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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF THE  
GENERAL COUNSEL  
ADJUDICATION

In the Matter of: )

Northeast Nuclear Energy Company )

Docket No. 50-423-LA-3

(Millstone Nuclear Power Station, )  
Unit No. 3) )

NORTHEAST NUCLEAR ENERGY COMPANY'S  
ANSWER TO SUPPLEMENTAL PETITION TO INTERVENE

I. INTRODUCTION

In accordance with the Order of the Atomic Safety and Licensing Board ("Licensing Board") issued on October 28, 1999, Northeast Nuclear Energy Company ("NNECO") hereby files its answer to the supplemental intervention petition ("Supplemental Petition") filed on November 17, 1999, by the Connecticut Coalition Against Millstone ("CCAM") and the Long Island Coalition Against Millstone ("CAM") (hereinafter, "Petitioners" refers to CCAM and CAM). NNECO's answer addresses the standing of Petitioners to intervene in this proceeding and the admissibility of Petitioners' contentions proposed for litigation.

The Supplemental Petition attempts to address deficiencies in Petitioners' initial petition of October 6, 1998, and proposes 11 contentions.<sup>1</sup> The contentions relate to NNECO's license amendment request ("Application") associated with the proposed re-racking of the Millstone Unit 3 spent fuel storage pool ("SFSP"). As discussed below, the Petitioners have not

<sup>1</sup> Petitioners' original petition, dated October 6, 1999, responded to the Notice of Opportunity for Hearing published in the *Federal Register* on September 7, 1999 (64 Fed. Reg. 48672) ("Notice").

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proposed any admissible contentions. Under 10 C.F.R. § 2.714, the petition to intervene should be rejected and this proceeding terminated. Furthermore, in the event the Licensing Board finds at least one admissible contention, CAM has not satisfied the Commission's requirements for standing. Therefore, CAM's request to intervene should be denied.

## II. BACKGROUND

### A. NNECO's Proposed Amendment

As discussed in NNECO's October 21, 1999, response to Petitioners' initial petition, the Application at issue was submitted to the NRC on March 19, 1999, and concerns a proposed re-racking of the Millstone Unit 3 SFSP. The Unit 3 SFSP currently utilizes high-density storage racks with a capacity of 756 fuel assemblies. Following the discharge of spent fuel assemblies into the SFSP during the next refueling outage, currently scheduled for the first quarter of 2001, Unit 3 will no longer have the capability to perform a full core off-load.<sup>2</sup> NNECO proposes additional high-density fuel storage racks, which, if all installed, would increase the SFSP capacity to 1,860 assemblies (an increase of 1,104). The proposed amendment would also change several Technical Specifications ("TS") and TS Bases to support the installation of the new fuel storage racks and to specify administrative controls related to storage of spent fuel in the new and existing racks.

More specifically, the Unit 3 SFSP currently contains 21 high-density spent fuel racks. The current racks are configured in a two-region approach. One region is utilized for

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<sup>2</sup> The Millstone Unit 3 SFSP currently contains 497 spent fuel assemblies; a full core contains 193 fuel assemblies. Therefore, assuming 84 spent fuel assemblies are discharged during the next refueling outage (i.e., 84 spent fuel assemblies will remain in the SFSP following completion of the refueling), full core off-load capability would be lost for the following operating cycle. The Notice and "Environmental Assessment and Finding of No Significant Impact," 64 Fed. Reg. 48675 (1999), incorrectly state that Unit 3 lost the capability for full core off-load following the last refueling outage, which ended in June 1999.

storage of spent fuel in a 3-out-of-4 arrangement; the other utilizes a 4-out-of-4 configuration. Boraflex<sup>3</sup> is credited as a "poison" (i.e., a neutron absorber) for criticality purposes.

NNECO proposes to leave in place all existing racks and immediately add 14 high-density racks with a capacity of 1,023 assemblies. A 15th high-density rack, with a capacity of 81 assemblies, is analyzed as part of the Application safety evaluation, but may not be immediately installed. The new racks would be divided into two regions. In Region 1, fuel would be stored in either a 3-out-of-4 array or a 4-out-of-4 arrangement, depending upon enrichment and burnup considerations. Region 2 would be utilized for 4-out-of-4 storage, with more restrictive burnup/enrichment limitations than Region 1. For criticality purposes, the new racks in both Regions 1 and 2 will utilize Boral<sup>4</sup> panels. Under NNECO's proposal, the existing storage racks would be re-designated as Region 3. Fuel would be stored in Region 3 in a 4-out-of-4 array, subject to restrictive burnup/enrichment/decay limits. The Boraflex presently employed would no longer need to be credited as a neutron absorber.

B. The Proceeding to Date

On October 6, 1999, CCAM and CAM filed their original request for hearing/petition for leave to intervene. On October 19, 1999, the Licensing Board was established to preside over the proceeding. On October 21, 1999, NNECO filed its answer to Petitioners' request for hearing/petition to intervene, and opposed the Petition for lacking an

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<sup>3</sup> Boraflex is a neutron absorbing material used in the existing Unit 3 SFSP racks and at many other nuclear plants. In 1987, the NRC released the first of several generic communications related to the gamma radiation-induced degradation of Boraflex. See Generic Letter 96-04, "Boraflex Degradation in Spent Fuel Pool Storage Racks" (June 26, 1996). In its response to Generic Letter 96-04 and to address potential Boraflex degradation, NNECO imposed a Technical Specification requirement of 1,750 parts per million boron concentration in the SFSP as a redundant neutron absorber.

<sup>4</sup> Instead of Boraflex, the SFSP racks to be added pursuant to the Application use Boral, a neutron absorbing material that is not subject to gamma radiation-induced degradation. See Application, Attachment 4, at 9-1. Boral is in use at more than 50 plants in the United States, and more than 80 worldwide. Application, Attachment 5, at 3-10 to 3-12.

adequate demonstration of standing. On October 26, 1999, the NRC Staff filed its answer to the Petition, and opposed it on the same grounds as did NNECO.

On October 28, 1999, the Licensing Board issued a Memorandum and Order, which concluded that the Petition failed to adequately set forth the standing of the organizations to intervene, failed to identify any individual members by name and address, and failed to show that the organizations were authorized to represent any such members. The Licensing Board allowed the Petitioners until November 17, 1999, to supplement the Petition to establish standing and proffer contentions. The Supplemental Petition is Petitioners' attempt to address the standing deficiencies cited by the Licensing Board and to propose contentions for hearing.

### III. STANDING

Based on the Supplemental Petition, it is clear that both CCAM and CAM seek to demonstrate their standing based upon the standing of their members (that is, "representational standing"). Accordingly, each petitioner must "identify at least one of its members by name and address and demonstrate how that member may be affected ... and show (preferably by affidavit) that the group is authorized to request a hearing on behalf of that member." Northern States Power Co. (Independent Spent Fuel Storage Installation), LBP-96-22, 44 NRC 138, 141 (1996). To derive standing from a member, the organization must demonstrate that the individual member has standing to participate, and has authorized the organization to represent his or her interests. Houston Lighting and Power Co. (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 390-96 (1979).

Based on the Supplemental Petition, it is equally clear that both CCAM and CAM base their standing on no more than the proximity of residence of members to Millstone Unit 3. As discussed in NNECO's answer to the initial Petition, although the NRC has applied a 50-mile proximity presumption for standing to intervene for reactor operating license proceedings, it has

also held that a more stringent proximity standard applies to proceedings involving license amendments with less clear potential for off-site consequences. See, e.g., Boston Edison Co. (Pilgrim Nuclear Power Station), LBP-85-24, 22 NRC 97, 98-99 (1985), aff'd on other grounds, ALAB-816, 22 NRC 461 (1985) (43 mile proximity inadequate for standing because risk is less for a spent fuel pool expansion). Rather than the 50-mile proximity used for reactor licensing proceedings, petitioners in SFSP expansion proceedings must demonstrate "close proximity." Virginia Electric and Power Co. (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979) ("zone of harm" is smaller for SFSP expansion proceeding than a reactor operating license proceeding). In North Anna, the Atomic Safety and Licensing Appeal Board ("Appeal Board") found that petitioners "living little more than a stone's throw from the facility" met the close proximity test. Id.<sup>5</sup>

Attached to the Supplemental Petition are the declarations of Joseph H. Besade and Jacqueline L. Williamson, which attempt to establish representational standing for CCAM and CAM, respectively.<sup>6</sup> Supplemental Petition, Exhibit 3, at 2, 8. Mr. Besade's declaration indicates that he resides within two miles of Millstone Unit 3 and that CCAM is authorized to represent him in this proceeding. Supplemental Petition, Exhibit 3, at 2, 7. In view of the proximity of Mr. Besade's residence to Millstone Unit 3, and the Commission's case law, NNECO does not oppose CCAM's claim of representational standing in this proceeding.

