

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

Before Administrative Judges:

E. Roy Hawkens, Chairman  
 Dr. Paul B. Abramson  
 Dr. Anthony J. Baratta

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In the Matter of	Docket No. 50-0219-LR
AMERGEN ENERGY COMPANY, LLC	ASLBP No. 06-844-01-LR
(License Renewal for Oyster Creek Nuclear Generating Station)	February 27, 2006

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**MEMORANDUM AND ORDER**

(Denying New Jersey's Request for Hearing and Petition to Intervene,  
and Granting NIRS's Request for Hearing and Petition to Intervene)

Pending before the Board are two Requests for Hearing and Petitions to Intervene filed in response to a September 15, 2005 Notice of Opportunity for Hearing (70 Fed. Reg. 54,585 (Sept. 15, 2005)) concerning an application by AmerGen Energy Company, LLC ("AmerGen") to renew its operating license for the Oyster Creek Nuclear Generating Station ("Oyster Creek") for twenty years beyond the current expiration date of April 9, 2009. One Petition was filed by the New Jersey Department of Environmental Protection [hereinafter referred to as New Jersey], and the other Petition was filed by the Nuclear Information and Resource Service ("NIRS"), Jersey Shore Nuclear Watch, Inc., Grandmothers, Mothers and More for Energy Safety, New Jersey Public Interest Research Group, New Jersey Sierra Club, and New Jersey Environmental Federation [hereinafter referred to collectively as NIRS].<sup>1</sup> AmerGen and the

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<sup>1</sup> See [New Jersey Department of Environmental Protection] Request for Hearing and Petition for Leave to Intervene (Nov. 14, 2005) [hereinafter New Jersey Petition]; [NIRS] Request for Hearing and Petition to Intervene (Nov. 14, 2005) [hereinafter NIRS Petition].

NRC Staff filed Answers opposing the Petitions.<sup>2</sup> NIRS filed a Reply Brief, but New Jersey did not.<sup>3</sup>

Entities who – like New Jersey and NIRS – seek leave to intervene as a party in an adjudicatory proceeding must (1) establish standing, and (2) proffer at least one admissible contention. See 10 C.F.R. § 2.309(a). For the reasons discussed below, we deny New Jersey’s Request for Hearing and Petition to Intervene, because although New Jersey has

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<sup>2</sup> See AmerGen’s Answer Opposing [New Jersey’s] Request for Hearing and Petition to Intervene (Dec. 12, 2005) [hereinafter AmerGen Answer to New Jersey Petition]; AmerGen’s Answer Opposing NIRS et al. Request for Hearing and Petition to Intervene (Dec. 12, 2005) [hereinafter AmerGen Answer to NIRS Petition]; NRC Staff Answer to [New Jersey] Request for Hearing and Petition to Intervene (Dec. 12, 2005) [hereinafter NRC Staff Answer to New Jersey Petition]; NRC Staff Answer to [NIRS] Request for Hearing and Petition to Intervene (Dec. 14, 2005) [hereinafter NRC Staff Answer to NIRS Petition].

<sup>3</sup> See Combined Reply of [NIRS] (Dec. 19, 2005) [hereinafter NIRS Reply]. The participants in this proceeding also filed supplemental briefs pursuant to unpublished orders issued by this Board. On January 17, 2006, NIRS, New Jersey, AmerGen, and the NRC Staff each filed a supplemental brief [hereinafter cited, respectively, as NIRS Supp. Brief, New Jersey First Supp. Brief, AmerGen First Supp. Brief, and NRC Staff First Supp. Brief]. On January 30, 2006, New Jersey, AmerGen, and the NRC Staff each filed a second supplemental brief [hereinafter cited, respectively, as New Jersey Second Supp. Brief, AmerGen Second Supp. Brief, and NRC Staff Second Supp. Brief].

established standing, we conclude that it has failed to proffer an admissible contention.

However, we grant NIRS's Request for Hearing and Petition to Intervene, because we conclude that NIRS has established standing and has proffered an admissible contention.

## **I. STANDING ANALYSIS**

### **A. NEW JERSEY HAS DEMONSTRATED STANDING**

The standing requirements for NRC adjudicatory proceedings derive from the Atomic Energy Act (AEA), which requires the NRC to provide a hearing “upon the request of any person whose interest may be affected by the proceeding” (42 U.S.C. § 2239(a)(1)(A) (2000)). Commission regulations implementing this statutory requirement establish that a State has standing when a proceeding involves a “facility located within [the State’s] boundaries” (10 C.F.R. § 2.309(d)(2)(i)). Thus, when a State advises a Licensing Board that a proceeding involves a facility within its borders, the Licensing Board designated to rule on the petition for leave to intervene “shall not require a further demonstration of standing” (*id.* § 2.309(d)(2)(ii)).

In the instant case, New Jersey avers that “[t]he Oyster Creek nuclear generating station is located in Lacey Township, New Jersey” (New Jersey Petition at 1). As the NRC Staff and AmerGen both concede (NRC Staff Answer to New Jersey Petition at 2-3; AmerGen Answer to New Jersey Petition at 3), the regulations require no further showing of standing from New Jersey.<sup>4</sup>

### **B. NIRS HAS DEMONSTRATED REPRESENTATIONAL STANDING**

An organization that wishes to establish standing may do so in one of two ways. First, it may demonstrate organizational standing – that is, it may show that its own interests as an organization will be harmed by the proceeding. Alternatively, it may demonstrate representa-

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<sup>4</sup> No one disputes that the New Jersey Department of Environmental Protection, which submitted the Petition, is a New Jersey agency that stands in the shoes of the State for purposes of this proceeding. See New Jersey Petition at 1.

tional standing – that is, it may show that the interests of at least one of its members will be harmed by the proceeding. See Yankee Atomic Elec. Co. (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 195 (1998). NIRS asserts that it satisfies the requirements for representational standing (NIRS Petition at 1-3; NIRS Reply at 2-4). We agree.<sup>5</sup>

For an organization to establish representational standing, the organization must: (1) show that at least one of its members may be affected by the licensing action and, accordingly, would have standing to sue in his or her own right; (2) identify that member by name and address; and (3) show that the organization is authorized to request a hearing on behalf of that member. See GPU Nuclear, Inc. (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 202 (2000). As shown below, each of the six organizations (which we refer to collectively as NIRS) satisfies these three requirements.

First, each organization shows that at least one member would have individual standing to sue in his or her own right. Ordinarily, for an individual to establish standing, he or she must show injury in fact that can fairly be traced to the challenged action and that is likely to be redressed by a favorable decision (Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999)). However, it has long been established that an individual satisfies these requirements by showing that his or her residence is within the geographical area that might be affected by an accidental release of fission products. This “proximity approach” to standing presumes that the elements of standing are satisfied if an

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<sup>5</sup> The NRC Staff agrees that NIRS has representational standing (NRC Staff Answer to NIRS Petition at 7-8). AmerGen disputes NIRS’s standing (AmerGen Answer to NIRS Petition at 8-12).

individual lives within the zone of possible harm from the source of radioactivity. See Virginia Elec. and Power Co. (North Anna Nuclear Power Station, Units 1 & 2), ALAB-522, 9 NRC 54, 56 (1979) (“close proximity [to a facility] has always been deemed to be enough, standing alone, to establish the requisite interest” to confer standing); accord, e.g., Armed Forces Radiobiology Research Institute (Cobalt-60 Storage Facility), ALAB-682, 16 NRC 150, 153-54 (1982); Gulf States Utilities Co. (River Bend Station, Units 1 & 2), ALAB-183, 7 AEC 222, 224 & n.5 (1974).

The NRC Staff correctly states (NRC Staff Answer to NIRS Petition at 8) that the Commission’s “‘rule of thumb’ in reactor licensing proceedings is that persons who reside . . . within a 50-mile radius . . . of [a reactor plant] are presumed to have standing.” See Sequoyah Fuels Corp. (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 n.22 (1994). In the instant case, each organization has provided a declaration from at least one member averring that he or she resides within 50 miles of Oyster Creek. See NIRS Petition, Declarations. Accordingly, consistent with the Commission’s 50-mile proximity rule for reactor plants, each organization has satisfied the first representational standing requirement by showing that at least one member has individual standing.

The six petitioning organizations also satisfy the second representational standing requirement, because each of the above-mentioned declarations identifies the relevant member’s name, organizational affiliation, and address. See NIRS Petition, Declarations.

Finally, the petitioning organizations satisfy the third representational standing requirement, because in each of the above-mentioned declarations, the member authorizes the organization to request a hearing on her or his behalf. Specifically, each declaration states (NIRS Petition, Declarations):

I believe that the application for a license extension of the Oyster Creek nuclear generating station is sufficiently inadequate as written and my interests will not be adequately represented without this action to intervene and without the opportunity of [NIRS] to participate as a full party in this proceeding on my behalf.

Thus, pursuant to settled Commission doctrine, each of the six petitioning organizations appears to have demonstrated representational standing.

AmerGen nevertheless asserts that the petitioners have not established representational standing, because “there is no recognized proximity presumption applicable to license renewal cases,” and NIRS has “offered [no] basis for [its] apparent assumption that the appropriate radius for such a presumption in this proceeding is 50 miles” (AmerGen Answer to NIRS Petition at 10). We disagree.

First, contrary to AmerGen’s suggestion, the proximity presumption rule has been applied previously by Licensing Boards in license renewal cases. See Florida Power & Light Co. (Turkey Point Nuclear Generating Plant, Units 3 & 4), LBP-01-06, 53 NRC 138, 148-50, aff’d on other grounds, CLI-01-17, 54 NRC 3, 26 n.20 (2001); Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, & 3), LBP-98-33, 48 NRC 381, 385 n.1 (1998), aff’d on other grounds, CLI-99-11, 49 NRC 328, 333 n.2 (1999).

Nor is there merit to AmerGen’s assertion that there is no basis for establishing a 50-mile radius for the proximity presumption rule in a reactor license renewal case. The Commission has stated that the “determination of how proximate a petitioner must live . . . to a source of radioactivity depends on the danger posed by the source at issue” (Sequoyah Fuels Corp., CLI-94-12, 40 NRC at 75 n.22). The radioactive “source” posing the danger in a reactor license renewal case is the identical “source” giving rise to the 50-mile proximity presumption rule for reactor construction permit and operating license proceedings. The Commission has endorsed a 50-mile rule in the latter context (ibid.). We agree with NIRS and the NRC Staff that the same 50-mile presumption should apply in reactor license renewal cases. See Turkey Point, LBP-01-06, 53 NRC at 148-49 (in reactor license renewal cases, “the distance from the significant source of radioactivity that is presumed to affect the Petitioners logically must be the

same 50-mile distance that forms the current basis for the proximity presumption for reactor construction permit and initial operating license proceedings”); accord Oconee, LBP-98-33, 48 NRC at 385 n.1.

## **II. CONTENTION ANALYSIS**

### **A. LEGAL STANDARDS GOVERNING THE ADMISSION OF CONTENTIONS**

To gain party status in an adjudicative proceeding, a petitioner must – in addition to demonstrating standing – submit at least one contention that satisfies the admissibility requirements of 10 C.F.R. § 2.309(f). See 10 C.F.R. § 2.309(a). For a contention to be admissible, the petitioner must satisfy the following six regulatory requirements (10 C.F.R. § 2.309(f)(1)):

- (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 . . . 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 . . . 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 . . . 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.

These contention requirements are “strict by design” (Dominion Nuclear Conn., Inc. (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001)). A contention that

fails to comply with any of these requirements will not be admitted for litigation (Private Fuel Storage, CLI-99-10, 49 NRC at 325; Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2221 (Jan. 14, 2004)).

Moreover, the scope of a license renewal proceeding is cabined by 10 C.F.R. Part 54. See Turkey Point, CLI-01-17, 54 NRC at 6-13; Nuclear Power Plant License Renewal, 60 Fed. Reg. 22,461 (May 8, 1995). In particular, issues relating to a plant's "current licensing basis" are ordinarily beyond the scope of a license renewal review, because "those issues already [are] monitored, reviewed, and commonly resolved as needed by ongoing regulatory oversight" (CLI-01-17, 54 NRC at 8). The term "current licensing basis" is defined as (10 C.F.R. § 54.3(a)):

the set of NRC requirements applicable to a specific plant and a licensee's written commitments for ensuring compliance with and operation within applicable NRC requirements and the plant-specific design basis (including all modifications and additions to such commitments over the life of the license) that are docketed and in effect. The [current licensing basis] includes regulations contained in 10 C.F.R. Parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 54, 55, 70, 72, 73, 100 and appendices thereto; orders; license conditions; exemptions and technical specifications. It also includes the plant-specific design-basis information defined in 10 C.F.R. 50.2 as documented in the most recent final safety analysis report (FSAR) . . . and the licensee's commitments remaining in effect that were made in docketed licensing correspondence such as licensee responses to NRC bulletins, generic letters, and enforcement actions, as well as licensee commitments documented in NRC safety evaluations or licensee event reports.

The scope of the NRC's public health and safety review in the context of a license renewal proceeding ordinarily is limited to "a review of the plant structures and components that will require an *aging* management review for the period of extended operation and the plant's systems, structures, and components that are subject to an evaluation of time-limited *aging* analyses" (Duke Energy Corp. (McGuire Nuclear Station, Units 1 & 2), CLI-02-26, 56 NRC 358, 363-64 (2002) (quoting CLI-01-20, 54 NRC 211, 212 (2001)). See also Turkey Point, CLI-01-17, 54 NRC at 10 (license renewal reviews focus "on plant systems, structures, and

components for which current [regulatory] activities and requirements may not be sufficient to manage the effects of aging in the period of extended operation”) (emphasis omitted) (quoting 60 Fed. Reg. at 22,469).

