

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

April 3, 2015

Counsel for Entergy Nuclear Operations, Inc.

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**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:

ENTERGY NUCLEAR OPERATIONS, INC.

(Palisades Nuclear Plant)

)
) Docket No. 50-255-LA-2
)
)
)
) April 3, 2015
)
)

ENTERGY'S ANSWER
OPPOSING PETITION TO INTERVENE AND REQUEST FOR HEARING

I. INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(i), Entergy Nuclear Operations, Inc. (“Entergy”) submits this answer opposing the petition to intervene and request for hearing filed on March 9, 2015 (“Petition”), by Beyond Nuclear, Don’t Waste Michigan, Michigan Safe Energy Future - Shoreline Chapter, and the Nuclear Energy Information Service (“NEIS”) (collectively, “Petitioners”).¹

On January 6, 2015, the U.S. Nuclear Regulatory Commission (“NRC” or “Commission”) published in the *Federal Register* a notice of an opportunity to request a hearing (“Notice”)² on Entergy’s November 12, 2014 license amendment request (“LAR”)³ for Palisades Nuclear Plant (“Palisades”). The LAR seeks NRC approval of a Westinghouse equivalent

¹ Petition to Intervene and for a Public Adjudication Hearing of Entergy License Amendment Request for Approval of 10 CFR Part 50 Appendix G Equivalent Margins Analysis (Mar. 9, 2015).

² Biweekly Notice; Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving No Significant Hazards Considerations (“NSHC”), 80 Fed. Reg. 520, 523-24 (Jan. 6, 2015) (“Notice”).

³ PNP 2014-099, Letter from A. Vitale to NRC Document Control Desk, License Amendment Request for Approval of Palisades Nuclear Plant 10 CFR 50 Appendix G Equivalent Margins Analysis (Nov. 12, 2014) (“LAR”), available at ADAMS Accession No. ML14316A370.

margins analysis (“EMA”) for the Palisades reactor pressure vessel (“RPV”),⁴ submitted to meet the requirements of 10 C.F.R. Part 50, Appendix G. To be granted a hearing in this proceeding, the Petitioners must demonstrate standing and submit at least one admissible contention.⁵

The Petition proffers a single proposed contention.⁶ The proposed contention generally alleges that the “methods of prediction” in the Palisades Charpy upper shelf energy (“USE”) calculations “do not provide adequate assurance of margins of safety” equivalent to those in the American Society of Mechanical Engineers Boiler & Pressure Vessel Code Section XI (“ASME Code”) Appendix G.⁷ Petitioners assert that “mere calculated predictions” are insufficient to assure safe operation, and that “testing of coupon material” should be conducted in lieu of an EMA authorized by 10 C.F.R. Part 50, Appendix G.⁸ As demonstrated below, Petitioners’ claims are fundamentally a collateral attack on the Commission’s regulations in 10 C.F.R. Part 50, Appendix G, and on the current licensing basis (“CLB”) for Palisades and therefore are inadmissible pursuant to 10 C.F.R. §§ 2.335 and 2.309(f)(1)(iii).

Petitioners’ remaining claims are outside the scope of this proceeding, not material, unsupported, and fail to raise a genuine dispute on a material issue of law or fact. Those claims are, therefore, also inadmissible pursuant to 10 C.F.R. §§ 2.309(f)(1)(iii), (iv), (v), and (vi). In

⁴ LAR, Attachment 5, WCAP-17651-NP, Revision 0, Palisades Nuclear Power Plant Reactor Vessel Equivalent Margins Analysis (Feb. 2013) (“Palisades EMA”), *available at* ADAMS Accession No. ML14316A208.

⁵ *See* 10 C.F.R. § 2.309(a).