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<sup>5</sup> In several other proceedings involving SFSP issues, the NRC addressed the standing of petitioners who lived or worked within several miles of the facility. See, e.g., General Public Utilities Corp. (Oyster Creek Nuclear Generating Station), LBP-96-23, 44 NRC 143, 157-59 (1996) (petitioner working within one mile of the facility and another petitioner living within one half mile of the facility had established standing); and Florida Power & Light Co. (St. Lucie Nuclear Power Plant, Unit 1), LBP-88-10A, 27 NRC 452, 455 (1988) (parties conceded standing of petitioner who resided within 10 miles of the facility).

<sup>6</sup> Although the headings of Mr. Besade's and Ms. Williamson's declarations indicate that the declarations support organizational standing, it is apparent from the body of each declaration that the declarations actually support representational standing.

Ms. Williamson's declaration indicates that she resides in Riverhead, New York, approximately 36 miles from Millstone, and maintains property on Fishers Island, New York, which is just within 10 miles of Millstone. Ms. Williamson points out that CAM is authorized to represent her in this proceeding. Supplemental Petition, Exhibit 3, at 9, 13. Unlike Mr. Besade, Ms. Williamson does not reside "little more than a stone's throw from the facility," and therefore, does not meet the close proximity test. Apart from various allegations made in the Supplemental Petition related to injuries from hypothetical beyond-design-basis scenarios, there is no apparent injury that could be caused by the proposed amendment at these distances from Millstone. Indeed, the alleged potential injuries from beyond-design-basis fuel storage accidents (e.g., loss of SFSP inventory) exists independent of the re-racking proposal. Moreover, there is no showing that the probability or consequences from such speculative events are driven by the total number of assemblies in the SFSP, rather than by the most recently discharged fuel. Therefore, CAM has not adequately demonstrated either Ms. Williamson's or its own representational standing in this proceeding, and CAM's participation should be denied.

#### IV. PETITIONERS' PROPOSED CONTENTIONS

##### A. NRC Requirements for Admission of Contentions

To gain admission as a party, a petitioner for intervention must proffer at least one admissible contention for litigation. 10 C.F.R. § 2.714(b)(1). A contention must specify the particular issue of law or fact the petitioner is raising, and contain: (1) a brief explanation of the basis for the contention; and (2) a concise statement of the alleged facts or expert opinion that supports the contention and upon which the petitioner will rely in proving the contention at the hearing. 10 C.F.R. § 2.714(b)(2). The contention should refer to those specific documents or other sources of which the petitioner is aware and upon which he "intends to rely in establishing the validity of [the] contention." Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and

3), CLI-99-11, 49 NRC 328, 333 (1999); see also Final Rule, Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33168, 33170 (Aug. 11, 1989) (“Final Rule”). The contention and bases offered must establish that a “genuine dispute” exists with the applicant on a “material” issue of law or fact. 10 C.F.R. § 2.714(b)(2)(iii). The dispute at issue is “material” if its resolution would “make a difference in the outcome of the licensing proceeding.” Final Rule, 54 Fed. Reg. at 33172.

The Commission adopted these contention standards in 1989 as a conscious attempt to raise the threshold for an admissible contention and ensure that only intervenors with genuine and particularized concerns participate in NRC hearings. See Final Rule, 54 Fed. Reg. at 33168. The rules insist upon “some factual basis” for an admitted contention. Id. The petitioner must “be able to identify some facts at the time it proposes a contention to indicate that a dispute exists between it and the applicant on a material issue.” Id. Contentions shall not be admitted if at the outset they are not described with reasonable specificity or are not supported by “some alleged fact or facts” demonstrating a genuine material dispute. Id. at 33170.

In Arizona Pub. Serv. Co. (Palo Verde Nuclear Generating Station, Unit Nos. 1, 2 and 3), CLI-91-12, 34 NRC 149 (1991), the Commission stated its intent that Section 2.714(b)(2) be interpreted strictly: “If any one of these requirements is not met, a contention must be rejected.” 34 NRC at 155 (citing 54 Fed. Reg. at 33171). The Commission’s expectations with respect to all of these requirements were also recently emphasized in its “Statement of Policy on Conduct of Adjudicatory Proceedings,” issued on July 28, 1998:

The Commission has stated that a [licensing] board may appropriately view a petitioner’s support for its contention in a light that is favorable to the petitioner, but the board cannot do so by ignoring the requirements set forth in section 2.714(b)(2). Arizona Public Service Co. (Palo Verde Nuclear Generating Stations, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991). The Commission reemphasizes that licensing boards should continue to require adherence to section 2.714(b)(2), and that the burden of coming forward with admissible contentions is on their proponent. A



contention's proponent, not the licensing board, is responsible for formulating the contention and providing the necessary information to satisfy the basis requirement for the admission of contentions in 10 C.F.R. § 2.714(b)(2).

CLI-98-12, 48 NRC 18, 22 (1998).

The rules on the admission of contentions establish an evidentiary threshold more demanding than a mere pleading requirement. The rules require precision in the contention pleading process and require that a proposed contention has plausible and relevant factual support.<sup>7</sup> Moreover, under longstanding Commission precedent, proposed contentions must fall within the scope of the issues set forth in the notice of hearing. See Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), LPB-90-6, 31 NRC 85, 91 (1990); Public Serv. Co. of Indiana, Inc. (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170 (1976). See also Wisconsin Elec. Power Co. (Point Beach Nuclear Plant, Units 1 and 2), ALAB-739, 18 NRC 335, 339 (1983).<sup>8</sup>

As discussed below, Petitioners have not satisfied the Commission's strict requirement that the supporting basis for proposed contentions be adequate to show a genuine issue and that the proposed contentions, if proven, would be of consequence in this proceeding.

B. Contention 1: Failure to Consider Credible Scenarios of Fully Blocked Flow Channels

In proposed Contention 1, Petitioners challenge the flow channel blockage evaluation included in the Application, claiming that the evaluation is insufficiently bounding. Supplemental Petition, at 9. Petitioners, however, cite only to page 5 of NNECO's evaluation summary, provided as Attachment 3 to the Application. Petitioners make no reference to the

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<sup>7</sup> In Union of Concerned Scientists v. United States Nuclear Regulatory Comm'n, 920 F.2d 50 (D.C. Cir. 1990), the court upheld the NRC's revisions to 10 C.F.R. § 2.714, compared Section 2.714(b), as amended, to the prior version, and confirmed that "[t]he new rule perceptibly heightens th[e] pleading standard" for contentions. Id. at 52.

<sup>8</sup> See 54 Fed. Reg. at 33169-71 (revised rules on admissibility of contentions did not alter pre-existing case law).

full, non-proprietary licensing report included in Attachment 5 to the Application, or more particularly, to the local pool water temperature evaluation at pages 5-5 through 5-9 of that report. That evaluation discusses the conservative and bounding assumptions made in the evaluation by NNECO's contractor, Holtec International ("Holtec"). As discussed above, for a contention to be admissible, the petitioner must provide a "basis" of alleged facts or expert opinion, with references to specific sources and documents that establish these facts or expert opinion, and show that a genuine dispute exists on a material issue of fact or law. See 10 C.F.R. §§ 2.714(b)(2), (d)(2). For this proposed contention, there is an inadequate basis to establish a genuine dispute.

