony, when I stated that plants built when Lawrence Welk was on TV were more likely to experience failures.

Despite all indications that the steam dryer is marginal even at VY's current power level, Entergy has chosen not to improve the system in any major way. Specifically, in Jay Thayer's Prefiled Rebuttal Testimony, dated July 2, 2003, attachment

EN-JKT-10 is entitled Vermont Yankee Power Upgrade Project Description. Based on this description, VY has no intention of making any improvements to the steam dryer system in response to the second Quad Cities event. In response to the first Quad Cities event, Entergy had committed only to provide a heavier top plate and round over the plate's edges in hopes of avoiding eddy currents. Thus Entergy's approach to design analysis remains reactive and may well lead to Entergy conducting post-analysis on its own version of steam dryer or other component failure.

VY already has cracks in its steam dryer and surrounding area.

The number 215 Dryer support bracket has had cracks since 1983 according to a Report of In-Vessel Examination, dated March-April 1995).

In 1999 a report titled, Vermont Yankee RFO 21, identified three new cracks in three of the Steam Dryer Jacking Bolts (144,215, and 324). (Despite our discovery request, ENVY failed to provide section 2.4 of this report, which discusses the magnitude of these cracks.

In the 2002 RFO 23 In-vessel Services Final Report, new debris was located on the 180 degree end of the Dryer Cover Plate. Despite our discovery request, ENVY failed to provide tab 9 of this report, which discusses the magnitude of this debris.

Because ENVY failed to provide key pieces of information, I am forced to conclude that the trend is that failures in this area are continuing to grow.

Q 6 Is there any single, common extended power uprate phenomenon that appears in the three examples that you cited above, feedwater piping, condensers, and steam dryer?

GE Nuclear Energy
175 Curtner Ave., San Jose, CA 95125

NEDO-33090
Revision 0
Class III
0000-0007-5271
September 2003

SAFETY ANALYSIS REPORT

FOR

VERMONT YANKEE NUCLEAR POWER STATION

CONSTANT PRESSURE POWER UPRATE

Prepared by: E. D. Schrull

Approved by: _____
Michael J. Dick, Project Manager
General Electric Company

Approved by: _____
Craig J. Nichols, Project Manager
Entergy Nuclear Operations, Inc.

The primary function of the Gaseous Waste Management (Offgas) System is to process and control the release of gaseous radioactive effluents to the site environs so that the total radiation exposure of persons in offsite areas is within the guideline values of 10 CFR 50, Appendix I.

The radiological release rate is administratively controlled to remain within existing site release rate limits, and is a function of fuel cladding performance, main condenser air inleakage, charcoal adsorber inlet dew point, and charcoal adsorber temperature. [[

]] Thus, the recombiner and condenser, as well as downstream system components, are designed to handle an average increase in thermal power of as much as 70% relative to CLTP, without exceeding the design basis temperatures, flow rates, or heat loads. Therefore, the gaseous radwaste system at VYNPS is confirmed to be consistent with GE design specifications for radiolytic flow rate [[

]]

8.3 RADIATION SOURCES IN THE REACTOR CORE

During power operation, the radiation sources in the core are directly related to the fission rate. These sources include radiation from the fission process, accumulated fission products and neutron reactions as a secondary result of fission. Historically, these sources have been defined in terms of energy or activity released per unit of reactor power. Therefore, for a CPPU, the percent increase in the operating source terms is no greater than the percent increase in power. The topic addressed in this evaluation is:

Topic	CPPU Disposition	VYNPS Result
Post operational radiation sources for radiological and shielding analysis	[[	]]

The post-operation radiation sources in the core are primarily the result of accumulated fission products. Two separate forms of post-operation source data are normally applied. The first of these is the core gamma-ray source, which is used in shielding calculations for the core and for individual fuel bundles. This source term is defined in terms of MeV/sec per Watt of reactor thermal power (or equivalent) at various times after shutdown. The total gamma energy source, therefore, increases in proportion to reactor power.

The second set of post-operation source data consists primarily of nuclide activity inventories for fission products in the fuel. These data are needed for post-accident and SFP evaluations, which are performed in compliance with regulatory guidance that applies different release and transport assumptions to different fission products. The core fission product inventories for these evaluations are based on an assumed fuel irradiation time, which develops "equilibrium" activities in the fuel (typically 3 years). Most radiologically significant fission products reach equilibrium within a 60-day period. [[

]] The radionuclide inventories are provided in terms of Curies per megawatt of reactor thermal power at various times after shutdown.