⁶ The Petition also purports to “incorporate by reference and reallege” its entire petition from a separate Palisades license amendment proceeding (“50.61a Proceeding”), involving a separate license amendment request (“50.61a LAR”) regarding Entergy’s request to implement the alternate pressurized thermal shock rule, 10 C.F.R. § 50.61a, at Palisades. Petition at 7. Such incorporation by reference is impermissible. *Pub. Serv. Co. of N.H.* (Seabrook Station, Units 1 & 2), CLI-89-3, 29 NRC 234, 241 (1989) (“a wholesale incorporation by reference does not serve the purposes of a pleading”). Entergy has already addressed Petitioners’ challenges to the 50.61a LAR. *See Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), Docket No. 50-255-LA, Entergy’s Answer Opposing Petition to Intervene and Request for Hearing (Jan. 12, 2015) (“50.61a Answer”), *available at* ADAMS Accession No. ML15012A532. In addition, several aspects of the Petition are directly copied from the 50.61a Petition with few, if any, modifications.

⁷ Petition at 2.

⁸ *Id.*

addition, one petitioner, NEIS, has not met its burden to show standing in this license amendment proceeding pursuant to 10 C.F.R. § 2.309(d).

For all these reasons, the Petition should be denied in its entirety.

II. PROCEDURAL HISTORY

Under 10 C.F.R. Part 50, Appendix G, Section IV.A.1.a, RPV beltline materials are required to “maintain Charpy [USE] throughout the life of the vessel of no less than 50 ft-lb (68 J), *unless* it is demonstrated . . . that lower values of Charpy [USE] will provide margins of safety against fracture equivalent to those required by Appendix G of Section XI of the ASME Code.”⁹ Such demonstration is commonly referred to as an EMA, which must be submitted for NRC approval “as specified in [10 C.F.R.] § 50.4 . . . at least three years prior to the date when the predicted Charpy [USE] will no longer satisfy the [50 ft-lb requirement], or on a schedule approved by the Director, Office of Nuclear Reactor Regulation [or “NRR”].”¹⁰

The 2005 license renewal application for Palisades explained that the Charpy USE for one RPV material was estimated to decrease below 50 ft-lb by the end of the period of extended operation (“PEO”).¹¹ Accordingly, the licensee committed to submit an EMA¹² “at least three years prior to the date when the predicted Charpy [USE] will no longer satisfy the requirements of [10 C.F.R. Part 50, Appendix G] section IV.A.1.”¹³ In a subsequent 2011 analysis, Entergy identified three Palisades RPV materials as potentially dropping below the 50 ft-lb screening

⁹ 10 C.F.R. Part 50, App. G § IV.A.1.a (emphasis added). Charpy USE and the relevant technical analyses are discussed further *infra* in Section IV.A.

¹⁰ *Id.* § IV.A.1.c.

¹¹ Palisades Nuclear Plant, Application for Renewed Operating License at 4-12 (Mar. 22, 2005) (“Palisades License Renewal Application”), *available at* ADAMS Accession No. ML050940446. In 2005, the licensee for Palisades was Nuclear Management Co., LLC. Entergy purchased Palisades and became the licensee in 2007. *See* In the Matter of Consumers Energy Company Nuclear Management Company (Palisades Nuclear Plant); Order Approving Transfer of License and Conforming Amendment, 72 Fed. Reg. 19,057 (Apr. 16, 2007).

¹² Palisades License Renewal Application at 4-12.

¹³ 10 C.F.R. Part 50, App. G, § IV.A.1.c.

criterion—the earliest in December 2016.¹⁴ Entergy submitted the Palisades EMA, consistent with its commitment, under the provisions of 10 C.F.R. § 50.4 on October 21, 2013,¹⁵ and later resubmitted the Palisades EMA in the form of a LAR on November 12, 2014.¹⁶ The Palisades EMA concludes that “[t]he Palisades reactor vessel beltline and extended beltline regions with predicted Charpy [USE] levels falling below 50 ft-lb . . . were evaluated for equivalent margins of safety per the ASME Code . . . and found to be acceptable.”¹⁷

The NRC accepted the LAR for docketing, and published the Notice on January 6, 2015.¹⁸ The Notice included the NRC Staff’s proposed No Significant Hazards Consideration (“NSHC”) determination and provided interested parties 60 days (*i.e.*, until Monday, March 9, 2015) to request a hearing related to the LAR.¹⁹