Regarding the postulated flow channel blockage, the storage rack cells are designed with cooling flow inlets located at the bottom of each cell. Also, near the bottom of all fuel storage cells are side flow holes that also supply flow to the cell. The openings at the top of the cell provide cooling flow outlets. The thermal-hydraulic analysis provided by NNECO assumes for bounding purposes that the hottest fuel is stored in four corner fuel storage cells, and these cells are assumed to be next to one another. Application, Attachment 5, at 5-5. For corner cells, the cooling flow inlets at the bottom of the cells are 100% blocked because rack pedestals cover the inlet openings. Id. In addition, the thermal-hydraulic analysis assumes the top of the cell is 50% blocked, which bounds blockage due to a dropped fuel assembly. Id. at 5-6. Thus, the thermal-hydraulic analysis conservatively assumes the hottest fuel is stored in four adjacent cells, and each of those cells has 100% blocked bottom inlets and 50% blocked outlets.

Petitioners state that there are "credible scenarios" that could cause differing blockage conditions (e.g., an entire flow channel, or multiple flow channels become completely blocked). But there is no basis provided for why these scenarios are "credible" or why they are not bounded by the conservative Holtec evaluation. Moreover, there are at Millstone — as at

any nuclear plant — administrative controls to limit the potential for foreign material falling into the SFSP and that would reduce the likelihood of the allegedly “credible scenarios.” Neither the proposed contention nor the basis statement provides any specific challenge to the adequacy of these controls.

In total, the basis offered is insufficient to support the proposed contention. Proposed Contention 1 should be rejected. See 10 C.F.R. § 2.714(b)(2)(ii).

C. Contention 2: Failure to Consider Dropping an Empty Rack onto Irradiated Fuel

In proposed Contention 2, Petitioners correctly note that NNECO may not install the southern-most Region 2 rack (the so-called 15th rack) at this time. Petitioners are concerned that this rack will not be installed until adjacent irradiated fuel is present in the racks; that the Application does not require the adjacent racks to be empty when the rack is installed; and that it would be “conservative to assume that all five racks will be completely loaded at the time the rack is installed.” Supplemental Petition, at 11. Petitioners claim that NNECO should analyze the movement of the 15th proposed storage rack over irradiated fuel assemblies in the SFSP, and analyze the scenario of dropping that empty storage rack onto irradiated fuel assemblies. This proposed contention is inadmissible because it fails to establish that a genuine dispute exists on a material issue of fact or law. See 10 C.F.R. §§ 2.714(b)(2), (d)(2). It also fails to raise an issue within the scope of the present proceeding.

Regardless of when, and if, the last rack is installed, Millstone Unit 3 Technical Specification 3.9.7, both presently and as proposed to be modified in the Application, states that “[l]oads in excess of 2,200 lbs shall be prohibited from travel over fuel assemblies in the spent fuel pool.” Therefore, this Technical Specification expressly precludes the movement of an empty rack over the irradiated fuel. This restrictive license condition is equal to any relief Petitioners could gain in this proceeding for this proposed contention. NRC licensing boards

have previously rejected proposed contentions that require an action violating a specific technical specification without a particularized showing that there is a reasonable basis to believe that the applicant will act contrary to the terms of the requirement. Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant), LBP-99-25, 50 NRC 25, 34 (1999); General Public Utilities Corp. (Oyster Creek Nuclear Generating Station), LBP-96-23, 44 NRC 143, 164 (1996). There is no such basis offered in the present case to support the proposed contention, and therefore it should be rejected. See 10 C.F.R. § 2.714(b)(2)(ii).

D. Contention 3: No Evaluation of Cask Drop

In proposed Contention 3, Petitioners claim that in the Application NNECO has failed to properly evaluate potential mechanical loads under accident conditions because it did not consider the dropping of a fuel shipping cask into the cask pit or fuel pool. Supplemental Petition, at 11. This proposed contention is inadmissible because it fails to establish that a genuine dispute exists on a material issue of fact or law. See 10 C.F.R. §§ 2.714(b)(2), (d)(2). As with proposed Contention 2, Petitioners fail to raise an issue within the scope of this proceeding.

First, as discussed above in the NNECO response to proposed Contention 2, Technical Specification 3.9.7, both presently and as proposed to be modified in the Application, precludes the movement of loads greater than 2,200 pounds over irradiated fuel. Therefore, a shipping cask could not be moved over the fuel. As discussed with respect to proposed Contention 2, there is no basis provided to support a contention that NNECO would violate this requirement.

Similarly, this proposed contention is clearly outside the scope of this proceeding. The Petitioners maintain (Supplemental Petition, at 12) that the contention is credible because fuel will need one day to be removed from the SFSP. However, the present proposed

amendments do not involve removing fuel from the pool, do not involve the use of a shipping cask, and do not have any impact on whether shipping casks will ever be used at Millstone Unit 3. Should NNECO decide at some later date to employ the use of a fuel shipping cask, such that it must be moved over irradiated fuel, an additional license amendment would be required.

Finally, the lack of a basis for the contention is illustrated by several simple facts. Limitations on the movement of loads over the SFSP and irradiated fuel are specifically addressed by the Millstone Unit 3 NRC Safety Evaluation Report (“SER”), NUREG-1031, Supplement 2, dated September 1985, Section 9.1.5. The spent fuel shipping cask trolley is physically incapable of carrying loads over the SFSP. *Id.* at 9-2. The new fuel handling crane, the new fuel receipt crane, and the spent fuel bridge hoist do not have the capacity to lift an object as heavy as a spent fuel storage cask. The new fuel handling crane has been and will continue to be equipped with electrical interlocks to prevent it from carrying loads over the SFSP. *Id.* The new fuel receiving crane is physically incapable of carrying loads over the SFSP. *Id.* The spent fuel bridge hoist does not have the capability to lift a shipping cask.

In sum, there is no basis for this proposed contention and no basis for relief in this proceeding. 10 C.F.R. §§ 2.714(b)(2) and (d)(2).

E. Contention 4: Undue and Unnecessary Risk to Worker and Public Health and Safety

In proposed Contention 4, Petitioners claim that the existing spent fuel storage racks rely on physical separation for criticality control, and that the Application would trade physical separation for a new complex array of administrative controls. Supplemental Petition, at 13. This proposed contention focuses on the proposed reconfiguration of the Millstone Unit 3 SFSP into three regions. The fuel storage in each region would be restricted by fuel burnup/enrichment and decay limitations for criticality control. Petitioners argue that these administrative controls (the fuel burnup/enrichment limitations) are “new” and that they cause

“undue and unnecessary” risk. There is no genuine basis, however, for this proposed contention and, therefore, the issue is inadmissible under 10 C.F.R. §§ 2.714(b)(2) and (d)(2).

The Millstone Unit 3 TS currently incorporate administrative controls for two-region storage in the existing spent fuel storage racks. These include fuel burnup/enrichment limitations. See Technical Specification 3.9.14, Figure 3.9-1. Contrary to the proposed contention, the proposed amendment, therefore, does not introduce “new” controls. These types of controls are extremely common and have been used in numerous SFSPs.<sup>9</sup> More broadly, the use of administrative control for power plant operation, such as operating procedures, technical specifications, vendor recommendations, and industry guidance, is routine at most, if not all, nuclear power plants. There is nothing novel in using administrative controls to guard against criticality in a SFSP. There is no basis on which to conclude that the Millstone situation is any different from that approved previously by the NRC — both at Millstone Unit 3 and elsewhere. There is no basis suggested that could conceivably lead to relief in this proceeding.<sup>10</sup>

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<sup>9</sup> See, e.g., the following notices concerning license amendments for SFSP storage expansions that include the use of multi-region SFSPs: St. Lucie, Unit 2, 63 Fed. Reg. 69332, 69340 (1998), issued on May 6, 1998, 64 Fed. Reg. 27315, 27334 (1998); Beaver Valley Power Station, Unit 1, 58 Fed. Reg. 47303 (1993), issued on November 1, 1993, 58 Fed. Reg. 62149, 62160 (1993); Zion Nuclear Power Station, Units 1 and 2, 57 Fed. Reg. 27482 (1992), issued on February 23, 1993, 58 Fed. Reg. 16215, 16240 (1993); Crystal River Station, Unit 3, 55 Fed. Reg. 9230 (1990), issued on February 23, 1993, 58 Fed. Reg. 16215, 16240 (1993); St. Lucie Unit 1, 52 Fed. Reg. 32852 (1987), issued on March 11, 1988, 53 Fed. Reg. 9498 (1988); Palisades Plant, 51 Fed. Reg. 41711 (1986), issued on July 24, 1987, 52 Fed. Reg. 28496 (1987); Diablo Canyon, Units 1 and 2, 51 Fed. Reg. 1451 (1986), issued on March 11, 1988, 52 Fed. Reg. 41519 (1987); Millstone Nuclear Power Station, Unit 2, 50 Fed. Reg. 45877 (1985), issued on January 15, 1986, 51 Fed. Reg. 3708 (1986); Turkey Point Plants, Units 3 and 4, 49 Fed. Reg. 50794 (1984), issued on November 21, 1984, 49 Fed. Reg. 50794 (1984); Ginna Nuclear Power Plant, 49 Fed. Reg. 30261 (1984), issued on November 14, 1984, 49 Fed. Reg. 50794 (1984); McGuire Nuclear Power Station, Units 1 and 2, 49 Fed. Reg. 27225 (1984), issued on September 24, 1984, 49 Fed. Reg. 42814 (1984); and Summer Nuclear Station, Unit 1, 49 Fed. Reg. 26846 (1984), issued on September 27, 1984, 49 Fed. Reg. 42814 (1984).