The scope of the NRC’s environmental review in the context of a license renewal proceeding is limited by 10 C.F.R. Part 51 and by the NRC’s “Generic Environmental Impact Statement for License Renewal of Nuclear Plants” (NUREG-1437 (May 1996) [hereinafter NUREG-1437]). The Commission has determined that a number of environmental issues that might otherwise be relevant to license renewal shall be resolved generically for all plants, and such issues – which are classified in 10 C.F.R. Part 51, Subpart A, Appendix B as “Category 1” issues – are normally “beyond the scope of a license renewal hearing” (Turkey Point, CLI-01-17, 54 NRC at 15; see 10 C.F.R. § 51.53(c)(3)(i)). The remaining issues in Appendix B, which are designated as “Category 2” issues, are issues for which (1) the applicant must make a plant-specific analysis of environmental impacts in its Environmental Report (10 C.F.R. § 51.53(c)(3)(ii)), and (2) the NRC Staff must prepare a supplemental Environmental Impact Statement (id. § 51.95(c)). Contentions implicating Category 2 issues ordinarily are deemed to be within the scope of license renewal proceedings. See Turkey Point, CLI-01-17, 54 NRC at 11-13.

**B. NEW JERSEY’S CONTENTIONS ARE NOT ADMITTED**

**1. New Jersey’s Contention Regarding Severe Accident Mitigation**

**Altern  
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Is Not  
Admis  
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Pursuant to the requirements in 10 C.F.R. Part 51 – which embodies the Commission regulations implementing section 102(2) of the National Environmental Policy Act (“NEPA”) – AmerGen’s License Renewal Application provided an analysis of severe accident mitigation alternatives (“SAMAs”) for Oyster Creek (10 C.F.R. § 51.53(c)(3)(ii)(L)).<sup>6</sup> See AmerGen Answer to New Jersey Petition at 12 (explaining that Appendix F to AmerGen’s Environmental Report contains a 280-page, site-specific SAMA analysis that identifies accident-initiating events and considers 138 mitigating alternatives).

New Jersey contends that AmerGen’s SAMA analysis is deficient, because (New Jersey Petition at 2-5): (1) it fails to consider the plant’s vulnerability to aircraft attacks; (2) it fails to consider the plant’s spent fuel pool vulnerability; and (3) it is incomplete because it is based on interim measures (rather than long-term measures) that Oyster Creek has implemented to improve the site’s emergency response capabilities.

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<sup>6</sup> A SAMA review is a cost-benefit assessment that is conducted to ensure that “plant changes – in hardware, procedures, or training – that have a potential for significantly improving severe accident safety performance are identified and assessed. If the cost of implementing a particular SAMA is greater than its associated benefit, the SAMA would not be considered cost-beneficial” (Duke Energy Corp. (McGuire Nuclear Station, Units 1 & 2), CLI-02-17, 56 NRC 1, 5 (2002)).

For the reasons discussed below, we agree with AmerGen and the NRC Staff that New Jersey's SAMA-related contention is not admissible. See AmerGen Answer to New Jersey Petition at 11-18; NRC Staff Answer to New Jersey Petition at 6-14.<sup>7</sup>

a. **Aircraft Attacks** New Jersey asserts that the SAMA analysis for Oyster Creek is deficient because it improperly fails to consider an "aircraft attack" scenario (New Jersey Petition at 4). We reject this SAMA-related contention as outside the scope of (10 C.F.R. § 2.309(f)(1)(iii)), and not material to (id. § 2.309(f)(1)(iv)), this proceeding. See AmerGen Answer to New Jersey Petition at 12-14; NRC Staff Answer to New Jersey Petition at 6-10.

The Commission repeatedly and unequivocally has ruled that the effects of terrorist attacks need not be considered under NEPA. See, e.g., Dominion Nuclear Conn., Inc. (Millstone Power Station, Unit 3), CLI-02-27, 56 NRC 367 (2002); Duke Cogema Stone & Webster (Savannah River Mixed Oxide Fuel Fabrication Facility), CLI-02-24, 56 NRC 335 (2002). As the Commission explained in Private Fuel Storage, L.L.C. (Independent Spent Fuel

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<sup>7</sup> New Jersey failed to submit a Reply Brief. Accordingly, it is foreclosed from challenging the assertions advanced by AmerGen and the NRC Staff in their Answers, unless it put such assertions in issue in its Petition or Supplemental Briefs. See Blackwell v. Cole Taylor Bank, 152 F.3d 666, 673 (7th Cir. 1998) ("silence about facts . . . constitute[s] a waiver of the specific factual contentions made by the opposing party in a brief filed earlier"); Consumers Power Co. (Midland Plant, Units 1 & 2), ALAB-123, 6 AEC 331, 334-35 (1973) (Licensing Board is authorized to accept assertions of the applicant and Staff that have not been controverted by a party).

Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002) (quotation marks and footnotes omitted):

Courts have excluded [from NEPA-mandated review] impacts with either a low probability of occurrence, or where the link between the agency action and the claimed impact is too attenuated to find the proposed federal action to be the proximate cause. . . . Here, the possibility of a terrorist attack . . . is speculative and simply too far removed from the natural or expected consequences of agency action to require a study under NEPA.

Accord Duke Energy Corp., CLI-02-26, 56 NRC at 365 (“NEPA imposes no legal duty on the NRC to consider intentional malevolent acts, such as the [September 11, 2001 terrorist attacks], on a case-by-case basis in conjunction with commercial power reactor license renewal applications.”).

Accordingly, New Jersey’s contention that Oyster Creek’s SAMA analysis must address the impacts of aircraft attacks is “beyond the scope of, not ‘material’ to, and inadmissible in, [this] license renewal proceeding” (Duke Energy Corp., CLI-02-26, 56 NRC at 364).<sup>8</sup>

**b. Spent Fuel Pool Vulnerability** New Jersey asserts that the SAMA analysis for Oyster Creek is deficient because it fails to consider the vulnerability of the spent

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<sup>8</sup> We emphasize that the Commission scrupulously examines terrorist-related security issues outside the NEPA context. See, e.g., Private Fuel Storage, CLI-02-25, 56 NRC at 343 (Commission stresses its “determination, in the wake of the horrific September 11th terrorist attacks, to strengthen security at [NRC-regulated] facilities. . . . [Our] review process is ongoing and cumulative. It already has resulted in a number of security-related actions to address terrorism threats at both active and defunct nuclear facilities.”). Nevertheless, for the reasons explained above in text, terrorist acts are outside the required purview of NEPA, and security-related issues related to such acts “are simply not among the aging-related questions at stake in a license renewal proceeding” (Dominion Nuclear Conn., Inc. (Millstone Nuclear Power Station, Units 2 & 3), CLI-04-36, 60 NRC 631, 638 (2004)).

In the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, NUREG-1437, the NRC Staff performed a discretionary analysis of terrorist acts in connection with license renewal, and it concluded that the core damage and radiological release from such acts would be no worse than the damage and release to be expected from internally initiated events. See Duke Energy Corp., CLI-02-26, 56 NRC at 365 n.24; see also NUREG-1437, Vol. 1, at p. 5-18.

fuel pool (New Jersey Petition at 4-5). For two reasons, we reject this contention as outside the scope of this proceeding (10 C.F.R. § 2.309(f)(1)(iii)). See AmerGen Answer to New Jersey Petition at 14-15; NRC Staff Answer to New Jersey Petition at 10-13.

First, to the extent that New Jersey challenges AmerGen's SAMA analysis for failing to consider the vulnerability of the spent fuel pool to attacks, the contention is – for the reasons discussed supra Part II.B.1.a – “beyond the scope of, not ‘material’ to, and inadmissible in, [this] license renewal proceeding” (Duke Energy Corp., CLI-02-26, 56 NRC at 364).

Second, to the extent that New Jersey challenges AmerGen's SAMA analysis for failing to “look at design basis accidents for spent fuel pools” (New Jersey Petition at 4-5), the contention is likewise inadmissible. As discussed supra pp. 8-9, a number of environmental issues – identified as Category 1 issues – have been resolved generically for all plants, and SAMA-related contentions based on such issues are beyond the scope of a license renewal hearing (10 C.F.R. § 51.53(c)(3)(i)). The regulations designate “[o]n-site spent fuel” as a Category 1 issue, stating that the “expected increase in the volume of spent fuel from an additional 20 years of operation can be safely accommodated on site with small environmental effects through dry or pool storage at all plants if a permanent repository or monitored retrievable storage is not available” (10 C.F.R. Part 51, Subpt. A, App. B). Because on-site spent fuel is a Category 1 issue, New Jersey's contention challenging AmerGen's SAMA analysis for failing to consider Oyster Creek's spent fuel pool is beyond the scope of this proceeding and, thus, not admissible. See Turkey Point, CLI-01-17, 54 NRC at 15, 20-24; Oconee, CLI-99-11, 49 NRC at 343-44.<sup>9</sup>

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<sup>9</sup> New Jersey opines that spent fuel accidents should be considered in the SAMA analysis, because such accidents “are part of the licensee's and state emergency preparedness programs” (New Jersey Petition at 5). But, as the NRC Staff correctly responds, “emergency preparedness programs are evaluated on a continuing basis and, therefore, are outside the scope of license renewal” (NRC Staff Answer to New Jersey Petition at 10). Moreover, New

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Jersey has recourse if it wishes to challenge, or raise concerns about, Oyster Creek's emergency preparedness program relating to spent fuel accidents. Namely, it may petition for enforcement action (10 C.F.R. § 2.206), or it may petition for rulemaking (id. § 2.802).

The NRC Staff erroneously states (NRC Staff Answer to New Jersey Petition at 11) that New Jersey's contention regarding spent fuel pool vulnerability appears to raise an impermissible attack on the Commission's Waste Confidence Rule, in which the Commission found that, if necessary, "spent fuel generated in any reactor can be stored [onsite] safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation" (10 C.F.R. § 51.23(a)). As the Staff should know, this argument is precluded by the decision in Turkey Point, where the Staff made an identical argument, and the Commission squarely rejected it (CLI-01-17, 54 NRC at 23 n.14). Cf. 10 C.F.R. § 2.323(d) ("[a]ll parties are obligated, in their filings . . . , to ensure that their arguments . . . are supported by . . . legal authority").

New Jersey also makes the corollary request that State officials with “sufficient clearance” be granted access to non-public security information related to Oyster Creek’s “ability to withstand aircraft attacks, as well as the specific vulnerability of the spent fuel pool” (New Jersey Petition at 6). However, as we have concluded (supra Parts II.B.1.a & b), New Jersey’s SAMA-related contention is not admissible whether it is based on aircraft attacks or the spent fuel pool. That conclusion would not change if New Jersey were granted access to the requested information. Thus, even assuming arguendo that New Jersey had complied with the Commission’s procedural requirements for obtaining non-public information (but see 70 Fed. Reg. at 54,586 n.1) (directing petitioners to contact applicant for access to non-public information), we conclude that – for purposes of this proceeding – New Jersey has not demonstrated a need for the requested information.

c.     **Long-Term Compensatory Measures**     In 10 C.F.R. § 73.1(a)(1)(i), the design basis threat (“DBT”) for which a facility must have appropriate security measures includes a “violent external assault, attack by stealth, or deceptive actions, of several persons” who are well-trained, possess explosives and sophisticated weapons, and utilize a four-wheel drive vehicle. New Jersey observes that AmerGen – in response to a revised DBT imposed by the Commission following the terrorist attacks of September 11, 2001 – has implemented “interim compensatory measures” (New Jersey Petition at 4-5). Before Oyster Creek may operate under a renewed license, asserts New Jersey, AmerGen must implement “long-term measures rather than interim compensatory measures . . . to ensure that all SAMA have been evaluated” (id. at 5). We reject this aspect of New Jersey’s SAMA-related contention, because it is neither within the scope of, nor material to, this proceeding (10 C.F.R. § 2.309(f)(1)(iii) & (iv)).

As AmerGen acknowledges (AmerGen Answer to New Jersey Petition at 15), in 2003, the Commission issued orders requiring nuclear power plant licensees, including AmerGen, to implement interim compensatory security measures to address the revised DBT. See All Operating Power Reactor Licensees; Order, Modifying License (Effective Immediately), 68 Fed. Reg. 24,517 (May 7, 2003). In 2005, the Commission initiated a rulemaking to codify the security requirements pertaining to the revised DBT. See Design Basis Threat, 70 Fed. Reg. 67,380 (Nov. 7, 2005). Among other things, the proposed rule would “make generically applicable the security requirements previously imposed by the Commission’s [prior] DBT orders” (70 Fed. Reg. at 67,380).

Agencies generally are free to exercise their discretion in determining whether to formulate policy through rulemaking or adjudication (Heckler v. Campbell, 461 U.S. 458, 467 (1983)). In the instant case, the Commission has chosen to address security requirements for the revised DBT generically through rulemaking, rather than on a license-by-license basis. That rulemaking procedure remains ongoing. See 70 Fed. Reg. at 67,380 (directing submission of public comments to proposed rule by January 23, 2006).