The Petition²⁰ includes one proposed contention, which states the following:

The methods of prediction used by Entergy concerning whether steel plate and weld materials within the reactor pressure vessel (“RPV”) at the Palisades Nuclear Power Plant possess Charpy upper shelf energy (“USE”) values of less than 50 ft.-lbs. of ductility stress do not provide adequate assurance of margins of safety against fracture or rupture which are equivalent to those

¹⁴ See PNP 2011-016, Letter from T. Kirwin to NRC Document Control Desk, License Amendment Request for Primary Coolant System Pressure-Temperature Limits, Attachment 1, at 7 (Mar. 7, 2011), *available at* ADAMS Accession No. ML110730082; Westinghouse WCAP-17403-NP, Revision 1, Palisades Nuclear Power Plant Extended Beltline Reactor Vessel Integrity Evaluation at vi (Jan. 2013), *available at* ADAMS Accession No. ML14316A199.

¹⁵ PNP 2013-028, Letter from A. Vitale to NRC Document Control Desk, Palisades Nuclear Plant 10 CFR 50 Appendix G Equivalent Margins Analysis (Oct. 21, 2013), *available at* ADAMS Accession No. ML13295A448.

¹⁶ See LAR.

¹⁷ Palisades EMA at 6-1.

¹⁸ Notice, 80 Fed. Reg. at 523.

¹⁹ *Id.* at 521.

²⁰ The Petition suffers from a threshold deficiency in that Petitioners’ counsel has not filed a Notice of Appearance in this proceeding, contrary to 10 C.F.R. § 2.314(b). Petitioners bear the burden of demonstrating that they have authorized their representative appearing in the proceeding. See *Ga. Power Co.* (Vogtle Elec. Generating Plant, Units 1 & 2), LBP-90-29, 32 NRC 89, 92 (1990).

required by Appendix G of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code.²¹

In support, Petitioners filed a copy of the “Declaration of Arnold Gundersen,” dated December 1, 2014, (“Gundersen Declaration”)—the same declaration Petitioners filed to support their petition in the separate proceeding regarding Entergy’s 50.61a LAR;²² a document titled “Nuclear Reactor Pressure Vessel Crisis: Greenpeace Briefing,” dated February 15, 2015 (“Greenpeace Briefing”); and declarations of standing and representation authorization from each of the four Petitioners.²³

III. ANALYSIS OF PETITIONERS’ STANDING

Petitioners bear the burden of establishing standing.²⁴ Section IV.A of Entergy’s 50.61a Answer provides a summary of the general legal standards governing standing in NRC proceedings and is not repeated here. In this proceeding, the four Petitioners assert standing in a representational capacity on behalf of four named individual members—one for each organization. Based on the proposed contention and representations of the members of Beyond Nuclear, Don’t Waste Michigan, and Michigan Safe Energy Future – Shoreline Chapter, Entergy does not object to the standing of these three organizations in this proceeding.

NEIS, however, lacks standing because its member has not demonstrated standing in her own right.²⁵ NEIS presents a declaration from Gail Snyder, which does not provide an address for her property (or any means of verifying its “approximate” distance from Palisades), and does

²¹ Petition at 2; 12.

²² *See Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), Docket No. 50-255-LA, Petition to Intervene and for a Public Adjudication Hearing of Entergy License Amendment Request for Authorization to Implement 10 CFR §50.61a, “Alternate Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events” (Dec. 1, 2014) (“50.61a Petition”), *available at* ADAMS Accession No. ML14335A807.

²³ *See* Petition at first eight unnumbered pages following p. 27.

²⁴ *See PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-07, 71 NRC 133, 139 (2010).