The VYNPS specific parameters are enveloped by the bounding parameters of the radiation sources in the reactor core generic description provided in the CLTR. The results of the VYNPS plant-specific radiation sources evaluation are included in the LOCA, FHA, and CRDA radiological analyses presented in Section 9.2. A plant-specific analysis for NUREG-0737, Item II.B.2, post-accident mission doses was performed in which the evaluated mission doses for VYNPS are demonstrated to be less than 5 rem TEDE. Details of the analysis are contained in the AST submittal (Reference 27), which describes the full implementation of the AST methodology at CPPU conditions.

8.4 RADIATION SOURCES IN REACTOR COOLANT

Radiation sources in the reactor coolant at VYNPS include activation products and activated corrosion and fission products. The topics addressed in this evaluation are:

Topic	CPPU Disposition	VYNPS Result
8.4.1 Coolant Activation Products	[[	
8.4.2 Activated Corrosion and Fission Products		]]

8.4.1 Coolant Activation Products

During reactor operation, the coolant passing through the core region becomes radioactive as a result of nuclear reactions. The coolant activation, especially N-16 activity, is the dominant source in the turbine building and in the lower regions of the drywell. The activation of the water in the core region is in approximate proportion to the increase in thermal power. [[

]]

8.4.2 Activated Corrosion Products and Fission Products

The reactor coolant contains activated corrosion products, which are the result of metallic materials entering the water and being activated in the reactor region. Under the CPPU conditions, the feedwater flow increases with power and the activation rate in the reactor region increases with power. The net result is an increase in the activated corrosion product production.

Fission products in the reactor coolant are separable into the products in the steam and the products in the reactor water. The activity in the steam consists of noble gases released from the core plus carryover activity from the reactor water. This activity is the noble gas offgas that is included in the plant design. The calculated offgas rates for CPPU after thirty minutes decay are well below the original design basis of 0.03 curies/sec. Therefore, no change is required in the design basis for offgas activity for the CPPU.

The fission product activity in the reactor water, like the activity in the steam, is the result of minute releases from the fuel rods. Fission product activity levels in the reactor water at design carry over rates were calculated to be less than the design basis, therefore requiring no change.

8.5 RADIATION LEVELS

For CPPU at VYNPS, normal operation radiation levels increase by approximately the percentage increase in power level. Some areas reflect an additional small increase due to accelerated steam flow. For conservatism, many aspects of the plant were originally designed for higher-than-expected radiation sources. Thus, the increase in radiation levels does not affect radiation zoning or shielding in the various areas of the plant because it is offset by conservatism in the original design, source terms used, and analytical techniques. The topics addressed in this evaluation are:

Topic	CPPU Disposition	VYNPS Result
Normal operational radiation levels	[[	
Post-operation radiation levels		
Post-accident radiation levels		]]

The normal operating radiation levels specified for VYNPS are generally based on dose rate measurements at various locations during plant operation at CLTP conditions. The normal operating radiation levels specified for CLTP conditions were evaluated to increase in proportion to the increase in thermal power. The increased normal radiation levels were evaluated and determined to have no adverse effect on safety-related plant equipment as indicated in Sections 10.3.1 and 10.3.2. Individual worker exposures can be maintained within acceptable limits by controlling access to radiation areas in conjunction with procedural controls and the site ALARA (As Low as Reasonably Achievable) program. In addition, VYNPS has previously implemented noble metal chemical addition to limit the increase in normal radiation doses from the implementation of hydrogen water chemistry.

[[

]] Regardless, individual worker exposures can be maintained within acceptable limits by controlling access to radiation areas using the site ALARA program. Procedural controls compensate for increased radiation levels. Radiation measurements will be made at selected power levels to ensure the protection of personnel.

Post-accident radiation levels were evaluated for radiological consequences using the RG 1.183 AST methodology, as part of the VYNPS plant-specific accident analyses presented in Section 9.2. Accident radiation levels at CLTP were evaluated using the TID source term methodology. Post-accident radiation levels remain below established regulatory limits for CPPU conditions. Details of the accident radiological analysis are contained in a separate VYNPS LAR (Reference 27) describing full implementation of the AST methodology at CPPU conditions. The increased post-accident radiation doses have no adverse effect on safety-related plant equipment as indicated in Sections 10.3.1 and 10.3.2. A plant-specific analysis for NUREG-0737, Item II.B.2, post-accident mission doses has been performed, the details of which are provided in the AST LAR (Reference 27).