<sup>10</sup> Moreover, as will be discussed with respect to proposed Contention 6, the proposed new racks would also rely on physical separation and Boral for criticality control.

The proposed contention refers to two events in September 1999 — the criticality accident at a Japanese fuel processing facility and the loss of a U.S. spacecraft due to an apparent mathematical error. Supplemental Petition, at 14. However, no reference is provided to any analysis of those situations suggesting relevant root causes or applicable corrective actions, and no nexus is drawn to the Millstone Unit 3 SFSP. These events suggest no more than that human errors occur. The Millstone Unit 3 SFSP is already designed with an awareness of that fact. The proposed contention also refers to a civil penalty imposed on NNECO in December 1997, for violations at Millstone. Supplemental Petition, at 15. However, NNECO implemented corrective actions to address those noncompliances; the NRC accepted those corrective actions; and the NRC subsequently permitted restart of Millstone Unit 3. This unrelated enforcement legacy cannot support an inference that NNECO will not comply with administrative controls and that it should be treated differently from other licensees with respect to spent fuel storage.

The basis offered for this proposed contention does not establish a genuine issue and, therefore, the proposed contention is inadmissible under 10 C.F.R. §§ 2.714(b)(2) and (d)(2).

F. Contention 5: Significant Increase in Probability of Criticality Accident

In proposed Contention 5, Petitioners claim that NNECO will eliminate an existing barrier against inadvertent criticality because the Application proposes to amend the Technical Specification requirement to routinely verify 1,750 parts per million (“ppm”) soluble boron in the SFSP. Supplemental Petition, at 16. Construing the proposed contention favorably, it could be read to raise issues with respect to two aspects of the proposed reracking: (1) the proposed reduction in the required boron concentration to 800 ppm; and (2) the proposal to verify the boron concentration only during fuel movements. This proposed contention, however,

appears to misapprehend the current proposal and fails again to state a basis sufficient to establish that a genuine issue exists. See 10 C.F.R. §§ 2.714(b)(2).

With respect to the proposal to establish a TS verifying boron levels of 800 ppm in the SFSP during fuel movements, NNECO is merely proposing reinstating a prior TS. Until April 1998, the Millstone Unit 3 TS 3.9.1.2, "Boron Concentration," required the boron concentration in the SFSP be maintained at 800 ppm whenever fuel assemblies are moved within the SFSP. Pursuant to License Amendment 158, the required boron concentration in the SFSP, as credited in the criticality analysis, was increased to 1,750 ppm to compensate for the potential loss of Boraflex as a neutron absorber following a greater than operating basis earthquake ("OBE") seismic event. 62 Fed. Reg. 63970, 63980 (1997). See also supra, note 3. However, as discussed in the Application, given the Boraflex in the new racks, and the restrictions on fuel stored in the existing racks, Boraflex in the existing SFSP racks would no longer be credited as a neutron absorber for criticality control once those racks are designated as Region 3 racks. Application, Attachment 3, at 10. There would no longer be any need to consider whether the Boraflex would fail following a greater than OBE seismic event. Therefore, the required boron concentration in the SFSP would be changed back to its prior level of 800 ppm. No basis is provided to specifically challenge this previously-approved criticality control.

Under the proposal, boron would be required to be verified by surveillance only during fuel assembly movements within the SFSP. Id. The proposal again does no more than reinstate the prior TS with respect to surveillances. The Supplemental Petition discusses the possibility of fuel movement errors and undetected misloaded fuel assemblies. Supplemental Petition, at 18. The 800 ppm boron in the SFSP is credited to prevent criticality in the event of a misloaded or a dropped fuel assembly. Accordingly, both the proposed TS and the previously approved TS required a surveillance during fuel movements. Contrary to the proposed



contention, there is no reason to credit or verify the soluble boron concentration at any time other than fuel movement. Additional surveillances would constitute unneeded operational and administrative burdens.<sup>11</sup>

As a basis, Petitioners quote a discussion in the Application concerning the postulated effect on the moderator temperature coefficient of replacing Boraflex panels with ordinary water. Supplemental Petition, at 17 (citing Application, Attachment 5, at 4-9). The calculation determined that if the temperature of the SFSP exceeds 160 °F, a boron concentration of about 100 ppm is required to maintain  $k_{\text{eff}}$  less than or equal to 0.945. Application, Attachment 5 at 4-9. Petitioners cite this calculation as standing for the premise that a human error (specifically, placing a fuel assembly into an incorrect location) could lead to a SFSP criticality. Supplemental Petition, at 17. This claim is both incorrect and misleading. The analysis represents only that the 100 ppm is required to maintain a  $k_{\text{eff}}$  of 0.945, and makes no assertion with regard to a criticality event. What Petitioners failed to also cite was the last paragraph of the cited discussion, which states that “[h]owever, since the spent fuel cooling system is capable of maintaining fuel pool water temperature less than 160 °F even with a single failure, this calculation is outside of the design-basis, and no further action is necessary.” Application, Attachment 5, at 4-9 (emphasis added). On its face, the Application does not stand for the proposition suggested.

Overall, there is no basis for this proposed contention, and it is inadmissible under 10 C.F.R. §§ 2.714(b)(2) and (d)(2).

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<sup>11</sup> Petitioners fail to recognize that the effect of this change is primarily to change the TS surveillance schedule for boron concentration during fuel movement. As a practical matter, boron in the spent fuel pool does not disappear after fuel movements, nor is it appreciably diluted over time.

G. Contention 6: Proposed Criticality Control Measures Would Violate NRC Regulations

In proposed Contention 6, Petitioners claim that the criticality control measures proposed by NNECO would violate General Design Criterion (“GDC”) 62 as set forth in 10 C.F.R. Part 50, Appendix A. Supplemental Petition, at 19. This proposed concern is unsupported and lacks an adequate legal or technical basis. GDC 62 requires that “[c]riticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically safe configurations.” In fact, the NNECO proposal utilizes physical systems (racks in a geometrically safe configuration, neutron absorber material, soluble boron in the SFSP water) and processes (enrichment, burnup, and decay restrictions), as well as administrative controls, to prevent criticality. The proposal fully meets GDC 62.

The NRC Appeal Board has held that:

General design criteria, as their name implies, are ‘intended to provide engineering goals rather than precise tests or methodologies by which reactor safety [can] be fully and satisfactorily gauged.’ Nader v. NRC, 513 F.2d 1045, 1052 (DC Cir. 1975). [General Design Criteria] are cast in broad, general terms and constitute the minimum requirements for the principal design criteria of water-cooled nuclear power plants. There are a variety of methods for demonstrating compliance with GDC. Through regulatory guides, standard format and content guides for safety analysis reports, Standard Review Plan provisions, and Branch Technical positions, license applicants are given guidance as to acceptable methods for implementing the general criteria. However, applicants are free to select other methods to achieve the same goal. If there is conformance with regulatory guides, there is likely to be compliance with the GDC. Even if there is nonconformance with the staff’s guidance to licensees, the GDC may still be met.