Where, as here, the Commission has initiated rulemaking proceedings that apply to the facility in question and that directly implicate a proposed contention, a Board ordinarily should refrain from admitting that contention. See Oconee, CLI-99-11, 49 NRC at 345 (Licensing Boards “should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission”) (quoting Potomac Elec. Power Co. (Douglas Point Nuclear Generating Station, Units 1 & 2), ALAB-218, 8 AEC 79, 85 (1974)). Because New Jersey has presented no reason for departing from this precept, we

conclude that its contention is outside the scope of, not material to, and thus inadmissible in this proceeding.<sup>10</sup>

The NRC Staff also notes that New Jersey fails adequately to explain its assertion that “[l]ong-term measures rather than interim compensatory measures must be in place’ in order to ‘ensure that all SAMA have been evaluated” (NRC Staff Answer to New Jersey Petition at 7 n.8) (quoting New Jersey Petition at 5). In particular, argues the Staff, New Jersey’s claim (1) is vague and ill-defined, (2) fails to specify a NEPA requirement in support of its contention, and (3) fails to identify any section of the License Renewal Application in support of its contention (NRC Staff Answer to New Jersey Petition at 6-7). We agree and thus conclude that New Jersey’s contention, in addition to being outside the scope of this proceeding and lacking materiality, is “lacking proper basis, specificity, . . . and support, and does not establish a genuine dispute on a material issue of law or fact” (*id.* at 7 n.8).

**2. New Jersey’s Contention Regarding Metal Fatigue Is Not Admissible**

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<sup>10</sup> Any attempt by New Jersey to challenge the Commission’s discretionary decision to use rulemaking to codify security requirements pertaining to the revised DBT would be beyond the scope of this proceeding in any event. If New Jersey wishes to challenge particular aspects of the proposed rule, its “remedy lies in the rulemaking process, not in this adjudication” (Ocone, CLI-99-11, 49 NRC at 345-46).

In its Petition (New Jersey Petition at 6-9), New Jersey attacks AmerGen's use of a cumulative usage factor ("CUF")<sup>11</sup> of 1.0 in its License Renewal Application for evaluating the metal fatigue of reactor coolant pressure boundary components at Oyster Creek during the renewal period. New Jersey contends that, pursuant to 10 C.F.R. § 50.55a(c)(4), AmerGen must use the more restrictive CUF of 0.8, as "specified by the [standards in the American Society of Mechanical Engineers Boiler and Pressure Vessel Code ("ASME Code")] that were required by Commission regulations at the time of issuance of the construction permit" (New Jersey Petition at 6). Moreover, contends New Jersey, AmerGen's use of a CUF of 1.0 places Oyster Creek outside its current licensing basis ("CLB", which is defined supra pp. 7-8) and in violation of 10 C.F.R. § 54.21(a)(3), because it fails to "demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation" (New Jersey Petition at 6 ) (quoting 10 C.F.R. § 54.21(a)(3)).

AmerGen and the NRC Staff argue that New Jersey's contention misapprehends the governing regulations and, accordingly, is inadmissible for lack of supporting law and facts (10 C.F.R. § 2.309(f)(1)(v)), and for failure to show the existence of a genuine dispute on a material issue (id. § 2.309(f)(1)(vi)). See AmerGen Answer to New Jersey Petition at 18-23; NRC Staff Answer to New Jersey Petition at 14-17; see also AmerGen Second Supp. Brief at 2-5; NRC Staff Second Supp. Brief at 1-5. We agree that this contention is not admissible.

As relevant here, standards for the maintenance of components of the reactor coolant pressure boundary for boiling water-cooled nuclear power facilities, such as Oyster Creek, are governed by 10 C.F.R. § 50.55a(c). Section 50.55a(c)(1) provides that these components must

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<sup>11</sup> The CUF assists in describing the level of a component's cumulative fatigue damage – that is, damage caused by the repeated stresses of operating load cycles during the component's operating life. See AmerGen Answer to New Jersey Petition at 18 n.9.

meet the requirements for Class 1 components in Section III of the current ASME Code. However, section 50.55a(c)(4) states that for operating plants whose construction permits were issued prior to May 14, 1984, the applicable ASME Code requirements are those “for such components at the time of issuance of the construction permit” (10 C.F.R. § 50.55a(c)(4)).

New Jersey argues that AmerGen’s License Renewal Application – which provides for a CUF of 1.0 – violates section 50.55a(c)(4), because Oyster Creek’s construction permit was issued prior to May 14, 1984,<sup>12</sup> and AmerGen must therefore evaluate the fatigue level of the reactor coolant pressure boundary components throughout the period of extended operation using the more restrictive CUF of 0.8, which was the standard required by the ASME Code in effect at the time Oyster Creek’s permit was issued (New Jersey Petition at 6). We reject this argument. First, it appears that New Jersey has abandoned this argument, because in a supplemental brief, it explicitly acknowledged that 10 C.F.R. § 50.55a “provide[s] AmerGen with the opportunity to update” its CUF from 0.8 to 1.0 (New Jersey Second Supp. Brief at 4). In any event, even if New Jersey had not elected to abandon this argument, we would conclude that it lacks merit, because section 50.55a(c)(4) does *not* impose an inexorable requirement that AmerGen forever use the standards embodied in the ASME Code in effect at the time its construction permit was issued. Rather, the regulations allow an operating plant in Oyster Creek’s situation to choose whether to use the standards in the original ASME Code or to voluntarily update to a later permissible version. As the Commission explained: “For operating plants, § 50.55a permits licensees to use the original construction code during the operational phase or voluntarily update to a later version which has been endorsed by 10 C.F.R. § 50.55a” (Industry Codes and Standards; Amended Requirements, 64 Fed. Reg. 51,370, 51,381 (Sept. 22, 1999)).

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<sup>12</sup> Oyster Creek’s construction permit was issued in December 1964. See AmerGen Answer to New Jersey Petition at 18.

The regulations thus provide Oyster Creek with the option of applying the original ASME Code or voluntarily updating to a later version of the ASME Code that has been endorsed by section 50.55a.

Although AmerGen currently uses a CUF of 0.8 for Oyster Creek's reactor coolant pressure boundary components (AmerGen Answer to New Jersey Petition at 22-23), AmerGen indicated in its License Renewal Application that it will revise its CLB to reflect a CUF of 1.0 (AmerGen Answer to New Jersey Petition, Exh. 1, Letter from C.N. Swenson, Oyster Creek Generating Station, to U.S. Nuclear Regulatory Commission (Dec. 9, 2005)). Utilizing a CUF of 1.0 is permitted under the current, relevant portion of the ASME Code, which states that "[t]he reactor coolant system or primary pressure boundary component is acceptable for continued service throughout the evaluation period if the CUF . . . is less than or equal to 1.0" (AmerGen Answer to New Jersey Petition, Exh. 3, ASME Code, Section XI, Appendix L, ¶ L-2220). Moreover, that portion of the Code is specifically referenced in, and endorsed by, 10 C.F.R. § 50.55a(g)(4). See also 64 Fed. Reg. at 51,386 (Commission expresses approval of Appendix L of ASME Code for "demonstrat[ing] that a component is acceptable with regard to cumulative fatigue effects"). Thus, New Jersey's contention that AmerGen is proscribed from using the updated, less restrictive CUF of 1.0 during the period of extended operation is inadmissible, because – aside from being abandoned – it is wholly unsupported as a matter of law or fact, and it fails to show the existence of a genuine dispute regarding a material issue.<sup>13</sup>

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<sup>13</sup> New Jersey's contention is also inadmissible for lack of an adequate basis (10 C.F.R. § 2.309(f)(1)(ii)).

New Jersey nevertheless contends (New Jersey Petition at 7) that the CUF in Oyster Creek's now-effective CLB is 0.8, and AmerGen's use of a CUF of 1.0 in its License Renewal Application allegedly places Oyster Creek outside its present CLB, in violation of Commission regulations which require AmerGen's application to "demonstrate that . . . the intended function(s) [of the relevant components] will be maintained consistent with the CLB for the period of extended operation" (10 C.F.R. § 54.21(a)(3)). But as AmerGen and the NRC Staff observe (AmerGen Second Supp. Brief at 2; NRC Staff Second Supp. Brief at 2), section 54.21(a)(3) does not require AmerGen's application to use the CUF in its now-effective CLB during extended operations; it simply requires AmerGen to "demonstrate" that the intended functions of the relevant components will be maintained consistent with the "CLB for the period of extended operation" (10 C.F.R. § 54.21(a)(3)). AmerGen made such a demonstration in its application and related correspondence when, in December 2005, it docketed with the NRC Staff its commitment to "revise [prior to the period of extended operation] the Oyster Creek [Updated Final Safety Analysis Report] to update the [CLB] to reflect that a [CUF] of 1.0 will be used in fatigue analysis for reactor coolant pressure boundary components" (AmerGen Exh. 1, at 3).<sup>14</sup> We conclude that, as a matter of law and fact, AmerGen's docketed commitment satisfies its regulatory obligation under section 54.21(a)(3). Accordingly, New Jersey's contention that AmerGen's License Renewal Application violates section 54.21(a)(3) is inadmissible, because it

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<sup>14</sup> Such changes to a facility's CLB during the license renewal review process are expressly permitted by Commission regulations (10 C.F.R. § 54.21(b)). We decline New Jersey's invitation to impute to AmerGen an intention to act in derogation of its formal commitment to the NRC Staff. See Pacific Gas and Elec. Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2), CLI-03-02, 57 NRC 19, 29 (2003) (Commission has "long declined to assume that licensees will refuse to meet their obligations"). In any event, because AmerGen's license-related activities will be subject to the NRC Staff's continuing regulatory oversight and enforcement authority, New Jersey's concerns are, as a practical matter, misplaced.

is unsupported as a matter of law or fact (10 C.F.R. § 2.309(f)(1)(v)), and fails to show the existence of a genuine dispute regarding a material issue (id. § 2.309(f)(1)(vi)).<sup>15</sup>

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<sup>15</sup> AmerGen's License Renewal Application treats metal fatigue of the reactor pressure boundary components as a time-limited aging analysis ("TLAA") (AmerGen Second Supp. Brief at 2). Applicants must demonstrate that the TLAA's remain valid or have been projected for the period of extended operation, or that the "effects of aging on the intended function(s) will be adequately managed for the period of extended operation" (10 C.F.R. § 54.21(c)(1)). AmerGen represents, and the NRC Staff agrees, that the analyses for Oyster Creek's metal fatigue are in compliance with section 54.21(c)(1) (AmerGen Second Supp. Brief at 2-3; NRC Staff Second Supp. Brief at 4). New Jersey's failure to controvert those representations buttresses our conclusion that its contention is inadmissible under section 2.309(f)(1)(v) and (vi).

**3. New Jersey's Contention Regarding The Combustion Turbines Is Not Admissible**

Pursuant to 10 C.F.R. § 50.63, AmerGen must have an alternate source of alternating current ("AC") power for Oyster Creek in the event of a station blackout (SBO). AmerGen relies on the Forked River combustion turbines (FRCTs) to satisfy this regulatory requirement. Although the FRCTs are located on AmerGen property, they are owned, operated, and maintained by another company, First Energy, via an Interconnection Agreement between the two companies. New Jersey argues that the contractual "arrangement with First Energy proposed in the [License Renewal Application] does not demonstrate that AmerGen will ensure that the [FRCTs] will continue to perform their intended function for the period of extended operation" (New Jersey Petition at 10). Specifically, New Jersey contends that AmerGen's arrangement improperly fails to assure that (*id.* at 9): (1) First Energy will continue to operate the FRCTs during the extended period of operation; (2) the FRCTs will be maintained, inspected, and tested in accordance with AmerGen's aging management plan; and (3) all deficiencies encountered by First Energy in the course of operating, maintaining, and testing the FRCTs will be entered into a corrective action program that satisfies the quality assurance requirements of 10 C.F.R. Part 50, Appendix B.

For the reasons discussed below, we agree with AmerGen and the NRC Staff that New Jersey's contention relating to AmerGen's FRCTs is inadmissible. See AmerGen Answer to New Jersey Petition at 23-31; NRC Staff Answer to New Jersey Petition at 19-21. See also AmerGen First Supp. Brief at 9-12; NRC Staff First Supp. Brief at 8-10.

**a. Continued Operation of the FRCTs** First, New Jersey asserts that the Interconnection Agreement between AmerGen and First Energy will not ensure continued operation of the FRCTs during the renewal period. We reject this as a basis for New Jersey's

contention, because New Jersey fails to provide any facts or expert opinions in support of its assertion (10 C.F.R. § 2.309(f)(1)(v)).

The NRC Staff approved the Interconnection Agreement, concluding that “AmerGen would be in compliance with the SBO requirements” (AmerGen Answer to New Jersey Petition at 26) (citing Memorandum from Suzanne C. Black, Office of Nuclear Reactor Regulation to A. Randolph Blough, Division of Reactor Projects, Region I (Nov. 15, 1999)). New Jersey does not contend that contractual agreements (such as the Interconnection Agreement) are prohibited by NRC policy or regulations.<sup>16</sup> Nor does New Jersey challenge the NRC Staff’s conclusion that AmerGen’s contractual arrangement with First Energy satisfies the SBO requirements. Rather, New Jersey speculates – without any factual or expert support – that First Energy will not fulfill its obligations under the Interconnection Agreement to operate the FRCTs during the extended period of operation, thereby causing AmerGen to be in violation of its regulatory obligations.

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<sup>16</sup> As AmerGen states, not only does New Jersey fail to cite any “regulatory requirement that prohibits a licensee from relying on another entity to implement all or portions of an aging management program,” it also ignores that “NRC license renewal guidance recognizes the adequacy of aging management programs performed by others” (AmerGen Answer to New Jersey Petition at 27) (citing NUREG-1801 (Sept. 2005), NUREG-1723 (Mar. 2000), and NUREG-1769 (Feb. 2003)). The NRC Staff confirms that the substantive obligations of aging management programs may “be met through contracted services” (NRC Staff First Supp. Brief at 9).