Section 9.2 addresses the accident doses for the Control Room.

8.6 NORMAL OPERATION OFF-SITE DOSES

The primary sources of normal operation offsite doses at VYNPS are airborne releases from the Offgas System and gamma shine from the plant turbines. The topics addressed are:

Topic	CPPU Disposition	VYNPS Result
Plant gaseous emissions	[[	
Plant skyshine from the turbine		]]

The increase in normal operation activity levels in the reactor coolant is proportional to the percentage increase in core thermal power, i.e., 20%. Noble gas levels in the steam phase are expected to be approximately the same as pre-CPPU conditions because the increase in steaming rate is approximately the same as the production rate due to CPPU. Noble gas release through the off-gas system and release of tritium is conservatively estimated to increase proportionally to the CPPU. Steam activity levels for species related to carryover (halogens & particulates) and volatile halogens will increase proportionally to changes in reactor coolant and the moisture carryover fraction. Examination of the normal operation radiological effluent doses reported for the last five years (1997-2001) indicates that the estimated doses due to the pre-CPPU gaseous releases (~1 mrem) are a very small fraction of the 10CFR 50 Appendix I guidelines; and that there were no radiological liquid effluents discharged during this time period. While the normal operation releases and doses are expected to increase due to CPPU, the dose effect remains well within the limits of 10 CFR 20, 10 CFR 50, Appendix I, and 40 CFR 190.

there is no increase in highest flow control line for the VYNPS CPPU. [[

]]

9.2 DESIGN BASIS ACCIDENTS

This section addresses the radiological consequences of DBAs for VYNPS. The topics addressed in this evaluation are:

Topic	CPPU Disposition	VYNPS Result
Main Steam Line Break Outside Containment	[[	
Instrument Line Break		
LOCA Inside Containment		
Fuel Handling Accident		
Control Rod Drop Accident		]]

The magnitude of radiological consequences of a DBA is proportional to the quantity of radioactivity released to the environment. This quantity is a function of the fission products released from the core as well as the transport mechanism between the core and the release point.

VYNPS has submitted an LAR (Reference 27) describing full implementation of the AST methodology, at CPPU conditions, that complies with Regulatory Guide 1.183. This methodology has been used in the evaluation of DBA radiological consequences.

The Main Steam Line Break Accident (MSLBA) analysis for VYNPS is based on hot standby conditions and [[

]] Therefore, the resulting radiological consequences remain within applicable regulatory criteria for the MSLBA at CPPU conditions.

The Instrument Line Break (ILB) is not considered a DBA for VYNPS.

For the LOCA inside Containment, FHA, and CRDA, the whole body and thyroid doses were calculated at the exclusion area boundary, Low Population Zone (LPZ), and in the Control Room. The doses resulting from the accidents analyzed are compared with the applicable dose limits in Tables 9-1 through 9-3, for both the CPPU and pre-CPPU RTP levels. The effect of extended burnup on the FHA was not evaluated, per RG 1.183, based on CPPU core average bundle power of 5.3 MWt and peak exposure of 58 GWD/MT. The [[ ]] results for the CPPU remain below established regulatory limits.

OFFICE OF NUCLEAR REACTOR REGULATION

REVIEW STANDARD FOR EXTENDED POWER UPRATES

APPROVED BY: */RA/*
L. Marsh, Director
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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RS-001, Revision 0
DECEMBER 2003

Areas of Review	Applicable to	Primary Review Branch	Secondary Review Branch(es)	SRP Section Number	Focus of SRP Usage	Other Guidance	Template Safety Evaluation Section Number		Acceptance Review Checklist
							BWR	PWR	
Radiological Consequences of Reactor Coolant Pump Rotor Seizure and Reactor Coolant Pump Shaft Break	EPUs that do not utilize alternative source term whose reactor coolant pump rotor seizure or reactor coolant pump shaft break results in fuel failure	SPSB	SRXB	15.3.3-4 Draft Rev. 3 April 1996	10 CFR Part 100	Notes 5, 8, 9, 27*		2.9.3	
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			
Radiological Consequences of a Control Rod Ejection Accident	PWR EPUs that do not utilize alternative source term whose rod ejection accident results in fuel failure or melting	SPSB	SRXB	15.4.8, App. A Draft Rev. 2 April 1996	10 CFR Part 100	Notes 4, 21, 22, 27*		2.9.4	
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			
Radiological Consequences of Control Rod Drop Accident	BWR EPUs that do not utilize alternative source term whose control rod drop accident results in fuel failure or melting	SPSB	SRXB	15.4.9, App. A Draft Rev. 3 April 1996	10 CFR Part 100	Notes 9, 10, 27*	2.9.2		
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			
Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment	EPUs that do not utilize alternative source term whose failure of small lines carrying primary coolant outside containment result in fuel failure	SPSB		15.6.2 Draft Rev. 3 April 1996	GDC-55 10 CFR Part 100		2.9.3	2.9.5	
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			