²⁵ *See Consumers Energy Co.* (Palisades Nuclear Power Plant), CLI-07-18, 65 NRC 399, 408-10 (2007).

not describe the frequency or duration of visits by her or her unspecified “family members.”²⁶ A lack of specificity as to property location or frequency or duration of visits is sufficient to reject a claim of standing.²⁷ In the *Bell Bend* COL proceeding, for example, the Commission affirmed a Board decision rejecting standing because the Petitioner did not adequately specify the nature, extent, and duration of his contacts with the area sufficient to demonstrate that he had “substantial” and “regular” contacts within the vicinity of the site.²⁸ Ms. Snyder’s statements provide even less specificity. Merely owning land near a power reactor, moreover, is also insufficient.²⁹ Accordingly, the Board should find that NEIS has not proffered a sufficient claim of organizational standing.³⁰

IV. TECHNICAL BACKGROUND

A. The NRC Guidance and Precedent on EMAs

As previously noted, 10 C.F.R. Part 50, Appendix G, Section IV.A.1.a, sets forth minimum Charpy USE³¹ values for RPV beltline materials, but specifically allows licensees to

²⁶ Petition at eighth unnumbered page following p. 27 (“Snyder Declaration”).

²⁷ *Private Fuel Storage, L.L.C.* (Indep. Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 324 (1999).

²⁸ *Bell Bend*, CLI-10-07, 71 NRC at 139-40.

²⁹ *Nuclear Fuel Servs., Inc.* (Erwin, Tenn.), LBP-04-5, 59 NRC 186, 194 (2004) (holding that a petitioner who owned a home 20 miles from the facility did not have standing where she did not permanently occupy the home as a permanent residence, but intended to within 5 years, and despite the fact that she had caretakers farming the land for her). In some limited circumstances, a claim of actual harm to a property interest can be sufficient to establish standing. See *USEC, Inc.* (Am. Centrifuge Plant), CLI-05-11, 61 NRC 309, 314 (2005). However, the facts in *USEC* are quite distinct from the present circumstances. In *USEC*, the petitioner was found to have a genuine property interest in a specifically-identified 200-year-old house located “between a half mile and a mile” from the proposed facility, where the petitioner was concerned about damage to the property from an explosion, and where the petitioner filed a copy of the deed with the Board and was “in the process of moving” into the home to make it his “primary and permanent residence.” *Id.* at 313-14. Here, Ms. Snyder only vaguely states that her property is “approximately” fifteen miles from Palisades, acknowledges there is no physical residence, and explicitly disavows the notion of ever building a house or residing on the property. See Snyder Declaration.

³⁰ See *Palisades*, CLI-07-18, 65 NRC at 408-10.

³¹ The materials used in RPVs are subject to brittle failure at lower temperatures, and ductile failure at higher temperatures. Charpy USE is developed from impact testing which determines the point where the material exhibits fully ductile behavior.

submit an EMA demonstrating equivalent margins of safety against fracture for materials that are predicted to experience Charpy USE values below the specified threshold values before the end of the PEO.³² EMAs are a standard tool for evaluating RPV fracture toughness, fully contemplated in the 10 C.F.R. Part 50 regulations. This concept has been a part of the regulations since Appendix G was first promulgated in 1973.³³

The fracture toughness provisions in 10 C.F.R. Part 50, Appendix G were intended to implement General Design Criterion 31, “Fracture Prevention of Reactor Coolant Pressure Boundary,” of 10 C.F.R. Part 50, Appendix A, “General Design Criteria for Nuclear Power Plants,” and generally track the language of the ASME Code Appendix G.³⁴ ASME Code Appendix K specifies the well-established methodology for demonstrating safety margins equivalent to those in ASME Code Appendix G.³⁵ This methodology accounts for different postulated flaw depths, locations, and orientations, as well as other criteria.³⁶ Regulatory Guide (“RG”) 1.161 builds upon that methodology and provides more complete guidance and specific criteria (developed by the ASME Boiler & Pressure Vessel Code Committee), with particular emphasis on selection of transients and material properties.³⁷ RG 1.161 provides comprehensive guidance acceptable to the NRC Staff for evaluating margins of safety for RPV materials when the Charpy USE is predicted to fall below 50 ft-lb before the end of the PEO.³⁸ Guidance

³² 10 C.F.R. Part 50, App. G § IV.A.1.a.