It is well established that a contention will be ruled inadmissible where the petitioner has offered “only ‘bare assertions and speculation’” (Fansteel, Inc. (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003) (quoting GPU Nuclear, Inc. (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)). It is equally well established that, absent evidence to the contrary, the Commission will not “assume that licensees will contravene our regulations” (GPU Nuclear, Inc., CLI-00-06, 51 NRC at 207). In disregard of both principles, New Jersey asks this Board to admit a contention that is unsupported by facts or expert opinion, and that is rooted in the baseless assumption that AmerGen will violate Commission regulations. This we will not do.<sup>17</sup>

**b. Aging Management of the FRCTs** New Jersey also asserts that the Interconnection Agreement is inadequate to assure First Energy will comply with the terms of AmerGen’s aging management plan. In particular, New Jersey challenges AmerGen’s reliance on First Energy to “manage and perform this work with little opportunity for AmerGen to oversee any of it” (New Jersey Petition at 9). This contention is inadmissible on three grounds: (1) it is unsupported by facts or expert opinions (10 C.F.R. § 2.309(f)(1)(v)); (2) it lacks an adequate basis (id. § 2.309(f)(1)(ii)); and (3) it fails to show a genuine issue of disputed material fact or law (id. § 2.309(f)(1)(vi)).

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<sup>17</sup> To the extent New Jersey attacks AmerGen’s use of the Interconnection Agreement as part of Oyster Creek’s current licensing basis, such a challenge is outside the scope of this proceeding (10 C.F.R. § 2.309(f)(1)(iii)), which is limited to issues relating to the aging of plant systems, structures, or components. See AmerGen Answer to New Jersey Petition at 26-27; NRC Staff Answer to New Jersey Petition at 20.

First, AmerGen submitted an aging management plan for the FRCTs with its License Renewal Application as well as in its response to the NRC Staff's Request for Additional Information (AmerGen Answer to New Jersey Petition at 27; NRC Staff Answer to New Jersey Petition at 21). AmerGen states that the terms of the Interconnection Agreement afford it "sufficient opportunity to ensure that First Energy performs its activities, both during the current term and continuing into the extended term of operation" (AmerGen Answer to New Jersey Petition at 27). The NRC Staff confirms that AmerGen's aging management plan "will ensure that the FRCTs are adequately managed for the period of extended operation" (NRC Staff Answer to New Jersey Petition at 21). New Jersey does not dispute AmerGen's representation that it has ample opportunity under the Interconnection Agreement to oversee First Energy's activities regarding the FRCTs. Nor does New Jersey dispute the NRC Staff's representation that AmerGen's aging management plan will ensure the FRCTs are adequately managed during the renewal period. Furthermore, New Jersey advances no legal basis to dispute the propriety of AmerGen entrusting aging management of the FRCTs to First Energy (supra note 16). Rather, New Jersey simply postulates that First Energy may fail to implement the aging management plan prescribed by AmerGen, thereby resulting in a violation of NRC regulations. As discussed above (supra Part II.B.3.a), sheer speculation of this type is wholly inadequate to support a contention, which must be based on supporting facts or expert opinions (10 C.F.R. § 2.309(f)(1)(v)).

Moreover, we reject New Jersey's contention for the alternative, but related, reasons that: (1) the contention lacks an adequate basis (10 C.F.R. § 2.309(f)(1)(ii)), because New Jersey failed to provide supporting information and references to specific documents or sources that establish the validity of the contention (Turkey Point, CLI-01-17, 54 NRC at 19-20); and (2) the contention fails to show the existence of a genuine dispute on a material issue of law or fact

(10 C.F.R. § 2.309(f)(1)(vi)), because New Jersey neither challenges any provision in the aging management plan, nor raises a legal challenge to the legitimacy of AmerGen's reliance on First Energy to implement the aging management program. See NRC Staff Answer to New Jersey Petition at 20-21; AmerGen First Supp. Brief at 10.<sup>18</sup>

**c. Corrective Action Program for the FRCTs** Finally, New Jersey contends that AmerGen's contractual arrangement with First Energy relating to the FRCTs is deficient, because if First Energy encounters problems while operating, maintaining, and testing the FRCTs, it may not enter them into a corrective action program that meets the requirements of 10 C.F.R. Part 50, Appendix B (New Jersey Petition at 9). Once again, however, New Jersey fails to provide either facts or expert opinions in support of its assertion. This contention is, therefore, inadmissible (10 C.F.R. § 2.309(f)(1)(v)).

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<sup>18</sup> It is ultimately AmerGen's regulatory obligation to ensure that (1) the FRCTs are operational throughout the period of extended operation (10 C.F.R. § 50.63), and (2) the effects of aging are adequately managed (id. § 54.21(a)). As we stated supra pp. 21-22, we are unwilling, on this record, to assume that AmerGen will fail to comply with its lawful obligations. Of course, in the event that the FRCTs become unavailable, or if AmerGen fails to ensure that its aging management plan is properly implemented, the "Staff would consider, in either instance, taking appropriate enforcement or other regulatory action against [AmerGen], as it would against any licensee for a violation of the Commission's regulations or the conditions of the license" (NRC Staff First Supp. Brief at 10; see also AmerGen First Supp. Brief at 11-12).

Moreover, this contention is inadmissible for two additional reasons. AmerGen avers (AmerGen Answer to New Jersey Petition at 28-29) that Commission regulations do not require that combustion turbine aging management programs comply with Appendix B. The NRC Staff has accepted the approach outlined by AmerGen in its License Renewal Application, which provides that First Energy will comply with prescribed portions of NRC Regulatory Guide 1.155 and NUMARC 87-00, both of which provide criteria to meet the SBO requirement (AmerGen Answer to New Jersey Petition at 29). New Jersey's contention – which fails to dispute AmerGen's assertion that Part 50, Appendix B need not be followed, and which fails to explain why the actions described in AmerGen's application are inadequate – is thus inadmissible because it (1) fails to provide an adequate basis (10 C.F.R. § 2.309(f)(1)(ii)), and (2) fails to show that a genuine dispute exists on a material issue of law or fact (*id.* § 2.309(f)(1)(vi)). See NRC Staff Answer to New Jersey Petition at 20-21; AmerGen Answer to New Jersey Petition at 28-31.<sup>19</sup>

In sum, New Jersey fails to proffer a contention that satisfies the admissibility requirements of 10 C.F.R. § 2.309(f)(1). We are therefore constrained to deny its Request for Hearing and Petition to Intervene.

**C. NIRS'S CONTENTION REGARDING THE DRYWELL LINER, AS NARROWED BY THE BOARD, IS ADMITTED**

NIRS seeks to litigate the following (NIRS Petition at 3):

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<sup>19</sup> To the extent that New Jersey's contention may be characterized as raising a question related to a putative need for current corrective action regarding the FRCTs, it fails to address the issue of aging management and is, therefore, outside the scope of this proceeding (*id.* § 2.309(f)(1)(iii)). See NRC Staff Answer to New Jersey Petition at 20.

[NIRS] contend[s] that as part of this licensing proceeding that [AmerGen] be required to conduct an adequate number of confirmatory UT [ultrasonic testing] measurements using state of the art equipment at all levels of the drywell liner, including multiple measurements at the area formerly know as the “sand bed region” . . . to determine the actual remaining wall thickness of the vitally important containment component . . . [and] that the UT measurements be taken periodically for the life of the reactor . . . to confirm that the actual corrosion measurements are as projected and that additional UT measurements be greatly expanded into areas not previously inspected.

Accompanying NIRS's proposed contention is a memorandum from Dr. Rudolph Hausler, who states that, in his opinion, visual inspections of previously corroded areas in the sand bed region that have been covered with an epoxy coating are not adequate to ensure that the “coating prevented additional corrosion [and that] the structure is still safe enough to be certified for an additional 20 years of operation” (NIRS Petition, Memorandum from Dr. Rudolf H. Hausler, Corro-Consulta to Paul Gunter, [NIRS] at 1 (Nov. 10, 2005) [hereinafter Dr. Hausler Memo]).

AmerGen and the NRC Staff argue that this contention is not admissible, because it fails to raise a genuine issue of material law or fact, lacks proper basis and support, and fails to provide a corroborating expert opinion. See AmerGen Answer to NIRS Petition at 23-31; NRC Staff Answer to NIRS Petition at 14-17.

For the reasons discussed below, we conclude that NIRS's contention – as narrowed by this Board to challenge only the aging management program for corrosion in the sand bed region of the drywell liner (infra p. 33) – satisfies the requirements of 10 C.F.R. § 2.309(f)(1) and, accordingly, is admitted.

Preliminarily, we discuss the relevant history of Oyster Creek's drywell liner, because that history provides the factual backdrop for our admissibility analysis.

**1. Background: The Severe Corrosion In The Sand Bed Region Of The Drywell Liner, And The Licensee's Commitment To Take Ultrasonic Test Measurements Of The Liner For the Life Of The Plant**

The drywell liner<sup>20</sup> is a safety structure that is maintained “both as a pressure-related boundary and for structural support” (NIRS Petition at 4). It is designed “to contain and control the release of fission products to the reactor building in the event of a Design Basis Accident including a Loss-Of-Coolant-Accident . . . so that the offsite radiation dose consequences to surrounding populations would be within the postulated acceptable limits” (ibid.).

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<sup>20</sup> Although the “drywell liner” is also commonly referred to as the “drywell shell” (AmerGen Answer to NIRS Petition at 22 n.11), we will use the former term here.

The liner itself is a steel pressure vessel in the shape of an inverted light bulb that is about 100 feet tall and varies in design thickness from 1.154 inches in the 70-foot spherical base to 0.64 inches in the 30-foot upper cylinder region (AmerGen Answer to NIRS Petition at 19; NIRS Petition, Exh. 4, Office of Nuclear Reactor Regulation, Summary of May 5, 1993 Meeting with GPU Nuclear Corp., Encl. 2, at 7 (May 17, 1993)). The spherical section is partially embedded in reinforced concrete up to about the 9-foot level. The non-embedded portion of the drywell liner is enclosed by a reinforced concrete shield wall, separated by an annulus of 3 inches that allows for expansion of the drywell liner during reactor operation (NIRS Petition at 4). The area outside the lower portion of the spherical region – extending from about the 9-foot level to the 13-foot level – is known as the “sand bed region” of the drywell liner, because it originally was filled with sand, which acted as a cushion and allowed expansion (AmerGen Answer to NIRS Petition at 19; NIRS Petition, Exh. 1, Office of Inspection and Enforcement Information Notice 86-99: Degradation of Steel Containments at 2 (Dec. 8, 1986)).

About 20 years ago, Oyster Creek’s then-licensee identified corrosion on the outside of the drywell liner, finding the most severe corrosion in the sand bed region (AmerGen Answer to NIRS Petition at 19). The corrosion apparently was caused by water that entered the annulus between the liner and the concrete shield wall, which accumulated at a rate from between “a few drops to 2 gallons per minute, depending[, respectively,] on whether the unit was in operation or an outage for refueling” (NIRS Petition, Exh. 1, at 1).<sup>21</sup>

In 1986, the then-licensee used an ultrasonic testing (“UT”) technique at two elevations of the drywell liner – 11 feet (in the sand bed region), and 51 feet – to determine the extent of

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<sup>21</sup> In 1986, the then-licensee – in its effort to identify and eliminate the water problem – repaired a seal and replaced a gasket at the bellows, which is located at the top of the drywell liner. This corrective action allegedly stopped the leakage during the unit’s outage for refueling. The region above the bellows is flooded during refueling, which explained why leakage was high during refueling and low during operation. See NIRS Petition, Exh. 1, at 1.

the damage caused by the corrosion (NIRS Petition, Exh. 1, at 1). The UT measurements taken at the 51-foot level did not reveal significant damage; however, of the 143 UT measurements taken in the sand bed region at the 11-foot level, 60 measurements indicated a reduction of more than 1/4 inch from its design thickness of 1.154 inch (ibid.).

In 1991, the NRC Staff issued an Information Notice to reactor licensees that provided information – based on the experience at Oyster Creek – about the potential for drywell liner degradation and possible ways to avoid or mitigate such problems (NIRS Petition, Exh. 2, Office of Nuclear Reactor Regulation, Information Notice No. 86-99, Supp. 1: Degradation of Steel Containments (Feb. 14, 1991)). In the Information Notice, the NRC Staff stated that the then-licensee at Oyster Creek had “instituted periodic wall thickness measurements by the [UT] technique to determine corrosion rates. The most severe corrosion was found in the sand bed region at a nominal elevation of [11 feet, 3 inches]” (id. at 1). The Staff advised that in 1989, which was about three years after the corrosion had been discovered, the licensee had installed cathodic protection in the sand bed areas where the drywell liner exhibited the greatest damage, but “[s]ubsequent UT thickness measurement in these [areas] indicated that [cathodic protection] was ineffective” (ibid.). In other words, subsequent to 1989, the corrosion in the sand bed region had not been arrested. The NRC Staff also advised that the spherical portion of the drywell liner experienced some corrosion at the 51-foot level, and some corrosion was also discovered in the cylindrical portion of the liner at the 87-foot level. The latter corrosion was thought to have originated mostly during construction, and although no significant wall thinning was detected, “this is the region in which the nominal thickness of the wall has the least margin, thus requiring periodic monitoring of actual thickness” (id. at 2).