Consumers Power Co. (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 567, n.7 (citation omitted) (emphasis added). “Simply stated, staff guidance generally sets neither minimum nor maximum standards.” Id. at 568, n.10. See also 36 Fed. Reg. 3255 (1971); 10 C.F.R. § 50.34(a)(3)(i).

Section 9.1.2 of the Commission's Standard Review Plan ("SRP") sets forth guidance for NRC staff review of applications relating to spent fuel storage "during all credible ... conditions." With regard to this proceeding, the SRP establishes an acceptance criterion for criticality:  $k_{\text{eff}}$  should not be greater than 0.95 for a pool "when fully loaded and flooded with nonborated water." SRP, Section 9.1.2, at 9.1.2-4. According to the SRP, meeting GDC 62 "is based on conformance to position C.1 and C.4 of [Draft] Regulatory Guide ("RG") 1.13<sup>12</sup> [which relate to the structure in which the spent fuel pool is housed] and the appropriate paragraphs of ANS 57.2." *Id.* at 9.1.2-3. The nuclear criticality safety analysis should demonstrate that each SFSP system is at least 5 percent subcritical ( $k_{\text{eff}}$  less than or equal to 0.95). RG 1.13 at 1.13-9. The analysis should identify the spent fuel assembly characteristics upon which subcriticality depends. *Id.*

NNECO has evaluated the  $k_{\text{eff}}$  for various types of fuel assemblies containing a certain maximum enrichment and concluded that the racks can safely accommodate, without credit for borated water, fuel of various initial enrichments and discharge burnups, provided the combination falls within the acceptable domain indicated in Figure 4.1.1 of Attachment 5 to the Application. (As discussed previously, boron is only credited for accident analyses.) The fuel enrichment/burnup criteria will be established in Technical Specifications and NNECO states that it will comply through appropriate administrative procedures. Application, Attachment 3, at 1. Nothing in the Supplemental Petition indicates that the subcriticality of the SFSP will not be maintained.

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<sup>12</sup> "Proposed Revision 2 to Regulatory Guide 1.13, 'Spent Fuel Storage Facility Design-basis'" (1981). Regulatory guides and the like do not have the force of regulations. Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), CLI-74-40, 8 AEC 809, 811 (1974). Nonetheless, Draft Regulatory Guide 1.13 indicates that one acceptable method of complying with GDC 62 is limiting the burnup value of the fuel to be placed in the SFSP.

Petitioners' sole claim appears to be that NNECO's use of "administrative measures" is not in conformance with RG 1.13 (apparently arguing that enrichment and burnup restrictions are administrative measures). Supplemental Petition, at 20. Petitioners then reference a section of RG 1.13 that provides that a nuclear criticality analysis should demonstrate that criticality could not occur without at least two unlikely, independent, and concurring failures or operating limit violations. Id. citing RG 1.13, at 1.13-9. Petitioners claim that because misplacement of a fuel assembly could cause criticality, NNECO's administrative controls do not satisfy RG 1.13. Id. at 21. Petitioners, however, fail to explain how NNECO's proposed use of administrative controls contradicts this section of RG 1.13. RG 1.13 does not state that a licensee can not take credit for burnup. As discussed above, RG 1.13 indicates that the nuclear criticality analysis should be performed, assuming a design-basis event occurs despite the use of the administrative controls. NNECO has performed that accident analysis. Petitioners fail to provide any support for the contention that misplacement of a fuel assembly will result in a SFSP criticality. See infra NNECO response to proposed Contention 5.

Contrary to the Petitioners' claim, there is no basis provided in which to infer that NNECO will not meet GDC 62. The fuel storage rack designs will prevent criticality in the SFSP by the use of geometrically safe configurations and Boral neutron absorbers. NNECO's proposal to take credit for fuel burnup limits as a means to maintain SFSP subcriticality is also clearly consistent with GDC 62. GDC 62 provides that criticality shall be prevented by physical systems or processes. The burnup of fuel, as well as its enrichment, is a physical process that affects criticality. Petitioners have failed to provide an adequate basis to support this proposed contention. Therefore, the proposed contention must be dismissed. See 10 C.F.R. § 2.714(b)(2).

H. Contention 7: Significant Increase in Probability and Consequences of Overheating Accident

In proposed Contention 7, Petitioners claim that the additional heat load from the increased SFSP capacity would reduce the time available to respond to a loss of SFSP water. Supplemental Petition, at 21. This proposed contention fails again to state a contention with a basis sufficient to establish that a genuine issue exists. See 10 C.F.R. §§ 2.714(b)(2). As discussed above, the only SFSP accident discussed in the Unit 3 FSAR and required to be addressed in the Application, is a fuel handling accident in which a fuel assembly drops onto the fuel racks during refueling activities. An increase in the number of fuel assemblies in the SFSP has no impact upon that design-basis accident scenario.

With respect to the heat load assertions in the proposed contention, the primary consideration for a SFSP capacity increase is the ability of the SFSP cooling system to remove the decay heat from the additional fuel assemblies. NNECO has reanalyzed the SFSP thermal performance and determined that it is capable of removing the increased heat load while maintaining the SFSP water temperature within the design limit. Petitioners do not cite to this thermal-hydraulic analysis and never directly challenge its sufficiency.<sup>13</sup> There is also no real basis offered for the argument (Supplemental Petition, at 23) that the proposal increases the likelihood that the pool temperature will “exceed the structural qualification temperature and also reach the boiling point.”

NNECO’s analysis has demonstrated that the SFSP cooling system is capable of removing the increased heat load while maintaining the SFSP water temperature within the

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<sup>13</sup> The proprietary thermal-hydraulic analysis was originally submitted by NNECO to support a separate license amendment related to operational full core off-loads. See Letter from Martin L. Bowling, Recovery Officer, Northeast Nuclear Energy Company, to U.S. Nuclear Regulatory Commission, “License Amendment Request and Technical Specification Changes for Full Core Off-Load (PTSCR 3-16-98),” B17004 (Jan. 18, 1999). A non-proprietary version of the thermal-hydraulic analysis was submitted to the NRC on April 5, 1999, and has previously been provided to the Licensing Board.

design limit with the modified pool volume.<sup>14</sup> Petitioners fail to even acknowledge the analysis.<sup>15</sup>

In total, Petitioners have failed to provide an adequate basis to support this proposed contention. The proposed contention must be dismissed. See 10 C.F.R. § 2.714(b)(2).

I. Contention 8: Increased Probability and Consequences of Severe Accidents

Proposed Contention 8 alleges that the Millstone Unit 3 re-rack project will “significantly increase the probability and offsite consequences of ‘severe’ accidents, defined here as accidents which involve partial or total uncovering of fuel assemblies and exothermic reaction of fuel cladding.”<sup>16</sup> Supplemental Petition, at 23. Petitioners provide no legal basis under either the Atomic Energy Act (“AEA”) or the National Environmental Policy Act (“NEPA”) for considering their alleged “severe accidents.” Petitioners also provide no factual basis for considering their alleged “severe accidents.” Accordingly, there is no basis for admitting the proposed contention.

First, Petitioners do not address the fundamental legal limitations which the NRC has imposed on safety analyses for license amendment applications. From a safety perspective under the AEA, NNECO is required by the NRC only to consider accidents within the plant’s

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<sup>14</sup> From a heat load (thermal-hydraulic) perspective, Millstone Unit 3 has been licensed for 2,160 assemblies in the SFSP since implementation of License Amendment 60 in March 1991; the original FSAR indicated that the plant was designed for 1,869 assemblies. The Application proposes that the current storage capacity of 756 be increased by 1,104 storage cells to a total of 1,860 storage cells. Application, Attachment 3, at 2. Petitioners fail to note that this number is not only less than the current licensed capacity of 2,160, but is also less than the original design of 1,869.

<sup>15</sup> Petitioners also fail to note that the thermal-hydraulic analysis conservatively does not consider the heat absorbing properties of the new storage racks.