³³ Fracture Toughness and Surveillance Program Requirements, 38 Fed. Reg. 19,012, 19,015 (July 17, 1973) (“Appendix G SOC”) (allowing exceptions to minimum USE values if “it is demonstrated to the Commission by appropriate data and analyses . . . that lower values of upper shelf fracture energy are adequate”).

³⁴ *Id.* at 19,013.

³⁵ Regulatory Guide 1.161, Evaluation of Reactor Pressure Vessels with Charpy Upper-Shelf Energy Less than 50 ft-lb. at 1.161-1 (June 1995), *available at* ADAMS Accession No. ML003740038 (“RG 1.161”).

³⁶ *See* Palisades EMA at 2-1.

³⁷ RG 1.161 at 1.161-1.

³⁸ *See id.*

documents developed to assist in compliance with NRC regulations, such as RG 1.161, are entitled to “special weight” in NRC adjudicatory proceedings.³⁹

As explained in RG 1.161, the material property used to characterize ductile tearing (the dominant fracture process in the upper-shelf region of the Charpy impact energy versus temperature curve for RPV materials) is the material’s J-integral fracture resistance: the “J-R curve.”⁴⁰ This curve is a function of the material, irradiation condition, loading rate, and material temperature.⁴¹ In general, the EMA must show that the crack driving force is less than the material’s toughness, and that the postulated flaw is stable under ductile crack growth conditions.⁴² The analysis must cover all service conditions.⁴³ If the acceptance criteria in the ASME Code are met, then the licensee has shown that there are margins of safety against fracture equivalent to those required under ASME Code Appendix G, and therefore the regulations are satisfied.⁴⁴

B. The Palisades EMA

As noted above, in the Palisades license renewal application, the licensee noted that the Charpy USE for one RPV material was estimated to decrease below 50 ft-lb before the end of the

³⁹ See *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 & 3), CLI-15-6, 81 NRC ___, slip op. at 19, 21 n.85, 22 (Mar. 9, 2015); *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 315 (2012).

⁴⁰ See RG 1.161 at 1.161-1.

⁴¹ *Id.*

⁴² These are also referred to as the “flaw extension criterion” and “flaw stability criterion,” respectively. See Palisades EMA at 3-1 (citing 10 C.F.R. Part 50, App. G and ASME Code, Section XI, App. K, Article K-2000); see also RG 1.161 at 1.161-3.

⁴³ See RG 1.161 at 1.161-3 (citing ASME Code App. G and 10 C.F.R. Part 50, App. G).

⁴⁴ See 10 C.F.R., Part 50, App. G, § IV.A.1.

PEO, and committed to submit an EMA in accordance with 10 C.F.R. Part 50, Appendix G, Section IV.A.1.⁴⁵

To meet this commitment, Westinghouse performed Charpy USE evaluations for the Palisades RPV materials.⁴⁶ These reports concluded that materials in three locations, upper shell plate D-3802-3, lower shell plate D-3804-1, and circumferential weld 9-112 (Heat #27204), are predicted to drop below the 50 ft-lb limit established in 10 C.F.R. Part 50, Appendix G, by the end of the PEO.⁴⁷ Although Westinghouse proposed a methodology that could demonstrate compliance with the 50 ft-lb limit for upper shell plate D-3802-3, Entergy elected to perform an EMA on this material, as a proactive matter, in case future operation results in higher flux levels.⁴⁸ Thus, the EMA covers three Palisades RPV materials. Other than these three materials, the remaining RPV materials are projected to remain above the Charpy USE screening criterion of 50 ft-lb through the end of the PEO.⁴⁹

For the three materials in question, following the ASME Code and the guidance in RG 1.161, the Palisades EMA determined that “[t]he Palisades reactor vessel beltline and extended beltline regions with predicted Charpy [USE] levels falling below 50 ft-lb . . . were evaluated for equivalent margins of safety per the ASME Code . . . and found to be acceptable” because they meet the criteria in ASME Code Appendix K, and because all materials are bounded by the conservative data specified in NUREG/CR-5265 and RG 1.161.⁵⁰ Thus, there is

⁴⁵ Palisades License Renewal Application at 4-12; NUREG-1871, Safety Evaluation Report Related to the License Renewal of Palisades Nuclear Plant at 4-4 (Jan. 2007), *available at* ADAMS Accession No. ML062710074.