In 1992, the NRC Staff conducted a safety evaluation of the structural integrity of Oyster Creek’s drywell liner (NIRS Petition, Exh. 3, Office of Nuclear Reactor Regulation, Safety Evalu-

ation of Oyster Creek Nuclear Generating Station; Drywell Structural Integrity (Apr. 24, 1992)). The Staff concluded that the drywell liner, at that time, satisfied the structural integrity requirements. The Staff nevertheless stated (*id.* at 5) (emphasis added):

*[I]t is essential that the licensee perform UT thickness measurements at refueling outages and at outages of opportunity for the life of the plant. The measurements should cover not only areas previously inspected but also accessible areas which have never been inspected so as to confirm that the thicknesses of the corroded areas are as projected and the corroded areas are localized.*

In May 1993, the then-licensee at Oyster Creek met with the NRC Staff and discussed the status of its drywell corrosion mitigation program. See NIRS Petition, Exh. 4. The licensee reported that during the most recent refueling outage – from November 1992 to February 1993 – Oyster Creek permanently removed all the sand from the sand bed region, cleaned the rust and scale from the drywell liner in that region, and applied a protective epoxy coating to the corroded areas of the drywell liner in that region (*id.* at 1-2).<sup>22</sup> According to the licensee, a visual inspection of the drywell liner conducted from the 10 access bays surrounding the liner revealed severe corrosion in the shape of a “bathtub ring” in each bay, which the licensee described as “an 8 to 18 inch wide band” about “30 to 40 inches long . . . containing heavily corroded areas” (NIRS Petition, Exh. 4, Encl. 2, at 8). The so-called “bathtub ring” of corrosion was “believed to be the air-water interface when [the] sand bed was saturated with water” (*ibid.*). The visual inspection showed no corrosion above the ring, but there was “uniform corrosion” below and laterally beyond the ring (*ibid.*). This inspection confirmed that the most serious corrosion on the drywell liner occurred in the sand bed region (*id.* at 13).<sup>23</sup>

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<sup>22</sup> The then-licensee removed the sand from the sand bed region because it was believed that the sand contained residual moisture that was causing continuing corrosion (NIRS Petition at 8). Removal of the sand allowed an inspection of the concrete floor, which revealed that the floor’s condition “prevented proper drainage of water, which in turn, aggravated the corrosion of [the drywell liner]” (NIRS Petition, Exh. 4, Encl. 2, at 9).

<sup>23</sup> Although the then-licensee described the heavily corroded portion of the sand

Moreover, during the May 1993 meeting with the NRC Staff, the then-licensee provided the Staff with a summary and evaluation of the most recent UT measurements (NIRS Petition, Exh. 4, Encl. 2, at 7, 11-12). The thickness of the drywell liner at the sand bed region, when manufactured, was designed to be 1.154 inches; the minimum thickness required in that region

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bed region as being in the shape of a “bathtub ring,” we note that this so-called observable “ring” of heavy corrosion was an aggregate of, at most, 390 inches – or less than 33 feet – in a total perimeter of approximately 150 feet. See Oyster Creek Nuclear Generating Station, Updated Final Safety Analysis Report, Vol. 4, at pp. 3.8-5 to 3.8-6, Fig. 3.8-6. Thus, *on the record before us*, when we use the term “bathtub ring” in referring to the corrosion in the sand bed region, we do *not* mean to suggest that we perceive the corrosion as a uniform and uninterrupted ring encircling the liner that puts it at risk of buckling failure. Rather, as discussed infra Part II.C.2, the adequacy vel non of AmerGen’s monitoring activities in that region to identify and control the effect and extent of corrosion during the period of extended operations is a material fact that NIRS has placed in genuine dispute.

is 0.736 inches, which is based on the buckling criterion for the liner (id. at 7, 11).<sup>24</sup> The thinnest UT thickness measurement in the sand bed region recorded in July 1991 was 0.803 inches, and the thinnest measurement in that region recorded in December 1992 was 0.800 inches (id. at 7). The UT measurements thus revealed that, in December 1992, as little as 0.064 inches of margin existed until the liner in the sand bed region violated the buckling criterion.<sup>25</sup> Although the licensee claimed that “corrosion in the sand bed region [is] now stopped” (id. at 13), it nevertheless emphasized that the “*integrity of the . . . drywell remains a priority concern of [Oyster Creek] management. We will continue UT thickness measurements for the life of the plant*” (ibid.) (emphasis added).

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<sup>24</sup> If, as a result of corrosion, a substantial portion of the wall's perimeter becomes thinner than the buckling criterion, a risk arises that the tremendous weight of the drywell liner above the sand bed region will cause the structure to collapse (but cf. supra note 23).

<sup>25</sup> Notably, although the then-licensee informed the NRC Staff that the thinnest 1992 measurement in the sand bed region was 0.800 inches, it also advised that “Bays 1 and 13 have several locations where the measured thickness is below [the] 0.736 inch [buckling criterion]” (NIRS Reply at 11) (quoting NIRS Petition, Exh. 4, Encl. 2, at 11).

In September 1994 during Oyster Creek's 15th Refueling Outage, the then-licensee again inspected the drywell liner and reported the results to the NRC Staff. The licensee reiterated that, based on UT measurements, "corrosion has been arrested in the sand bed region" (NIRS Petition, Exh. 6, Letter from R.W. Keaten, GPU Nuclear Corp., to U.S. Nuclear Regulatory Commission at 1 (Sept. 15, 1995)). The licensee also advised that the epoxy coating on the corroded areas in the sand bed region appeared "satisfactory with no signs of deterioration such as blisters, flakes, [or] discoloration" (*id.* at 2). Although the licensee reaffirmed its commitment "*to continue taking drywell thickness measurements for the life of the plant*" (*id.* at 1) (emphasis added), it sought the Staff's permission to confine future UT measurements to the upper elevations of the drywell liner, which showed "no evidence of ongoing corrosion" (*id.* at 2). As to the sand bed region, stated the licensee, "UT thickness measurements will be taken one more time [in 1996] during the [16th Refueling] Outage" (*ibid.*). In addition, the licensee committed to performing a visual inspection of the epoxy coating in the sand bed region during the 16th Refueling Outage and, at a minimum, again during the 18th Refueling Outage by "direct (physical) and/or remote methods on a sample basis" (*ibid.*). Based on these visual inspections, "any appropriate corrective action will be taken, and the need for additional [post 18th Refueling Outage] inspections will be determined to ensure that drywell integrity is maintained for the remaining life of the plant" (*ibid.*).<sup>26</sup> The NRC Staff approved this inspection plan, with the caveat that "since water leaking from the pools above the reactor cavity has been the source of corrosion, the licensee should make a commitment to the effect that an additional inspection of the drywell will be performed about 3 months after the discovery of any water leakage" (NIRS

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<sup>26</sup> The licensee observed that the epoxy coating "has an estimated life of 8-10 years, which makes the current projected end of life between December 2000 and December 2002" (NIRS Petition, Exh. 6, at 2).

Petition, Exh. 9, Letter from Alexander W. Dromerick, Office of Nuclear Reactor Regulation, to John J. Barton, GPU Nuclear Corp., Attachment at 1 (Nov. 1, 1995)).

Consistent with this plan, Oyster Creek's licensee has taken UT measurements in the upper drywell liner during every other refueling outage, most recently in 2004 (AmerGen Answer to NIRS Petition at 21). UT measurements were last taken in the sand bed region in 1996, but the epoxy coating is visually inspected periodically, most recently during the refueling outages in 2000 and 2004 (*ibid.*). Based on these measurements and inspections, AmerGen concludes that corrosion on the drywell liner has been arrested, including in the sand bed region (*ibid.*).

In its License Renewal Application, AmerGen states its commitment to continue (1) taking periodic UT measurements of the upper drywell liner, and (2) conducting visual inspections of the epoxy coating in the sand bed region (AmerGen Answer to NIRS Petition at 23-24, 26). Moreover, prior to any operations under a renewed license, AmerGen will take a set of one-time UT measurements of the drywell liner in the sand bed region "to confirm that the surface coating applied to this region of the containment has arrested corrosion" (AmerGen Answer to New Jersey Petition, Exh. 1, at 3). AmerGen explains (*ibid.*):

These [UT] measurements will be performed using [UT] from inside the drywell. The locations of these measurements will be a sample of areas previously inspected (in the 1990s) and identified as having exhibited corrosion. Inspecting the same locations will allow comparison of results in order to confirm that the surface coating applied in 1992 has arrested corrosion that had previously occurred.

**2. NIRS's Contention Challenging The Testing Of The Extent Of Corrosion Of The Drywell Liner In The Sand Bed Region During The Period Of Extended Operation Is Admissible**

NIRS contends that AmerGen's License Renewal Application fails to establish an adequate aging management program for the drywell liner that will enable AmerGen to determine the amount of corrosion in critical areas at and above the sand bed region and thereby manage the safety margins during the term of the extended license. In our judgment, NIRS's contention

is overbroad to the extent it challenges AmerGen's aging management program above the sand bed region.<sup>27</sup>

However, as explained infra, we conclude that NIRS's contention is admissible to the extent it challenges the aging management program in the sand bed region of the drywell liner.

We therefore narrow NIRS's contention to read as follows:

AmerGen's License Renewal Application fails to establish an adequate aging management plan for the sand bed region of the drywell liner, because its corrosion management program fails to include periodic UT measurements in that region throughout the period of extended operation and, thus, will not enable AmerGen to determine the amount of corrosion in that region and thereby maintain the safety margins during the term of the extended license.

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<sup>27</sup> We limit NIRS's contention to the sand bed region because, contrary to NIRS's assertion, AmerGen is performing, and will continue to perform during the renewal period, UT measurements at critical locations in the upper region of the drywell liner. Such measurements are intended to enable AmerGen to determine the amount of corrosion in the upper region and thereby maintain the safety margins during the term of the extended license (AmerGen Answer to NIRS Petition at 21, 23-25). For this reason, NIRS's contention – to the extent it includes the upper region of the drywell liner – lacks an adequate basis, because it fails to explain with specificity or support why AmerGen's corrosion management program for that region is inadequate (AmerGen Answer to NIRS Petition at 25), and, moreover, it overlooks an amendment to the Oyster Creek Technical Specifications that reduced the drywell liner design pressure from 62 psig to 44 psig, which, in turn, allowed for a decrease in the minimum allowable thickness of the liner, resulting in an increased safety margin in the upper region (ibid.; NRC Staff Answer to NIRS Petition at 14-15).

So narrowed, for the reasons discussed below, we conclude that NIRS's contention satisfies the six admissibility requirements of 10 C.F.R. § 2.309(f)(1).<sup>28</sup>

First, NIRS's contention provides a "specific statement of the issue of . . . fact to be raised" (10 C.F.R. § 2.309(f)(1)(i)). Namely, NIRS questions whether – absent continuing, periodic UT measurements in the sand bed region – AmerGen's drywell liner corrosion management program will adequately enable AmerGen to determine the amount of corrosion in that region and maintain necessary safety margins during the extended license period.

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<sup>28</sup> We reject NIRS's assertion – developed for the first time in its Reply Brief (NIRS Reply at 14) – that the contention should be construed as encompassing the drywell liner *below* the sand bed region. Although NIRS's Petition argued generally that UT measurements should be taken at all "critical" levels of the drywell liner (e.g., NIRS Petition at 3), the arguments focused specifically and exclusively on the sand bed region and the upper region of the drywell liner (e.g., id. at 3, 9, 12, 13). NIRS, having failed to develop this argument in its Petition, is foreclosed from doing so in the first instance in its Reply Brief. See Louisiana Energy Servs., L.P. (National Enrichment Facility), CLI-04-25, 60 NRC 223, 225 (2004).

Second, NIRS's contention provides a "brief explanation of the basis for the contention" (10 C.F.R. § 2.309(f)(1)(ii)). In particular, NIRS explains that: (1) the drywell liner, which must be maintained for structural support and as a containment in the event of an accident, experienced moisture intrusion that resulted in severe corrosion (NIRS Petition at 4-5); (2) the most serious corrosion occurred in the sand bed region, where the thickness of the liner was reduced by over 1/4 inch (id. at 5); (3) the sand bed region contains a "bathtub ring" of corrosion that is "an 8 to 18 inch wide band [in each of the surrounding bays] about 30 to 40 inches long containing . . . heavily corroded areas" (id. at 9); (4) in some areas of the sand bed region, there is as little as 0.064 inches of safety margin before the liner violates the buckling criterion (ibid.), and there are several locations where the measured thickness is less than that criterion (NIRS Reply at 11); (5) corrosion-causing moisture continues to enter the drywell liner (NIRS Petition at 6, 11, 13; NIRS Reply at 17-18); (6) visual inspections alone of the sand bed region may not detect a gradual, continuing, thinning of the liner before the buckling criterion is violated, especially if corrosion is occurring underneath the epoxy coating, which may mask such corrosion (NIRS Petition at 10); (7) both the NRC Staff and the Oyster Creek licensee have stated that UT measurements of the drywell liner are necessary "for the life of the plant" to assure public safety (id. at 14); and (8) accordingly, periodic UT inspections must be employed in the sand bed region during the license renewal period to confirm the actual remaining wall thicknesses of this vital safety structure (id. at 11).<sup>29</sup>

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<sup>29</sup> AmerGen correctly states that the following assertions made by NIRS are inaccurate (AmerGen Answer to NIRS Petition at 28-30): (1) NIRS asserts that water will be retained in the pores of the sand and continue to support corrosion, when in fact, all of the sand has been removed from the sand bed; (2) NIRS states that spillage from the refueling canal or leaks in the spent fuel pool could be a source of corrosive borated water, when in fact, Oyster Creek does not use borated water in the refueling canal or the spent fuel pool; and (3) NIRS incorrectly states that no UT measurements have been made in the sand bed region since 1992, when in fact, UT measurements were also taken in the sand bed region in 1994 and 1996. But the inaccuracy of the above assertions does not render the basis of NIRS's contention deficient,

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because NIRS's contention does not hinge on these assertions. Rather, as discussed above in text, NIRS's contention is based on its concern that AmerGen's corrosion management program for the sand bed region fails to provide reasonable assurance that the actual remaining drywell liner thickness will be maintained consistent with the buckling criterion, and that – given the extent of corrosion damage in that region and the potential for continuing corrosion, coupled with the licensee's prior acknowledgment of the need to take UT measurements for the life of the plant to assure public safety – periodic UT measurements must be taken in the sand bed region during the renewal period (NIRS Petition at 14). NIRS has, in our judgment, adequately explained the basis of its contention.