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January 31, 2004
BVY 04-009

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Technical Specification Proposed Change No. 263 – Supplement No. 4
Extended Power Uprate – NRC Acceptance Review

By letter dated September 10, 2003[1], Vermont Yankee[2] (VY) proposed to amend Facility Operating License, DPR-28, for the Vermont Yankee Nuclear Power Station (VYNPS) to increase the maximum authorized power level from 1593 megawatts thermal (MWt) to 1912 MWt. The request for license amendment was prepared in accordance with the guidelines contained in the NRC-approved, licensing topical report NEDC-33004P-A[3] (referred to as the CLTR). Included with the license amendment request was NEDC-33090P[4] (referred to as the PUSAR), a summary of the results of the safety analyses and evaluations performed specifically for the VYNPS power uprate. Subsequent to the initial application, VY provided a supplement dated October 1, 2003 and two supplements dated October 28, 2003.

NRC's letter dated December 15, 2003[5], provided a status of the NRC staff's acceptance review of the extended power uprate (EPU) application for VYNPS and identified areas where additional details are needed. The attachments to this letter provide the additional information requested by the NRC to consider the application for extended power uprate acceptable.

Attachment 1 to this letter provides additional information describing how items stated in the VYNPS PUSAR were dispositioned based on the CLTR or will be dispositioned as part of the cycle-specific reload evaluation. In addition, information is provided as to the method used by VY to review and provide oversight of engineering products of GE Nuclear Energy (GENE). The information provided in Attachment 1 directly corresponds to those areas identified in paragraphs 1.a, 1.b, and 1.c of NRC's December 15, 2003 letter. The response to Item 1.a references a summary confirmation of PUSAR topics that is provided as Attachment 2 to this letter. Because the information provided in Attachment 2 is

[1] Vermont Yankee letter to U.S. Nuclear Regulatory Commission, "Extended Power Uprate," Proposed Change No. 263, BVY 03-80, September 10, 2003.
[2] Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. are the licensees of the Vermont Yankee Nuclear Power Station.
[3] GE Nuclear Energy, "Constant Pressure Power Uprate," Licensing Topical Report NEDC-33004P-A (Proprietary), July 2003, and NEDO-33004-A (Non-Proprietary), July 2003.
[4] GE Nuclear Energy, "Safety Analysis Report for Vermont Yankee Nuclear Power Station Constant Pressure Power Uprate," NEDC-33090P, September 2003.
[5] U.S. Nuclear Regulatory Commission letter to Entergy Nuclear Operations, Inc., "Vermont Yankee Nuclear Power Station – Extended Power Uprate Acceptance Review (TAC No. MC0761)," December 15, 2003.

APO1

EXHIBIT 8

deemed to contain proprietary information as defined by 10CFR2.790, that attachment has been designated in its entirety as proprietary information. The specific proprietary information is identified by double underline within double brackets. Attachment 3 to this letter is a non-proprietary version of Attachment 2 with the proprietary information removed.

Attachment 4 to this letter provides a revision to the template safety evaluation in NRC review standard RS-001[6] substituting the plant-specific design criteria and draft General Design Criteria of 10CFR50, Appendix A that constitute VYNPS' licensing basis. The revision will maintain consistency within VYNPS' licensing basis. Changes to the template are identified by change bars in the left-hand margins.

Attachment 5 to this letter is an update to the review matrix that cross-references the criteria of NRC review standard RS-001 for extended power uprates with the information in the VYNPS PUSAR and the NRC-approved CLTR for constant pressure power uprate. "VY Notes" have been added to the matrices to provide additional guidance to direct reviewers to the specific safety analyses and conclusions. Certain information in Matrix 8 is deemed to contain proprietary information as defined by 10CFR2.790. For that reason Attachment 5 has been designated in its entirety as proprietary information. The specific proprietary information is identified by double underline within double brackets. Attachment 6 to this letter is a non-proprietary version of Attachment 5 with the proprietary information removed.