⁴⁶ *See* Palisades EMA at 1-1.

⁴⁷ *See id.*

⁴⁸ *See id.*

⁴⁹ *See* LAR, Attachment 1, at 2.

⁵⁰ Palisades EMA at 6-1 (citing NUREG/CR-5265, Size Effects on J-R Curves for A 302-B Plate (Jan. 1989) (“NUREG/CR-5265”)).

reasonable assurance that all of the Palisades RPV materials will provide margins of safety equivalent to those in ASME Code Appendix G, through the end of the plant's licensed life.

V. PETITIONERS' CONTENTION IS INADMISSIBLE

A. Governing Legal Standards for Contention Admissibility

Under 10 C.F.R. § 2.309(f)(1), a hearing request “must set forth with particularity the contentions sought to be raised.” Section 2.309(f)(1)(i) through (vi) identifies the six admissibility criteria for each proposed contention.⁵¹ Failure to comply with any one of the six admissibility criteria is grounds for rejecting a proposed contention.⁵² The Commission has stated that it “should not have to expend resources to support the hearing process unless there is an issue that is appropriate for, and susceptible to, resolution in an NRC hearing.”⁵³

Of particular relevance here is the longstanding principle that a contention that challenges an NRC rule is outside the scope of the proceeding under 10 C.F.R. § 2.309(f)(1)(iii) and, therefore, inadmissible. This is because, absent a waiver, “no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding.”⁵⁴ This includes contentions that advocate stricter requirements than agency rules impose, or that otherwise seek to litigate a generic determination established by a Commission rulemaking.⁵⁵

⁵¹ Each proposed contention must: (i) provide a specific statement of the legal or factual issue sought to be raised; (ii) provide a brief explanation of the basis for the contention; (iii) demonstrate that the issue raised is within the scope of the proceeding; (iv) demonstrate that the issue raised 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, including references to specific sources and documents that support the petitioner's position and upon which the petitioner intends to rely; and (vi) provide sufficient information to show that a genuine dispute exists with regard to a material issue of law or fact. 10 C.F.R. § 2.309(f)(1).

⁵² See *Changes to Adjudicatory Process*, 69 Fed. Reg. 2182, 2221 (Jan. 14, 2004); see also *Private Fuel Storage*, CLI-99-10, 49 NRC at 325.

⁵³ *Changes to Adjudicatory Process*, 69 Fed. Reg. at 2202.

⁵⁴ 10 C.F.R. § 2.335(a).

⁵⁵ See *Crow Butte Res., Inc.* (Marsland Expansion Area), LBP-13-6, 77 NRC 253, 284 (2013), *aff'd*, CLI-14-2, 79 NRC 11 (2014); see also *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 251 (1996).

For license amendment proceedings, such as this one, the scope of a proceeding is defined by the Commission's notice of opportunity for a hearing.⁵⁶ The Notice for this proceeding explains: "Contentions shall be limited to matters within the scope of the amendment under consideration."⁵⁷ Any contention that falls outside the specified scope of the proceeding must be rejected.⁵⁸ In that regard, contentions that challenge the CLB, including previously-approved license amendments, rather than the proposed amendment, are not admissible in a license amendment proceeding.⁵⁹

With respect to factual information or expert opinion proffered in support of a contention, "the Board is not to accept uncritically the assertion that a document or other factual information or an expert opinion supplies the basis for a contention."⁶⁰ "[A]n expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing *a reasoned basis or explanation* for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion" as it is alleged to provide a basis for the contention.⁶¹

Any supporting material provided by a petitioner, including those portions thereof not relied upon, is subject to Board scrutiny, "both for what it does and does not show."⁶² The Board

⁵⁶ See *Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), ALAB-825, 22 NRC 785, 790-91 (1985).