AmerGen also attacks NIRS's contention on the ground that NIRS asserts that pinhole leaks in the epoxy coating in the sand bed region could allow for water seepage behind the coating that results in further corrosion, but NIRS does not show that water has continued to enter the drywell liner (AmerGen Answer to NIRS Petition at 29). AmerGen's argument ignores that Oyster Creek's prior licensee conceded in 1993 that corrosion would continue in the drywell liner, albeit at a "low" rate (NIRS Petition, Exh. 4, at 2). See also NIRS Petition, Exh. 1, at 2 (drain lines and other penetrations in concrete shield "are open during operation and would allow moist air to enter and rise up the gap and later cool and condense as water"). NIRS also showed that: (1) the initial corrosion was caused by significant leakage from the region above the drywell liner (NIRS Petition, Exh. 1, at 1); and (2) the Oyster Creek licensee and the NRC Staff both recognized the possibility of future water leakage (NIRS Petition, Exh. 4, at 2, & Exh. 9, at 1). Moreover, correspondence in the mid-1990s between the then-licensee and the NRC Staff appears to indicate that leakage of up to 12 gallons per minute may occur during refueling outages (NIRS Reply Brief, Exhs. 10 & 11). In light of Oyster Creek's history of significant leakage in the drywell liner that everyone concedes could recur, coupled with the leakage that appears to occur during refueling outages and a corrosive environment that results in continuing corrosion at a low rate, we believe that NIRS has provided an adequate factual basis to support its assertion that corrosion-causing moisture continues to occur in the sand bed region, which may be especially problematic if such moisture seeps into pinhole leaks in the epoxy coating.

Third, NIRS has demonstrated that the issue raised in its contention “is material to the findings the NRC must make to support the action that is involved in the proceeding” (10 C.F.R. § 2.309(f)(1)(iv)).<sup>30</sup> It cannot seriously be questioned that the issue of the adequacy of Oyster Creek’s aging management program in the sand bed region of the drywell liner, including the necessity vel non of periodic UT measurements to maintain the safety margins during the term of the extended license, is material in this license renewal proceeding, in which AmerGen has a regulatory duty to “demonstrate that the effects of aging [of the drywell liner] will be adequately managed so that the intended function(s) [i.e., structural support and pressure boundary] will be maintained . . . for the period of extended operations” (10 C.F.R. § 54.21(a)(3)).

Fourth, NIRS has provided a “concise statement of the alleged facts or expert opinions which support . . . [its] position . . . , together with references to the specific sources and documents on which [it] intends to rely” (10 C.F.R. § 2.309(f)(1)(v)). NIRS accompanied its Petition with a memorandum from Dr. Rudolf H. Hausler, President, Corro-Consulta, in which he considered – in light of the extensive corrosion in the sand bed region – whether visual inspection alone is sufficient “to ascertain that no additional corrosion has further impaired the integrity of the [drywell liner]” (NIRS Petition, Dr. Hausler Memo at 1). In his opinion, that issue must be resolved in the negative.

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<sup>30</sup> We analyze whether NIRS’s contention satisfies the “scope” requirement of 10 C.F.R. § 2.309(f)(1)(iii) infra pp. 39-44.

Dr. Hausler observed that further corrosion in the sand bed region was a reasonable possibility. He indicated that it was questionable whether the coating – which was applied in 1992 and which has a projected life that expired in 2002 (supra note 26) – would endure for the period of extended operation (NIRS Petition, Dr. Hausler Memo at 1). During operations, the temperature on the outside of the sand bed region is “high enough to cause slow deterioration of the epoxy coating” (ibid.).<sup>31</sup> Additionally, “water could and can enter the space between the concrete containment and the [drywell liner] during refueling and other non-planned outages” (id. at 2). “Deteriorated epoxy coating and the presence of liquid . . . would certainly lead to additional localized corrosion” (ibid.). Furthermore, stated Dr. Hausler, “the application of epoxy resins on metal surfaces may result in holidays (pinholes) depending on surface preparation, the curing process, and general cleanliness. There is, therefore, no guarantee that the epoxy coating prevented further growth of existing pits” (ibid.).

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<sup>31</sup> AmerGen observes that Dr. Hausler makes statements regarding temperatures of the drywell liner without citing a source (AmerGen Answer to NIRS Petition at 28). We do not view the omission of that particular source as significant, much less fatal. In any event, NIRS corrected that omission in its Reply Brief (NIRS Reply at 20).

Dr. Hausler also opined that visual inspections of the sand bed region are not sufficient to determine whether the drywell liner has an adequate margin of safety. Although he acknowledged that severe corrosion under the epoxy coating “would lead to blistering and cracking of the epoxy coat [that] could be observed visually” (NIRS Petition, Dr. Hausler Memo at 2), he also stressed that “the absence of such observations does *not* necessarily mean that *no* additional corrosion occurred in the pitted areas” (*ibid.*) (emphasis added). Consequently, Dr. Hausler states, it is “absolutely essential” that the integrity of the vessel be directly assessed by periodic UT measurements or optical pit depth measurements (*ibid.*).<sup>32</sup>

We find that the detailed statement of facts in NIRS’s Petition regarding the contention, which included references to the specific sources and documents on which NIRS intends to rely, and which also included Dr. Hausler’s memorandum and numerous exhibits (many of which we cited *supra* Part II.C.1), amply satisfies the admissibility requirements in 10 C.F.R. § 2.309(f)(1)(v).<sup>33</sup>

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<sup>32</sup> Contrary to AmerGen’s assertion (AmerGen Answer to NIRS Petition at 27-28), Dr. Hausler does not contradict NIRS’s contention regarding the need for periodic UT measurements. We construe his memorandum as saying that visual inspections alone will not provide reasonable assurance that the safety margin of thickness in the sand bed region will be maintained. Such inspections, according to Dr. Hausler, must be supplemented by UT measurements – which “are very difficult and have to be made by highly technically trained personnel” (NIRS Petition, Dr. Hausler Memo at 2) – or by optical pit depth measurements – which “are no doubt more reliable” (*ibid.*).

<sup>33</sup> AmerGen claims that NIRS “failed to meet [its] burden to demonstrate that Dr. Hausler is qualified to provide opinions on this matter,” because his memorandum “is not signed, and contains no statement of qualifications or curriculum vitae” (AmerGen Answer to NIRS Petition at 27). NIRS responded in its Reply Brief that the “electronic signature of Dr. Hausler did not optically transmit . . . [in] the .pdf version of [his] expert opinion . . . which was posted to ADAMS” (NIRS Reply at 19). NIRS corrected this alleged deficiency by attaching to its Reply Brief a copy of the original filing containing Dr. Hausler’s signature (NIRS Reply, Exh. 13). Additionally, NIRS attached to its Reply Brief a copy of Dr. Hausler’s curriculum vitae (NIRS Reply, Exh. 14). Assuming *arguendo* the correctness of AmerGen’s assertion that Dr. Hausler’s qualification to provide an opinion in this case was placed in doubt by the absence of his signature and his curriculum vitae, we conclude that this putative deficiency has been cured without any prejudice to AmerGen.

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AmerGen did not object to NIRS attaching Dr. Hausler's curriculum vitae to its Reply Brief. However, AmerGen asks this Board to strike NIRS's Exhibit 13 containing Dr. Hausler's electronic signature, because "[e]lectronic signatures are not authorized in NRC adjudicatory proceedings" (AmerGen Motion to Strike at 7 (Dec. 29, 2005)) (citing 10 C.F.R. § 2.304(c)). We deny AmerGen's request. Contrary to AmerGen's understanding, section 2.304(c) – which states that the "original of each document must be signed in ink" – applies only to *pleadings* and a party's affidavits, as evidenced by the fact that the regulation expressly requires a signature by the *party*, the *party's* authorized representative, or the *party's* attorney. In any event, AmerGen's request to strike NIRS's Exhibit 13 – even if granted – would not affect our conclusion that NIRS's contention satisfies the requirements of section 2.309(f)(1)(v). That provision requires a "concise statement of the alleged facts or expert opinions" that support its position (10 C.F.R. § 2.309(f)(1)(v)). It does not require the submission of an expert opinion, nor does it require that an expert opinion be submitted in the form of admissible evidence (Statement of Policy on Conduct of Adjudicatory Proceedings, CLI-98-12, 48 NRC 18, 22 n.1 (1998)). Here, NIRS's statement of the facts in its Petition, coupled with the views embodied in Dr. Hausler's memorandum (which AmerGen does *not* seek to strike), suffice to meet the requirements of section 2.309(f)(1)(v), which is *not* designed to erect an onerous evidentiary hurdle, but rather "helps to ensure that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions" (Ocone, CLI-99-11, 49 NRC at 334).

Fifth, NIRS's contention provides "sufficient information to show that a genuine dispute exists . . . on a material issue of law or fact" (10 C.F.R. § 2.309(f)(1)(vi)). Specifically, we find that a genuine dispute exists regarding whether AmerGen's aging management program for the heavily corroded sand bed region – which does *not* include periodic UT measurements – will enable AmerGen to determine the extent and continuation vel non of corrosion and thereby maintain the required safety margins during the term of the extended license. See NIRS Petition at 5-14.

AmerGen nevertheless asserts that NIRS's contention fails to show a genuine dispute of fact, because AmerGen has committed "to perform one-time UT measurements in the sand bed region" prior to operations under a renewed license (AmerGen Answer to NIRS Petition at 26). According to AmerGen, this one-time set of UT measurements should satisfy NIRS's "demand for a new set of near-term, ASME-compliant UT measurements" in the sand bed region (ibid.).

But AmerGen's assertion misconceives NIRS's contention, which seeks not a set of "one-time UT measurements" in the sand bed region. Rather, NIRS contends that periodic UT measurements in this heavily corroded and epoxy covered region are essential *throughout Oyster Creek's extended period of operation* to ensure the absence of continuing corrosion, maintain the required safety margin, and thereby ensure the effects of aging are adequately managed (10 C.F.R. § 54.21(a)(3)). As NIRS explains (NIRS Reply at 15) (citation omitted):

As stated in [NIRS] Exhibit 3, previous NRC Safety Evaluations of Oyster Creek's Drywell Liner Integrity identified the importance that "it is essential that [the licensee] continue UT thickness measurements at refueling outages and at outages of opportunity for the life of the plant." [NIRS] argue[s] that it is unreasonable that when UT measurement equipment is brought into Oyster Creek's containment for the measurements of the upper levels during subsequent inspections during the renewal period that the operator would ignore the opportunity to confirm projections as to coating performance at the sand bed with UT measurements. [NIRS] find[s] no reassurance in AmerGen's "don't look, don't find" approach to projecting the integrity of this vital radiation containment component over the proposed 20-year extension.

In Gulf States Utilities Co. (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43 (1994), the Commission stated that, at the contention filing stage, “the factual support necessary to show that a genuine dispute exists need not be in formal evidentiary form, nor be as strong as that necessary to withstand a summary disposition motion” (40 NRC at 51). Rather, the petitioner need simply make “a minimal showing that the material facts are in dispute, thereby demonstrating that an inquiry in depth is appropriate” (ibid.) (internal quotation marks omitted). We believe that NIRS has satisfied this requirement.

Lastly, we conclude that NIRS’s contention “is within the scope of the proceeding” (10 C.F.R. § 2.309(f)(1)(iii)). As indicated in the Notice of Opportunity for Hearing concerning AmerGen’s License Renewal Application (70 Fed. Reg. 54,585 (Sept. 15, 2005)), the scope of the NRC Staff’s public health and safety review in the context of a license renewal proceeding – and, hence, the scope of an admissible contention – “encompasses a review of the plant structures and components that will require an aging management review for the period of extended operation and the plant’s systems, structures, and components that are subject to an evaluation of time-limited aging analyses” (Duke Energy Corp., CLI-01-20, 54 NRC at 212; see also supra p. 8). Here, there is no dispute that the Commission’s regulations (10 C.F.R. §§ 54.4, 54.21(a)) required AmerGen’s License Renewal Application to include an aging management review for the drywell liner. Nor is there any dispute that AmerGen performed an aging management review for the liner. See Oyster Creek Generating Station, License Renewal Application at 3.5-18 to 3.5-21, 4-54 to 4-55 (July 22, 2005) [hereinafter LRA]. As AmerGen states (AmerGen First Supp. Brief at 8):

[AmerGen’s License Renewal Application] describes the programs and activities that are credited for managing aging effects during the period of extended operation. Those programs and activities include monitoring of the drywell [liner] for corrosion, because AmerGen has determined that such monitoring is necessary to ensure that the CLB will be maintained during the period of extended operation.

In our judgment, NIRS's contention – which challenges the adequacy of AmerGen's aging management program for measuring corrosion in the sand bed region of the drywell liner during the period of extended operations – fits squarely within the scope of this proceeding.

Our conclusion is buttressed by the candid acknowledgment by AmerGen and the NRC Staff that NIRS's contention falls within the scope of this proceeding “[t]o the extent that [it] addresses AmerGen's aging management program related to potential corrosion of the drywell [liner] during the period of extended operation under the renewed license” (AmerGen First Supp. Brief at 1-2; accord NRC Staff First Supp. Brief at 7). NIRS's contention addresses precisely that.