Attachment 7 to this letter addresses steam dryer integrity issues. VY recognizes the importance of these issues and is planning to implement modifications to the dryer during the next refueling outage as described in the attachment. Based on discussions with NRC staff, VY understands that adequately addressing the scope of dryer issues and specific actions identified in GE SIL 644, Rev. 1 will provide sufficient information for the NRC staff to complete its acceptance review in this matter. VY will be responsive to additional information requests throughout the review process. Certain information in Attachment 7 is deemed to contain proprietary information as defined by 10CFR2.790. For that reason Attachment 7 has been designated in its entirety as proprietary information. The specific proprietary information is identified by double underline within double brackets. Attachment 8 to this letter is a non-proprietary version of Attachment 7 with the proprietary information removed.

General Electric Company, as the owner of the proprietary information in Attachments 2, 5, and 7 has executed three affidavits (provided as Attachment 9 to this letter). The enclosed proprietary information has been handled and classified as proprietary, is customarily held in confidence, and has been withheld from public disclosure. The proprietary information was provided to VY in GENE transmittals that are referenced in the affidavits. The proprietary information has been faithfully reproduced in attachments to this letter, such that the affidavits remain applicable. GENE requests that the enclosed proprietary information be withheld from public disclosure in accordance with the provisions of 10CFR2.790 and 9.17.

This supplement to the license amendment request does not change the scope or conclusions in the original application, nor does it change VY's determination of no significant hazards consideration.

If you have any questions, please contact Mr. James DeVincentis at (802) 258-4236.

---

[6] U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, "Review Standard for Extended Power Uprates," (RS-001) Revision 0, December 2003.

Sincerely,

Jay K. Thayer
Site Vice President

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

Then personally appeared before me, Jay K. Thayer, who, being duly sworn, did state that he is Site Vice President of the Vermont Yankee Nuclear Power Station, that he is duly authorized to execute and file the foregoing document, and that the statements therein are true to the best of his knowledge and belief.

SALLY A. SANDSTRUM NOTARY WINDHAM COUNTY, VERMONT

Sally A. Sandstrum, Notary Public
My Commission Expires February 10, 2007

Attachments (9)

cc: USNRC Region 1 Administrator (w/o attachments)
USNRC Resident Inspector – VYNPS (w/o attachments)
USNRC Project Manager – VYNPS (two copies/with attachments)
Vermont Department of Public Service (with non-proprietary attachments)

Docket No. 50-271
BVY 04-009

Attachment 4

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 263

Supplement No. 4

Extended Power Uprate – NRC Acceptance Review

Revised Safety Evaluation Template for GDC

SECTION 3.2 of RS-001

TEMPLATE SAFETY EVALUATION

for

BOILING-WATER REACTOR EXTENDED POWER UPRATE

2.9.3 Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment

[This section is not applicable because the Vermont Yankee Nuclear Power Station is implementing an alternative source term.]

Docket No. 50-271
BVY 04-009

Attachment 6

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 263

Supplement No. 4

Extended Power Uprate – NRC Acceptance Review

Review Matrix

NON-PROPRIETARY VERSION

INSERT 9

FOR

SECTION 3.2 - BWR TEMPLATE SAFETY EVALUATION

NON-PROPRIETARY INFORMATION

MATRIX 9

SCOPE AND ASSOCIATED TECHNICAL REVIEW GUIDANCE

Source Terms and Radiological Consequences Analyses

Areas of Review	Applicable to	Primary Review Branch	Secondary Review Branch(es)	SRP Section Number	Focus of SRP Usage	Other Guidance	Template Safety Evaluation Section Number		Cross – Reference to CPPU SAR/CPPU LTR
							BWR	PWR	
Source Terms for Input into Radwaste Management Systems Analyses	All EPUs	SPSB		11.1 Draft Rev. 3 April 1996	10 CFR Part 20 10 CFR Part 50, App. I GDC-60		2.9.1	2.9.1	8.4
Radiological Consequence Analyses Using Alternative Source Terms	EPUs that utilize alternative source term	SPSB	EEIB EMCB EMEB IEPB SPLB SRXB	15.0.1 Rev. 0 July 2000	10 CFR 50.67 GDC-19 10 CFR 50.49 10 CFR Part 51 10 CFR Part 50, App. E NUREG-0737		2.9.2	2.9.2	9.2 VY NOTE
Radiological Consequences of Main Steamline Failures Outside Containment for a PWR	PWR EPUs that do not utilize alternative source term whose main steamline break analyses result in fuel failure	SPSB	SRXB	15.1.5, App. A Draft Rev. 3 April 1996	10 CFR Part 100	Notes 4, 5, 6, 7, 27*		2.9.2	N/A for BWR's
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			