<sup>16</sup> It should be noted that Petitioners’ definition of “severe accidents” is different from the NRC’s definition of severe accidents as that term is used in the NRC’s “Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants,” 50 Fed. Reg. 32138 (August 8, 1985) (“Severe Accident Policy Statement”). The type of accident hypothesized by Petitioners for SFSPs is not covered by the NRC’s policy statement, which is directed at reactor rather than fuel storage accidents.

design basis. None of the scenarios hypothesized by Petitioners are within the design basis of Millstone Unit 3. Contrary to Petitioners' suggestion, the existing conditions at Millstone Unit 3 do not provide a "baseline" level for the probability and consequences of severe SFSP accidents. The NRC has never established such a baseline. The NRC's process for evaluating safety is based solely on whether accidents are within the plant's design basis. None of the accidents proposed by Petitioners are within the Millstone 3 design basis. Accordingly, relief would require a backfit and the proposed contention raises no legally cognizable issue.

Petitioners also provide no legal basis for the consideration of their hypothesized scenarios under NEPA. The NRC has recognized in its Severe Accident Policy Statement that, for the licensing of certain operating reactors, an Environmental Impact Statement ("EIS") should include the consideration of beyond design basis accidents, if the scenarios are not remote and speculative. There is no indication that the NRC ever intended to apply the Severe Accident Policy Statement where no EIS is required or to license amendment proceedings, including proceedings related to spent fuel pool reracking.<sup>17</sup> In Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-876, 26 NRC 277, 282 (1987), the Appeal Board held that the NRC did not intend to apply the Severe Accident Policy Statement to a license amendment proceeding involving reracking of a spent fuel pool. Similarly, there is no need in this proceeding to consider the severe accidents defined by Petitioners.

Even assuming that somehow, contrary to the limits on the NRC's licensing process, NNECO were required to consider beyond design basis accidents — if, for example, the

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<sup>17</sup> Similarly, the Court of Appeals decision in Limerick Ecology Action v. NRC, 869 F.2d 719, which is not cited in this contention, is also not helpful to the Petitioners' cause. In that case, in the context of an Environmental Impact Statement related to operation of a reactor, the court remanded to the NRC for further consideration of severe accident mitigation damage alternatives ("SAMDas"). Nothing in that case or the Commission's regulations of Part 51 would require consideration of severe accident mitigation measures for the current operating license amendment, particularly where that amendment is not a major federal action requiring an EIS.

probability could be shown to exceed some level — Petitioners have not provided any facts which would demonstrate that their hypothesized accidents must be considered. In NEPA terms, Petitioners’ “severe accidents” are clearly remote and speculative. The central supposition of the proposed contention is the uncovering of fuel assemblies in the SFSP. But no explanation is given in the basis statement as to how the uncovering of fuel assemblies would result from a credible scenario at Millstone Unit 3. Petitioners have made no attempt to show that the probability of occurrence of the beyond design basis scenario is high enough to make such a scenario credible enough to warrant consideration. The need for showing how such a scenario could occur is increased by the fact that the NRC has consistently determined that uncovering of the fuel assemblies is a beyond-design-basis event for every wet storage facility in the domestic commercial nuclear power industry, including Millstone Unit 3. The scenarios which could result in uncovering the fuel all need to assume a beyond-design-basis earthquake or some other unlikely scenario.

The lack of factual support for Petitioners’ claims is clear from a careful examination of the material they have proffered. Petitioners rely most heavily on a “report” prepared by Mr. Gordon Thompson (Exhibit 1 to the Supplemental Petition) (“Thompson Report”) in connection with the Carolina Power and Light Company, Shearon Harris plant. According to Petitioners, the report “provides generic information which applies to Millstone Unit 3.” Supplemental Petition, at 23. Petitioners have failed, however, to demonstrate a specific nexus between the information in the Thompson Report and the Millstone Unit 3 Application here at issue. More fundamentally, while the proposed contention raises the possibility of the potential for an “exothermic reaction of fuel cladding if fuel assemblies are partially or totally uncovered,” no basis is provided in the Thompson Report for assuming an uncovering of fuel assemblies.



In fact, in Appendix C, the Thompson Report specifically cites (at C-3) an NRC analysis of the H.B. Robinson SFSP and the low probability of an earthquake that would cause structural failure and water loss. The report therefore does not establish that these events need to be considered. The report further acknowledges (*id.*) that at the Shearon Harris plant “administrative and technical measures are employed to prevent a cask drop onto a pool wall or into a pool,” and makes no attempt to estimate the probability that such a drop event would lead to a loss of pool water. This also provides no basis for assuming such scenarios at Millstone. The report finally raises (at C-5 to C-6) the specter of sabotage and terrorism events, but these events also exceed the plant’s security design-basis and cannot support this contention. The report, therefore, completely fails to establish the credibility of a SFSP water loss event.

Similarly, the Brookhaven National Laboratory Report, NUREG/CR-6451, referenced in the Supplemental Petition preamble (not in the context of this proposed contention), addresses consequences of a hypothetical accident involving the draining or the boiling of the SFSP, but recognizes that the accident initiator assumed in the report’s analysis was a “composite of events” including “beyond design-basis seismic events, spent fuel cask drop events, and other less dominant events such as SFSP loss of cooling makeup.” NUREG/CR-6451, at 3-2. No basis exists in that report to demonstrate how such a scenario could credibly occur at Millstone.

Petitioners’ statement of basis for the proposed contention is also littered with assertions about the consequences of beyond-design-basis accidents based upon the Thompson Report, but none of those assertions suggests why the alleged accident is credible in general or, in particular, at Millstone Unit 3. For example, no support is provided for the statement in the Supplemental Petition (at 24) that “a reduction in center-center distance will have the effect of increasing the number of fuel uncover [sic] scenarios that will lead to a point where exothermic

reactions of fuel cladding is initiated.” No facts have been provided to show why the SFSP cooling provided at Millstone Unit 3 could become inadequate, especially because the ability to provide make-up to the SFSP has been carefully designed to further assure that the fuel remains covered for all design-basis events. Similarly, the Supplemental Petition fails to provide any factual support for the charges (at 25) that a “greater heat load and reduced water mass in the pool will have the effect of increasing the number of accident scenarios wherein water loss proceeds to a point where fuel is partially or totally uncovered.” Again, no facts have been presented to show that SFSP cooling and inventory make-up capabilities at Millstone Unit 3 would not prevent this from becoming a credible scenario.

Finally, Petitioners’ proposed contention would apply to any proposal for high-density wet storage. Experience shows that this does not demonstrate a genuine dispute on a material issue of law or fact — that is, an issue that would make a difference in the outcome of this proceeding. The first paragraph (Supplemental Petition, at 24), states that the problem alleged is created by “installation of high-density racks,” and that the “potential does not exist with low-density racks.” However, both the contention and its basis fail to acknowledge that high-density storage racks are the norm throughout the nuclear industry, and that the current storage racks at Millstone Unit 3 are high-density racks. Such high density racks have been installed many times with the knowledge of the NRC and despite the NRC’s knowledge and earlier receipt of the reports which are referenced by Petitioners. At no time has the NRC indicated that the material in these reports precluded licensees from safely installing high-density spent fuel storage racks.

These same considerations apply equally to the possible need to consider the consequences of these scenarios for the purposes of NEPA. An Appeal Board has previously excluded similar contentions raising generic issues involving remote and speculative beyond-

design-basis events. In Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29 (1989), the Appeal Board excluded a proposed contention asserting the possibility of a zircalloy fire similar to the scenario raised in Contention 8. The Appeal Board observed that a Brookhaven National Laboratory Report specifically concluded that “[a]ccidents leading to complete pool draining that might be initiated by loss of cooling water circulation capabilities ... were found to have a very low likelihood.” Vermont Yankee, ALAB-919, 30 NRC at 45-46.<sup>18</sup> The contention therefore exceeded the scope of the NEPA “rule of reason” for scenarios to be considered. The Petitioners’ proposed contention raises the same type of remote and speculative scenarios which were rejected in Vermont Yankee. NEPA does not require agencies in an environmental review to consider such remote and speculative events. See, e.g., San Luis Obispo Mothers for Peace v. NRC, 751 F.2d 1287, 1301 (D.C. Cir. 1984), aff’d en banc, 789 F.2d 26, cert. denied, 479 U.S. 923 (1986).

In summary, this proposed contention fails to provide a basis to demonstrate a genuine dispute with respect to a material issue. This generic challenge to high-density wet storage is equally applicable to the current design at Millstone, which already has been accepted by the NRC, and to every high-density, wet fuel storage facility in the United States. Accordingly, the proposed contention should be rejected.