Notably, in their Answers to NIRS's Petition, neither AmerGen nor the NRC Staff asserted that NIRS's contention was outside the scope of this proceeding. However, in response to our request for additional briefing on the scope issue (supra note 3), they both – for the first time – expressed concern that NIRS's contention was outside the scope. For the reasons discussed below, we conclude that their belated concerns are not justified.

AmerGen argues that “to the extent that the contention could be construed as a challenge to the adequacy of AmerGen's corrosion inspection program during the *current* term of [Oyster Creek's] license it is clearly outside the scope of this license renewal proceeding” (AmerGen First Supp. Brief at 2). This argument is correct, but it is also quite beside the point, because NIRS's contention does *not* challenge AmerGen's corrosion inspection program for the current licensing period, nor does it challenge any aspect of AmerGen's CLB for the current licensing period. Rather, it permissibly challenges the adequacy of AmerGen's aging management program for measuring corrosion in the sand bed region of the drywell liner during the period of extended operations. As AmerGen itself correctly states, NIRS may raise age-related issues “associated with drywell [liner] corrosion that . . . call into question AmerGen's program

to provide reasonable assurance that the CLB [or, more specifically, the design tolerances in the sand bed region] will be maintained in the period of extended operations” (AmerGen First Supp. Brief at 8).

The NRC Staff argues that NIRS’s contention is outside the scope of this proceeding, because although “NIRS addresses the drywell corrosion management program, it does not refer specifically to the effects of aging” (NRC Staff First Supp. Brief at 7). Unfortunately, the Staff fails to develop this argument, so we cannot be certain of the precise point that the Staff is trying to make.<sup>34</sup> To the extent the Staff is arguing that NIRS allegedly failed to make a specific reference to the effects of aging, we find this argument unpersuasive. Here, the adverse aging effect addressed by NIRS’s contention is the potential for continuing corrosion during the 20-year renewal period in a “component [that] already has razor-thin safety margins” (NIRS Supp. Brief at 10). Contrary to the Staff’s assertion, NIRS plainly indicated that its contention was based on the effects of aging when it cited the “Summary of Aging Management Evaluations” in AmerGen’s License Renewal Application regarding “[l]oss of material due to corrosion in the sand bed [region],” and it argued that AmerGen’s “age management review for the 20-year extension . . . [fails to provide] adequate UT measurements . . . of the already damaged (corrosion induced wall thinning) sand bed region” (NIRS Reply at 9) (quoting LRA at 3.5-35). In other words, NIRS’s contention focuses on a plant component for which, in NIRS’s view, regulatory “activities and requirements may not be sufficient to manage the effects of aging in the period of extended operation” (60 Fed. Reg. at 22,469). The Commission has indicated that this type of

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<sup>34</sup> We remind the Staff that it, like every participant in the adjudicative process, has an obligation to fully develop its arguments. “Our adversarial system relies on the advocates to inform the discussion and raise [and develop] the issues” (Independent Towers of Washington v. Washington, 350 F.3d 925, 929 (9th Cir. 2003)).

contention falls within the scope of a license renewal proceeding (Turkey Point, CLI-01-17, 54 NRC at 10).<sup>35</sup>

It is possible, however, that the Staff is attempting to make a different point when it alleges that NIRS “does not refer specifically to the effects of aging” (NRC Staff First Supp. Brief at 7). The Staff may be endeavoring to argue that NIRS may not challenge the adequacy of AmerGen’s corrosion management program, because NIRS failed to show that corrosion in the sand bed region of the drywell liner is related to aging. But cf. supra note 35. If the Staff had developed this argument, we believe it would go as follows: Corrosion in the sand bed region of the drywell liner is not age-related degradation, but rather a discrete problem that occurred two decades ago. The leakage that caused the corrosion has now been stopped, the corrosion has been arrested, and the thickness of the liner has not been reduced below the permissible minimum. Under these circumstances, it presumably would be argued, the corrosion should be characterized as non-age-related degradation that is subject to regulatory oversight and an on-going monitoring program and, therefore, is beyond the scope of this proceeding.

Such an argument might have merit if the underlying assumptions were demonstrably correct. That is, we might be persuaded that drywell liner corrosion during the renewal period was not age-related degradation if the record clearly established that (1) corrosion-causing

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<sup>35</sup> The Commission has recognized that “corrosion” can be an “[a]dverse aging effect[]” (Turkey Point, CLI-01-17, 54 NRC at 7). Consistent with that recognition, AmerGen described the corrosion in the drywell liner as an “aging effect[]” that must be monitored during the renewal period “to ensure that the CLB will be maintained during the period of extended operations” (AmerGen First Supp. Brief at 8).

moisture no longer occurred in the drywell liner, *and* (2) corrosion of the drywell liner in the sand bed region had been totally arrested. In our judgment, however, NIRS has made a sufficient showing to put these material facts in genuine dispute (supra pp. 33-39 & n.29). Our conclusion is bolstered by AmerGen's concession that corrosion in the drywell liner is an "aging effect[]" that must be monitored throughout the period of extended operation to ensure adherence to the CLB (supra note 35). Plainly, this concession tends to support a conclusion that a corrosive environment exists in the drywell liner that may result in continuing degradation during the renewal period.

We are therefore unwilling, *at this juncture and on this record*, to rule definitively that corrosion in the drywell liner during the renewal period is not age-related degradation. To conclude otherwise would effectively require us to adjudicate merits-related issues, which we decline to do at this stage of the proceeding. See Mississippi Power and Light Co. (Grand Gulf Nuclear Station, Units 1 & 2), ALAB-130, 6 AEC 423, 426 (1973) ("in passing upon the question as to whether an intervention petition should be granted, it is not the function of a licensing board to reach the merits of any contention contained therein"). The sole question before us is whether NIRS has submitted the requisite "minimal factual and legal foundation" (Oconee, CLI-99-11, 49 NRC at 334) to support its contention that AmerGen's monitoring activities in the sand bed region during the period of extended operation are not adequate to survey the degree and extent of thinning, determine if the corrosion process continues, and ensure that the required safety margins are maintained. We believe that it has. A contrary conclusion would, in our view, improperly turn the admissibility factors into "a fortress to deny intervention" (id. at 335) (internal quotation marks omitted), and wrongfully deprive NIRS of a hearing.

In concluding that NIRS's contention is within the scope of this proceeding, we are acutely mindful that a license renewal proceeding is "far more limited than the [Atomic Energy

Act] issues that we address when reviewing an initial operating license application” (Duke Energy Corp., CLI-02-26, 56 NRC at 364), because the Commission’s “ongoing regulatory oversight programs routinely address many safety issues and will continue to address them in years 41 through 60 of a plant’s life” (ibid.). “[C]onsideration of those issues in a license renewal proceeding would be unnecessary and wasteful” (ibid.).

As shown above, however, NIRS’s contention does *not* challenge Oyster Creek’s current, ongoing operations or programs conducted under the existing license. Rather, it focuses narrowly and permissibly on AmerGen’s aging management program for the period of extended operation, asserting that AmerGen’s monitoring activities in the sand bed region may not be sufficient to identify and control the effects of aging – i.e., corrosion – that will occur during the 20-year renewal period. This contention falls squarely within the scope of this proceeding. See Turkey Point, CLI-01-17, 54 NRC at 7-8 (license renewal inquiry includes “age-related degradation” of components that, left unmitigated, can “unacceptably reduce safety margins, and lead to the loss of required plant functions . . . with a potential for offsite exposures”).

In sum, we conclude that NIRS’s contention, narrowed to apply only to the sand bed region (supra p. 33), satisfies the admissibility requirements of 10 C.F.R. § 2.309(f)(1).<sup>36</sup>

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<sup>36</sup> In their supplemental briefs addressing the scope issue, AmerGen, NIRS, and the NRC Staff discussed relevant Commission case law. Although all of the cases cited by the parties ruled that the proposed contentions were inadmissible, each of the cases is easily distinguished from this case. For example, in Turkey Point, CLI-01-17, 54 NRC at 9, the Commission explained that emergency planning is a safety issue that is outside the scope of license renewal, because the Commission has “various regulations establishing standards for emergency plans . . . [that] are independent of license renewal and will continue to apply during the renewal term.” Here, in contrast, NIRS does *not* challenge safety issues that are governed by standards embedded in regulations; rather, NIRS permissibly contends that regulatory activities and requirements “may not be sufficient to manage the effects of aging in [the drywell liner during] the period of extended operation” (id. at 10) (quoting 60 Fed. Reg. at 22,469). In Turkey Point, the Commission also ruled that a safety-related contention regarding the impact of hurricanes or an aircraft crash on the spent fuel storage pool was outside the scope, because it did “not relate to managing the aging of systems, structures, and components” (id. at 23). Here, in contrast, NIRS’s contention goes to the heart of AmerGen’s aging management program related to

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potential corrosion of the drywell liner during the period of extended operation. In Duke Energy Corp., CLI-02-26, 56 NRC at 364, the Commission ruled that terrorism contentions are “related to security and are therefore, under our rules, unrelated to ‘the detrimental effects of aging’” and, consequently, outside the scope. Here, in contrast, NIRS’s contention is directly related to the detrimental effects of aging, and more specifically, the adverse effects of corrosion that may occur during the period of extended operation.

### III. MOTIONS

1. On December 29, 2005, AmerGen submitted a motion to strike “three new arguments and four new exhibits” from NIRS’s Reply Brief (AmerGen Motion to Strike at 3). The “new arguments” that AmerGen seeks to strike are: (1) NIRS’s argument that its contention seeks UT measurements *below* the sand bed region; (2) NIRS’s argument that AmerGen failed to comply with particular epoxy coating inspection standards; and (3) NIRS’s argument that excessive corrosion in the sand bed region could lead to buckling of the drywell liner (id. at 4-6). The “four new exhibits” that AmerGen seeks to strike are Exhibits 10, 11, and 12 (which NIRS allegedly used to show the presence of water in the drywell liner since 1992) and Exhibit 13 (which contained Dr. Hausler’s electronic signature that did not optically transmit with his memorandum) (id. at 6-8). NIRS opposes AmerGen’s motion ([NIRS] Opposition to AmerGen Motion to Strike (Jan. 13, 2006)).

We grant AmerGen’s motion in part, and deny it in part. First, regarding AmerGen’s motion to strike NIRS’s argument to construe its contention as seeking UT measurements below the sand bed region, our disposition of that issue has rendered AmerGen’s request moot (supra note 28). Second, we grant AmerGen’s motion to strike NIRS’s argument that AmerGen failed to comply with particular epoxy coating inspection standards, but our action in this regard does not alter our conclusion that NIRS legitimately contends that visual inspections alone of the epoxy coating will not provide reasonable assurance that pinhole leaks may provide a pathway for water intrusion in the coating and subsequent corrosion (see NIRS Petition at 11; NIRS Petition, Dr. Hausler Memo at 1-2). Third, we deny AmerGen’s request to strike NIRS’s argument that excessive corrosion in the sand bed region could lead to buckling of the drywell liner. NIRS has shown (NIRS Petition at 4-6, 9-10, 13; id., Exh. 4, Encl. 2, at 11; NIRS Reply at 11, 12) that the drywell liner is maintained both for structural support and as a pressure boundary,

that the sand bed region suffered severe corrosion, that the corrosion is in the form of an 8 to 18 inch wide band (or bathtub ring) around the liner, that the buckling criterion for the sand bed region is 0.736 inches, that the criterion has been violated in some areas of the sand bed region, and in other areas the margin of safety is as little as 0.064 inches. In our judgment, NIRS's Petition was sufficiently specific to put AmerGen on notice that the contention was concerned about the structural integrity of the sand bed region for purposes of buckling. Fourth, we deny AmerGen's motion to strike Exhibits 10, 11, and 12, because those documents – which were in AmerGen's possession – legitimately responded to AmerGen's Answer and amplified arguments in NIRS's Petition. Finally, for the reasons discussed supra note 33, we deny AmerGen's motion to strike Exhibit 13. We emphasize, however, that our decision to admit NIRS's contention would not change even if we were to disregard those four exhibits.

2. On February 7, 2006, NIRS submitted a motion to add new contentions or, in the alternative, to supplement the basis of its current contention. See Motion for Leave to Add Contentions or Supplement the Basis of the Current Contention (Feb. 7, 2006). On February 17, 2006, AmerGen and the NRC Staff filed responses opposing NIRS's motion. See AmerGen's Answer to [NIRS's] Motion for Leave to Add Contentions or Supplement the Basis of the Current Contention (Feb. 17, 2006); NRC Staff's Response to Motion for Leave to Add Contentions of Supplement the Basis of the Current Contention (Feb. 17, 2006). We will issue a ruling on this motion pending further consideration of the parties' arguments.

#### **IV. CONCLUSION**

For the foregoing reasons, we (1) deny New Jersey's Request for Hearing and Petition to Intervene (supra Part II.B),<sup>37</sup> (2) grant NIRS's Request for Hearing and Petition to Intervene

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<sup>37</sup> Pursuant to the Atomic Energy Act, 42 U.S.C. § 2021(I) (2000), the Commission's regulations provide that an interested State that has not been admitted as a party will be afforded a reasonable opportunity to participate in a hearing (10 C.F.R. § 2.315(c)). See Louisi-

(supra Part II.C), (3) grant in part and deny it in part AmerGen's Motion to Strike (supra Part III), and (4) take under consideration NIRS's Motion to Add Contentions (supra Part III). The hearing shall be conducted in accordance with the informal adjudicatory procedures prescribed in Subpart L of 10 C.F.R. Part 2.