Areas of Review	Applicable to	Primary Review Branch	Secondary Review Branch(es)	SRP Section Number	Focus of SRP Usage	Other Guidance	Template Safety Evaluation Section Number		Cross – Reference to CPPU SAR/CPPU LTR
							BWR	PWR	
Radiological Consequences of Reactor Coolant Pump Rotor Seizure and Reactor Coolant Pump Shaft Break	EPUs that do not utilize alternative source term whose reactor coolant pump rotor seizure or reactor coolant pump shaft break results in fuel failure	SPSB	SRXB	15.3.3-4 Draft Rev. 3 April 1996	10 CFR Part 100	Notes 5, 8, 9, 27*	[redacted]	2.9.3	N/A for BWR's
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			
Radiological Consequences of a Control Rod Ejection Accident	PWR EPUs that do not utilize alternative source term whose rod ejection accident results in fuel failure or melting	SPSB	SRXB	15.4.8, App. A Draft Rev. 2 April 1996	10 CFR Part 100	Notes 4, 21, 22, 27*	[redacted]	2.9.4	N/A for BWR's
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			
Radiological Consequences of Control Rod Drop Accident	BWR EPUs that do not utilize alternative source term whose control rod drop accident results in fuel failure or melting	SPSB	SRXB	15.4.9, App. A Draft Rev. 3 April 1996	10 CFR Part 100	Notes 9, 10, 27*	2.9.2	[redacted]	9.2 VY NOTE
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			
Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment	EPUs that do not utilize alternative source term whose failure of small lines carrying primary coolant outside containment result in fuel failure	SPSB	[redacted]	15.6.2 Draft Rev. 3 April 1996	GDC-55 10 CFR Part 100	[redacted]	2.9.3	2.9.5	9.2 VY NOTE
				6.4 Draft Rev. 3 April 1996	GDC-19	Notes 1, 2, 3, 28, 29*			

VERMONT YANKEE NOTES – MATRIX 9

SE 2.9.2 VY NOTE, Radiological Consequence Analyses Using Alternative Source Terms: RS-001 Section 2.9.2 specifies review criteria for licensees implementing an Alternative Source Term for the first time. VYNPS previously submitted an Alternative Source Term license amendment request, which addresses these review criteria.

SE 2.9.2 VY NOTE, Radiological Consequences of Control Rod Drop Accident: RS-001 Matrix 9 states that this review criterion is applicable to EPU's that do not utilize alternative source term. VYNPS previously submitted an Alternative Source Term license amendment request.

SE 2.9.3 VY NOTE, Radiological Consequences of the Failure of Small Lines Carrying Primary Coolant Outside Containment: RS-001 Matrix 9 states that this review criterion is applicable to EPU's that do not utilize alternative source term. VYNPS previously submitted an Alternative Source Term license amendment request.

SE 2.9.4 VY NOTE, Radiological Consequences of Main Steamline Failure Outside Containment for a BWR: RS-001 Matrix 9 states that this review criterion is applicable to EPU's that do not utilize alternative source term. VYNPS previously submitted an Alternative Source Term license amendment request.

SE 2.9.5 VY NOTE, Radiological Consequences of a Design Basis Loss-Of-Coolant Accident Including Containment Leakage Contribution: RS-001 Matrix 9 states that this review criterion is applicable to EPU's that do not utilize alternative source term. VYNPS previously submitted an Alternative Source Term license amendment request.

SE 2.9.5 VY NOTE, Radiological Consequences of a Design Basis Loss-Of-Coolant Accident: Leakage from ESF Components Outside Containment: RS-001 Matrix 9 states that this review criterion is applicable to EPU's that do not utilize alternative source term. VYNPS previously submitted an Alternative Source Term license amendment request.

SE 2.9.5 VY NOTE, Radiological Consequences of a Design Basis Loss-Of-Coolant Accident: Leakage from Main Steam Isolation Valves: RS-001 Matrix 9 states that this review criterion is applicable to EPU's that do not utilize alternative source term. VYNPS previously submitted an Alternative Source Term license amendment request.

SE 2.9.6 VY NOTE, Radiological Consequences of Fuel Handling Accidents: RS-001 Matrix 9 states that this review criterion is applicable to EPU's that do not utilize alternative source term. VYNPS previously submitted an Alternative Source Term license amendment request.