J. Contention 9: Failure to Conduct a Sound and Prudent Evaluation of Alternatives to High-Density Storage Racks

In proposed Contention 9, the Petitioners “contend that NNECO’s evaluation [of spent fuel storage alternatives] was defective because it was conducted by a subcontractor with a conflict of interest and because it relied on outdated information.” Supplemental Petition, at 25. With respect to the first part of the contention — the alleged conflict of interest — the contention

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<sup>18</sup> The Appeal Board referenced NUREG/CR-4982, “Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82” (July 1987).

is inadmissible because, even if proven, it would “be of no consequence in the proceeding because it would not entitle the petitioner to relief.” 10 C.F.R. § 2.714(d)(2)(ii). Petitioners do not claim that the NRC has in any specific way failed to fully implement its NEPA obligations to properly evaluate reasonable alternatives. With respect to the second part of the claim — that is, that Holtec allegedly relied on outdated information — there is inadequate specificity and basis to demonstrate a genuine issue of material fact. 10 C.F.R. § 2.714(b)(2)(iii).

The primary basis provided for this proposed contention is the charge that NNECO’s contractor, Holtec, has a conflict of interest with respect to evaluations of alternatives to wet storage installations — because the company “specializes in wet storage options.” This basis is wrong and it is frivolous. Holtec does indeed have an industry-wide reputation as a quality provider of wet fuel storage options. However, Holtec also offers certified dry cask storage designs.<sup>19</sup> In this case, it is the Petitioners who are relying on outdated information in alleging that none of the dry storage options currently certified by the NRC is manufactured by Holtec. Accordingly, no facts have been presented that would even suggest a conflict of interest.

Several other factors contradict the premise of this proposed contention. Holtec is almost certainly aware of its obligations under 10 C.F.R. § 50.5 to take no deliberate action which could cause NNECO to be violation of NRC requirements. Moreover, NNECO, not Holtec, submitted the applicant’s evaluation of alternatives to the proposed re-racking. NNECO, as a licensee, is aware of its obligations under 10 C.F.R. § 50.9 to provide complete and accurate

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<sup>19</sup> On October 4, 1999, the NRC issued to Holtec International a Certificate of Compliance for the HI-STAR 100 fuel storage cask system (Certificate No. 1008, Docket No. 72-1008). 64 Fed. Reg. 48259 (1999). The NRC previously issued a Certificate of Compliance, on March 31, 1999, for fuel transportation in the HI-STAR 100 fuel cask (Certificate No. 9261, Docket No. 71-9261). The NRC is also currently reviewing Holtec’s HI-STORM 100 fuel storage cask system. 64 Fed. Reg. 51271 (1999). Holtec holds several domestic contracts for dry storage using the HI-STAR and HI-STORM systems.

material information to the NRC. Therefore, even if one indulges the Petitioners in assuming that Holtec would act unprofessionally, NNECO must be presumed to have assessed Holtec's evaluation free of any conflict. And finally, as a legal matter, it is only the NRC which must comply with the NEPA obligation to consider alternatives. Any conflict Holtec may have would not apply to the NRC's Environmental Assessment ("EA").

NRC regulations for implementing NEPA obligations do not require the NRC to perform a cost-benefit evaluation of alternatives for this type of proposed NRC licensing action. In this case, NNECO evaluated the proposed license amendment against the criteria of 10 C.F.R. § 51.21 and concluded that the proposed action qualifies under subparagraph (c)(9) for categorical exclusion from NEPA environmental review. Application, Attachment 4, at 5. Nonetheless, an assessment is provided in the Application (in Chapter 12.0 of the Licensing Report included as Attachment 5) and the NRC has prepared an "Environmental Assessment and Finding of No Significant Impact," 64 Fed. Reg. 48675, 48677 (1999). The NRC Staff's EA states (at col. 2) that "[c]oncerns for dry cask storage include the potential for fuel or cask handling accidents, potential fuel clad rupture due to high temperatures, the need for special security provisions, and high costs."

Nothing offered by the Petitioners contradicts the conclusion of the EA regarding alternatives. With respect to the merits of the environmental evaluation provided by NNECO, the proposed contention states only that the evaluation relies upon unspecified "outdated information." Supplemental Petition, at 25. Petitioners assert in the basis statement only that because other companies are currently opting for dry cask storage, that this is "prima facie evidence that this option is not prohibitively expensive." Supplemental Petition, at 27. However, licensees make fuel storage choices based upon many factors, (e.g., availability of space in the SFSP, availability of a site for dry casks, operational flexibility, security, cost). The

fact that other licensees may opt for dry cask storage simply implies that their situations differed from that at Millstone regarding the attractiveness of alternative spent fuel storage options; this certainly does not imply that either NNECO's or the NRC Staff's evaluation of alternatives was inadequate for NEPA purposes.

In total, there is no basis offered for this proposed contention that would establish a genuine dispute. The proposed contention must be rejected. 10 C.F.R. §§ 2.714(b)(2), 2.714(d)(2).

K. Contention 10: Failure to Consider the Severe Accident Implications of Alternative Options

This proposed contention is confused, internally inconsistent, and redundant. Like proposed Contention 9, proposed Contention 10 does not cite NEPA. The proposed contention's focus on the evaluation of alternative options implies, however, that the contention is based on NEPA. (Only NEPA, and not the AEA, requires the NRC to consider reasonable alternatives. The choice of fuel storage alternatives is otherwise NNECO's.) The title of the contention further implies that the issue is NNECO's failure to consider the severe accidents associated with alternatives. The text of the proposed contention, however, appears to make the core assertion that wet storage alternatives involve severe accident risks ("uncovering of fuel assemblies and exothermic reaction of fuel cladding"), and dry storage options do not. As such, the proposed contention does not raise a new issue, but is redundant to the earlier proposed contentions. This redundancy is clear from the repeated reliance on the Thompson Report, which was also referred to in support of prior proposed contentions.

The contention is also internally inconsistent regarding use of the term "severe accident." Severe accidents for the purposes of this proposed contention are, at some points in the discussion, accidents at reactors and, at other points, accidents at spent fuel pools. The idea of a severe accident at a reactor triggering a severe accident at a spent fuel pool is remote and

speculative and was previously rejected as a contention by the Appeal Board. Vermont Yankee, ALAB-919, 30 NRC at 45-47. The idea of a loss of water inventory in the spent fuel pool is equally lacking in a basis, as discussed above in connection with proposed Contention 8. Petitioners have not provided a basis to support why either scenario needs to be considered for the purposes of NEPA.

Finally, and in any event, it is the NRC's responsibility under NEPA to ensure that reasonable alternatives are considered. The NRC has met this responsibility in its EA, which includes an evaluation of accident considerations. See 64 Fed. Reg. 48675, 48676. The evaluation concludes that "the results of the previously analyzed and NRC-accepted design-basis accident bound the radiological consequences of accidents analyzed for the SFSP rerack." No challenge is made to this conclusion, other than the implicit challenge to the NRC-accepted scope of design-basis events. In 1985, in issuing its Severe Accident Policy Statement, 50 Fed. Reg. 32138, 32144, the NRC concluded that "[o]perating nuclear power plants require no further regulatory action to deal with severe accident issues unless significant new safety information arises to question whether there is adequate assurance of no undue risk to public health and safety." This proposed contention offers no such significant new information.

For all of these reasons, this proposed contention lacks specificity, lacks legal authority, lacks technical basis, and exceeds the scope of the required NEPA review. It should not be admitted because it fails to raise a genuine issue for which relief is available in this proceeding. See 10 C.F.R. § 2.714(b)(2)(iii).

L. Contention 11: An Environmental Impact Statement is Required

This proposed contention is based on a restatement and summary of all of the preceding contentions. Petitioners allege that the various technical and severe accident concerns raised in those proposed contentions indicate that the re-racking of the Millstone Unit 3 SFSP

“will significantly increase the probability and offsite radiological consequences of accidents and thus have a significant effect on the quality of the human environment.” Supplemental Petition, at 28. Building on this allegation, Petitioners conclude that the NRC is required to produce an EIS rather than an EA. This proposed contention should be rejected for all of the reasons that the prior proposed contentions should be rejected. The aggregation of unsupported claims, many of which are not even legally cognizable, is no stronger than its components. Moreover, insofar as the contention seeks a “discretionary” EIS, the request exceeds the scope of authority of the Licensing Board.