This Memorandum and Order is subject to appeal in accordance with the provisions in 10 C.F.R. § 2.311. Any petitions for review meeting the requirements set forth in section 2.311 must be filed within ten days of service of this Memorandum and Order.

It is so ORDERED.

THE ATOMIC SAFETY  
AND LICENSING BOARD<sup>38</sup>

[Original signed by:]  
E. Roy Hawkens, Chairman  
ADMINISTRATIVE JUDGE

[Original signed by:]  
Dr. Paul B. Abramson \*  
ADMINISTRATIVE JUDGE

[Original signed by:]  
Dr. Anthony J. Baratta  
ADMINISTRATIVE JUDGE

\* Judge Abramson concurs with the Board's conclusions that (1) New Jersey and NIRS established standing, and (2) New Jersey failed to proffer an admissible contention. Judge Abramson disagrees, however, with the Board's conclusion that NIRS proffered an admissible contention. He has filed a dissenting opinion that immediately follows this Memorandum and Order.

Rockville, Maryland  
February 27, 2006

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<sup>38</sup> Copies of this Memorandum and Order and the accompanying opinion concurring in part and dissenting in part were sent this date by Internet e-mail to counsel for: (1) AmerGen; (2) New Jersey; (3) NIRS; and (3) the NRC Staff.

## **Dissenting Opinion of Judge Abramson, Disagreeing With The Board's Conclusion That NIRS Proffered An Admissible Contention**

While I concur with the majority's findings regarding the petition of the New Jersey State Department of Environmental Protection, I disagree, for the reasons set out below, with their findings regarding the contention of NIRS which relates to corrosion management.

The fundamental issue with respect to the contention proffered by NIRS is whether or not it relates to a matter within the scope of this proceeding, which is focused singularly upon "the detrimental effects of aging on the functionality of certain systems, structures, and components in the period of extended operation."<sup>1</sup> The point of conducting a hearing regarding a request for an extension of an operating license is to determine if the Commission has reasonable assurances that the plant can operate without endangering the health and safety of the public during any such period of extended operation. It is not to rehash issues that were addressed during the initial license review or that are being addressed during the license period by ongoing regulatory oversight. In fact, the Commission has been crystal clear that the scope of a license renewal hearing excludes, because it would be "unnecessary and wasteful," consideration of matters which are the subject of the "agency's ongoing regulatory oversight programs [which] routinely address many safety issues and will continue to address them in years 41 through 60 of a plant's life (assuming a grant of the renewal application)."<sup>2</sup> Therefore,

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<sup>1</sup> Final Rule, "Nuclear Power Plant License Renewal; Revisions," 60 Fed. Reg. 22,461, 22,464 (May 8, 1995).

<sup>2</sup> Duke Energy Corp. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-26, 56 NRC 358, 364 (2002).

this proceeding concerns only matters in which aging related degradation might reasonably be expected to arise during the period of proposed extended operation.

The contention submitted by NIRS undoubtedly relates to a problem of importance to the agency. In fact, it has been of such import that the agency has had an ongoing regulatory oversight program on THIS issue for THIS particular plant for more than 20 years.

Unfortunately, we are not presented with any useful analysis by the parties as to whether or not the corrosion issue raised by NIRS falls within the scope of matters within the purview of a hearing for a license renewal.<sup>3</sup> Nonetheless, that fact does not relieve us of our duty to thoroughly scrutinize the contention and determine whether it is inadmissible pursuant to governing law regardless of what was contained in the parties' briefs. The history of the corrosion at issue has been discussed at length by the majority and needs no repetition here. However, a short summary aids in understanding the reason for my concern.

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<sup>3</sup> In this regard, it is certainly not dispositive that the Commission mentioned corrosion as one of the sources from which "aging effects can result" (Florida Power & Light Co. (Turkey Point Nuclear Generating Plant), CLI-01-17, 54 NRC 3, 7 (2001) (emphasis added)). While it is certain that corrosion may be age related, for it to be so there must be a monotonic effect: i.e. greater time always results in greater corrosion. Where there is no exposure to a corrosive environment, there cannot be corrosion, and therefore a necessary element of a contention that age related degradation will take place due to corrosion is a reasoned and technically supported allegation that there is a corrosive environment.

This particular corrosion was initiated by a design or construction flaw or error (a faulty bellows and/or gasket, according to NIRS<sup>4</sup>) that caused the area above the drywell, which is flooded during refueling, to leak. As a result, water dripped slowly into the three-inch gap between the carbon steel drywell liner and a reinforced concrete shield structure surrounding it. There the water was retained by sand, which was originally installed in the lower portion of the gap, and slowly caused corrosion of the steel liner. The problem was discovered some twenty years ago<sup>5</sup> and the problem was addressed over a period of time: the sand was removed, the depth of the corrosion was measured, epoxy was placed over the corroded area to prevent further corrosion, the source of the leak was identified,<sup>6</sup> and steps were taken to keep water out of the gap between the steel liner and the surrounding shield wall.<sup>7</sup> Petitioners' principal

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<sup>4</sup> NIRS Petition at 5.

<sup>5</sup> Id. at 4, 5 (citing NRC Information Notice 86-99, Supplement 1 (Dec. 8, 1986) as stating that the problem was first recognized in the Oyster Creek plant in 1980 and that investigations were undertaken by the operator beginning in 1983).

<sup>6</sup> Oyster Creek Generating Station License Renewal Application (July 22, 2005) at 3.5-19 to 3.5-20.

<sup>7</sup> Id. at 4-54 to 4-55.

concern originates from their view that “water will be retained in the pores of the sand bed . . . and continue[ ] to support corrosion;”<sup>8</sup> however, NIRS’ petition recognizes that the sand was actually removed,<sup>9</sup> and the focus of that petition thereupon became the agency’s requirement that the licensee establish a program to measure the thickness of the remaining steel - that is, it focuses on the ongoing regulatory oversight.

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<sup>8</sup> NIRS Petition at 6.

<sup>9</sup> Id. at 7-8 (noting that sand removal was initiated nearly 20 years ago, in 1988, and completed in 1992).

NIRS' argument commences with the assertion that the drywell liner in what used to be the sand bed region has been reduced by corrosion to the point where it very closely approaches the minimum thickness required to prevent buckling load failure. However, nowhere in the original petition or the reply is the argument made by petitioners that buckling failure is a possibility.<sup>10</sup> In fact, petitioners point out that each of ten bays has a region of localized corrosion 8 to 18 inches wide and 30 to 40 inches long,<sup>11</sup> but they make no mention of the actual total circumference of the liner at that vertical location or what portion of it is corroded by these ten corrosion sites. Petitioners have not argued, and have presented no technical support for the proposition, that this apparently spaced pattern of reduction in thickness produces the type of weakening that could result in buckling failure; in fact, in 1992, the NRC Staff undertook a detailed review of a GE reanalysis of the potential for buckling failure and found no effect from removal of the sand or from the reduced thickness of the steel liner.<sup>12</sup>

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<sup>10</sup> Id. at 8. Petitioners note that the sand was originally installed to prevent buckling of the drywell liner at the transition from free standing, but they make no mention whatsoever of any effects that the removal of that sand might have upon the propensity of the liner for buckling failure. Nor do they present any discussion or offer any expert analysis or testimony to support an argument that the reduction in liner thickness caused by this corrosion increases the potential for buckling failure. In an apparent effort to cure this failing, petitioners' expert has submitted an affidavit accompanying petitioners' February 7, 2006 Motion for Leave to Add Contentions or Supplement the Basis of the Current Contention [hereinafter NIRS February Motion], in which he states the additional technical proposition that "localized corrosion probably occurred on the outside of the liner at the concrete-steel boundary," and added his conclusion that "the entire structure is not only in danger of buckling, but indeed of collapse." NIRS February Motion, Exhibit C at 3. The NIRS February Motion is opposed by AmerGen and the NRC Staff, and – as indicated in the majority opinion – it remains pending before the Board.

<sup>11</sup> NIRS Petition at 9.

<sup>12</sup> See NIRS Petition, Exhibit 3, at 4 (including an NRC Staff finding, from 1992, that "the Oyster Creek drywell has adequate margin against buckling with no sand support for an assumed sand bed region shell thickness of 0.736 inch" [the measured minimum thickness remaining after corrosion]. The Staff went on to observe that the results of this stress analysis can only be interpreted to represent the corroded areas and noted it is essential that the licensee perform thickness measurements at all available opportunities and at various accessible areas "so as to confirm that the thickness of the corroded areas are as projected and

In 1995, the licensee reported that “the corrosion has been arrested in the sand bed region of the drywell.”<sup>13</sup>

The effects of this particular corrosion and whether or not it has been or will continue to be properly monitored is a matter for the agency’s Office of Enforcement because it is the subject of an ongoing regulatory oversight program; the corrosion was a temporary problem, not related to aging, and therefore inappropriate subject matter for this proceeding.

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the corroded areas are localized.” Id. at 5.

<sup>13</sup> NIRS Petition, Exhibit 6, at 1. In this regard, petitioners imply that the reductions in thickness could cause the drywell liner to leak when pressurized by the consequences of a severe accident. NIRS Petition at 4. However, that speculation is entirely without argument or support.

Notwithstanding the attention devoted by NIRS in their petition to the amount of previous corrosion, the primary impact, in fact, is to challenge the efficacy of the ongoing regulatory oversight program,<sup>14</sup> contending that the program is insufficient to determine the extent of existing, or - as petitioners imply but do not assert - future corrosion.<sup>15</sup> The NRC Staff points out the existence of the approved drywell inspection and corrosion management program, but the Staff fails to analyze the impacts upon the admissibility of the petitioners' contention of either: (a) the fact that this was a temporary problem which has been discovered and addressed and is believed to have been resolved; or (b) that this regulatory oversight program has been ongoing for two decades. Similarly, the applicant merely mentions the fact that its drywell management program has been approved by the agency but proffers no analysis of the effect of this program upon the admissibility of this contention.<sup>16</sup>

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<sup>14</sup> NRC Staff Answer to NIRS Petition at 12-16.

<sup>15</sup> See, e.g., NIRS Petition at 12-14.

<sup>16</sup> AmerGen Answer to NIRS Petition at 21, 26-27.

Admissibility here of such a challenge requires examination of the proper scope of a license renewal proceeding. For a contention to be admissible in a proceeding regarding a proposed license period extension, it must relate to the “detrimental effects of aging.”<sup>17</sup> Here, the degradation cited by petitioners was the result of a temporary situation caused by a design or construction flaw or error. Once such a temporary situation has been cured, there is no longer any effect from it, and therefore there is no nexus to aging. While the degradation was indeed serious, its existence demonstrates no aging related degradation. That said, it is nonetheless possible that there could be aging related effects from corrosion caused by the atmosphere to which the liner is always subjected. However, petitioners have not made such an argument, instead making only an oblique unsupported assertion that “wet conditions occurring over the past 12 years behind the epoxy coating can reasonably contribute to corrosion,”<sup>18</sup> but offering no support for the proposition that wet conditions have indeed occurred over the past twelve years, and making no mention of the conditions to be expected going forward from the date of their petition or during the period of extended operation.

Even if we assume (which we are not permitted to do<sup>19</sup>), that petitioners intended to make such an assertion for the period of extended operation, the fact that the proposition is wholly unsupported and therefore entirely speculative causes this contention to fail at the threshold – it fails to present any fact or expert opinion supporting the proposition that a corrosive environment would be present during the period of extended operation and therefore

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<sup>17</sup> Turkey Point, CLI-01-17, 54 NRC at 7.

<sup>18</sup> NIRS Petition at 11.

<sup>19</sup> Louisiana Energy Services, L.P. (National Enrichment Facility), LBP-04-14, 60 NRC 40, 56 (2004); Duke Cogema Stone & Webster (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 422 (2001); Arizona Public Service Co. (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991).

fails to raise any issue related to that period with the required specificity and support. I therefore conclude that the petitioners' contention fails because – in the complete absence of information suggesting that the steel liner would be subject to a corrosive environment in the future – the contention raises no issue relating to the detrimental effects of aging.

Noting my opinion that the contention has failed because it did not raise any issue within the scope of this proceeding, I am nonetheless compelled by the Majority's analysis to address a secondary issue: if the petition had indeed raised an issue related to the "detrimental effects of aging,"<sup>20</sup> the contention would still be inadmissible unless it either (a) raised an issue that was not the subject of an ongoing regulatory oversight program, or (b) presented a colorable and supported argument that the ongoing regulatory oversight program was insufficient to manage the problem over the period of extended operation. Here the corrosion problem unique to this plant has been the subject of an ongoing regulatory oversight program for two decades, but petitioners contend that the oversight program is insufficient. Thus, this contention, had it passed the threshold test, might have been interpreted to fall within the carve-out of clause (b) above. A careful examination of what petitioners claim the deficiency to be reveals, however, that petitioners' complaint makes no reasoned and supported argument that the ongoing regulatory program will be insufficient during the period of extended operation; instead, it challenges the methodology used by the licensee (and approved by the NRC Staff) to address the previous corrosion and to determine whether or not that corrosion has indeed been arrested. For this contention to relate to the period of extended operation, petitioners would have had to argue and present support for the proposition that (a) the liner would be exposed to a corrosive environment in the period of extended operation, as discussed above, and (b) the ongoing regulatory program is insufficient to address the effects of this exposure. Petitioners'

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<sup>20</sup> Turkey Point, CLI-01-17, 54 NRC at 7.

contention fails here for the same reason that it failed the threshold test: it simply fails to argue or support the necessary kernel of the issue - the future presence of a corrosive environment.

For the foregoing reasons, I dissent from the majority opinion to the extent it concludes that NIRS' contention is admissible.