As recited by Petitioners (Supplemental Petition, at 29), “NEPA requires federal agencies to prepare an EIS before undertaking any major federal action which may significantly affect the quality of the human environment.” The NRC implements NEPA in 10 C.F.R. Part 51, and has established specific criteria governing matters that require an EIS. See 10 C.F.R. § 51.20. Because the proposed action is not an action which “may significantly affect the quality of the human environment,” the action does not fall into any of the specific cases listed under 10 C.F.R. § 51.20(b) requiring an EIS. The NRC Staff, as discussed previously, has already prepared an EA and concluded that the proposed action has no significant environmental impact. 64 Fed. Reg. 48675. The accuracy of this conclusion is supported by the NRC Staff’s extensive experience with the preparation of EAs for other, comparable expansions in the storage capacity of spent fuel pools.

The speculative scenarios relied on by the Petitioners in this and the other proposed contentions do not require an EIS. As discussed above, these are remote and speculative scenarios of the type excluded from consideration by NEPA’s “rule of reason,” as supported by decisions in the Diablo Canyon and Vermont Yankee cases. The Brookhaven



National Laboratory Report<sup>20</sup> referenced by the Petitioners (Supplemental Petition, at 30 and 7-8), also does not establish the likelihood or credibility of the scenarios analyzed by Brookhaven. As previously discussed, the Brookhaven Report merely presumes that certain scenarios occur and addresses their hypothetical consequences.

The Petitioners also cite Limerick Ecology Action v. NRC, 869 F.2d 719 (3d Cir. 1989) as requiring the NRC to consider Severe Accident Mitigation Design Alternatives (“SAMDA”). But this decision is limited to the need for the NRC to consider SAMDAs in an EIS for the licensing of a reactor for full power operation. Severe accident probabilities and impacts germane to reactor operation (but not SAMDAs) were evaluated for Millstone Unit 3 in the EIS related to reactor operation.<sup>21</sup> Petitioners assert without any legal support that a similar review should be conducted for a license amendment application for a spent fuel pool.<sup>22</sup>

With respect to the claim that the Licensing Board find “special circumstances” and “require and EIS as an exercise of its discretion,” (Supplemental Petition, at 32), the contention seeks relief that cannot be granted by the Licensing Board. Under the plain terms of the regulations, the question of whether the NRC should prepare a discretionary EIS pursuant to 10 C.F.R. §§ 51.20(b)(14) and 51.22(b) is a Commission decision — one that this Licensing Board cannot assume absent a Commission delegation of authority or other Commission

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<sup>20</sup> NUREG/CR-6451.

<sup>21</sup> NUREG-1064, “Final Environmental Statement related to Operation of the Millstone Nuclear Power Station, Unit No. 3” (December 1984), at 5-40 to 5-66.

<sup>22</sup> Severe accident impacts and mitigation alternatives also should not be considered as a matter of policy because the factual basis for the decision in Limerick Ecology Action is not presented here. The severe accidents which are the subject of a SAMDA evaluation are accidents related to the uncovering of the core of an operating nuclear reactor. The difference was recognized by the Appeal Board in Vermont Yankee. See Vermont Yankee, ALAB-919, 30 NRC at 51. Here, as in Vermont Yankee, the Petitioners have failed to present a basis to conclude that severe accidents related to the SFSP must be evaluated, much less that they compel an EIS rather than an EA.

directive.<sup>23</sup> The NRC's statement of consideration for the final rule Part 51 emphasizes that an EIS may be prepared when the Commission determines, in the exercise of its discretion, that it is advisable to do so. See 49 Fed. Reg. 9352, 9362 (1984). There is no indication in the rules, statement of consideration, or elsewhere that the Commission has delegated this discretion to the licensing boards or the NRC Staff.

In any event, there is no showing of "special circumstances" in this case. As already discussed, the proposed contentions are based on incredible scenarios designed to support a generic challenge to the well-established, safe, wet, high-density storage of spent fuel, and to support a preference for dry cask storage. The NRC, in several documents, has already generically determined that fuel can be safely stored beyond the term of the license in wet or dry storage facilities. For example, in its "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," NUREG-1437, Vol. 1, at xlviii (May 1996), the Commission concluded:

[T]here is ample basis to conclude that continued storage of existing spent fuel and storage of spent fuel generated during the license renewal period can be accomplished safely and without environmental impacts.

This statement necessarily included high-density storage of the type proposed here because the NRC was well aware of the prevalence of such high-density storage at several utility sites when this conclusion was reached.<sup>24</sup> Nothing is demonstrated that would alter this conclusion for Millstone Unit 3. Certainly the NRC was aware of the scenarios such as those offered by Petitioners when it reached these conclusions. Therefore, there are no special circumstances which would now cause the NRC to re-evaluate this conclusion.

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<sup>23</sup> In an analogous context, in 10 C.F.R. § 2.758 the Commission has withheld from Licensing Boards the authority to accept contentions challenging regulations, absent certain "special circumstances." A finding of "special circumstances" must be certified to the Commission for decision. 10 C.F.R. § 2.758(d).

<sup>24</sup> See also 10 C.F.R. § 51.23(a).

Petitioners conclude with a recitation of assertions (Supplemental Petition, at 32-33) which fail to support the claim of “special circumstances.” Petitioners refer to the loss of full core off-load capability after refueling outage (“RFO”) 6 (actually this will occur after RFO 7), but maintaining full core off-load capability is the very reason for the amendment proposed. Petitioners refer to past issues at Millstone regarding full core off-loads, but fail to show how those issues would support the conclusion that the NRC must prepare an EIS to fully evaluate the environmental impacts of the reracking proposal. Petitioners refer to criminal penalties issued to NNECO for past conduct, and to alleged records showing heightened cancer incidences in the vicinity of Millstone. But there is no nexus drawn between these issues and the current proposal. NNECO’s past conduct has no bearing on the adequacy of the NRC’s EA or on whether an EIS is required to be prepared by the NRC. As for the incidence of cancer, no connection has been made to Millstone. Accordingly, these factors do not support a claim of special circumstances which would warrant an EIS.

At bottom, nothing here or elsewhere in the Supplemental Petition supports a request for an EIS, either as a matter of law or discretion. The proposed contention must be denied .

V. CONCLUSION

For reasons set forth above, Petitioners have failed to propose an admissible contention. Accordingly, the Petition should be denied and this proceeding terminated.

Respectfully submitted,

A handwritten signature in black ink that reads "David A. Repka". The signature is written in a cursive style with a long horizontal line extending to the right.

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ATTORNEYS FOR NORTHEAST NUCLEAR  
ENERGY COMPANY

Dated in Washington, D.C.  
this 30th day of November, 1999

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

DOCKETED  
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD '99 DEC -2 P 3:00

In the Matter of: )  
)  
Northeast Nuclear Energy Company )  
)  
(Millstone Nuclear Power Station, )  
Unit No. 3) )

Docket No. 50-423-LA-3

OFFICE OF SECRETARY  
RULING  
ADJUDICATORY FILE

CERTIFICATE OF SERVICE

I hereby certify that copies of "NORTHEAST NUCLEAR ENERGY COMPANY'S ANSWER TO SUPPLEMENTAL PETITION TO INTERVENE" in the above-captioned proceeding, have been served on the following by deposit in the United States mail, first class, this 30th day of November, 1999. In addition, for those parties marked by an asterisk (\*), a copy has been provided this same day by e-mail.

Nancy Burton, Esq.  
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Redding Ridge, CT 06876

Dr. Richard F. Cole\*  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Office of the Secretary  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555  
Attn: Docketing and Service Section  
(original + two copies)

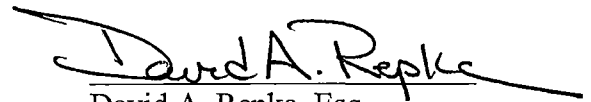
Dr. Charles N. Kelber\*  
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A handwritten signature in black ink, reading "David A. Repka". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

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