⁵⁷ Notice, 80 Fed. Reg. at 521.

⁵⁸ See *Portland Gen. Elec. Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n.6 (1979) (affirming the licensing board's rejection of issues raised by intervenors that fell outside the scope of issues identified in the notice of hearing); see also *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 204 (1998).

⁵⁹ *Wis. Elec. Power Co.* (Point Beach Nuclear Plant, Units 1 & 2), LBP-82-88, 16 NRC 1335, 1342 (1982).

⁶⁰ *Private Fuel Storage, L.L.C.* (Indep. Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998), *aff'd*, CLI-98-13, 48 NRC 26, 37 (1998).

⁶¹ *USEC, Inc.* (Am. Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (emphasis added) (quoting *Private Fuel Storage*, LBP-98-7, 47 NRC at 181).

⁶² See *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 (1996), *rev'd in part on other grounds*, CLI-96-7, 43 NRC 235.

will examine documents to confirm that they support the proposed contentions.⁶³ A petitioner's imprecise reading of a document cannot be the basis for a litigable contention.⁶⁴ Moreover, vague references to documents do not suffice—the petitioner must identify specific portions of the documents on which it relies.⁶⁵

B. The Proposed Contention Is Inadmissible

The proposed contention appears to contain eight discrete bases: (1) the EMA is a “mere calculated prediction,” whereas physical ductile strength testing of coupon material is necessary for a genuine estimate of safety;⁶⁶ (2) the 50.61a LAR is unacceptable, as described in the 50.61a Petition;⁶⁷ (3) there is allegedly no NRC guidance on the potential for “cleavage mode-conversion of the ductile tearing process” in RPV components with low Charpy USE;⁶⁸ (4) the Palisades EMA credits materials for high nickel content, but nickel impurities allegedly worsen RPV neutron embrittlement and PTS risk;⁶⁹ (5) the EMA itself is an untried methodological approach,⁷⁰ involving manipulated data;⁷¹ (6) Palisades is being operated as a test or experiment;⁷² (7) as discussed in a recent “Greenpeace Briefing,” Belgian regulators have discovered “microcracks” in RPV “beltline ring forgings,” so such components must be “closely

⁶³ See *Vt. Yankee Nuclear Power Corp.* (Vt. Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 48 (1989), *vacated in part on other grounds and remanded*, CLI-90-4, 31 NRC 333 (1990).

⁶⁴ See *Ga. Inst. of Tech.* (Ga. Tech Research Reactor, Atlanta, Ga.), LBP-95-6, 41 NRC 281, 300 (1995), *aff'd*, CLI-95-12, 42 NRC 111, 124 (1995).

⁶⁵ *Pub. Serv. Co. of N.H.* (Seabrook Station, Units 1 & 2), CLI-89-3, 29 NRC 234, 241 (1989) (further stating that the mere incorporation of massive documents by reference is unacceptable).

⁶⁶ Petition at 2.

⁶⁷ *Id.* at 7, 22-23.

⁶⁸ *Id.* at 20-21.

⁶⁹ *Id.* at 19-20.

⁷⁰ *Id.* at 15; Gundersen Declaration ¶ 45.5.

⁷¹ Gundersen Declaration ¶ 46.

⁷² Petition at 16-19.

examined”;⁷³ and (8) Entergy received a “white finding” for an incident involving worker radiation exposure during a control rod drive mechanism replacement project, suggesting that “avoidance of worker radiation dose” is not a valid reason for “avoiding metal surveillance coupon testing.”⁷⁴

As demonstrated in the remainder of this section, nearly all of these bases raise issues that are outside the scope of the present proceeding and are not material to any finding the NRC must make to grant the LAR. In addition, all eight bases lack support in alleged facts or expert opinion, and fail to raise a genuine dispute on a material issue of law or fact.⁷⁵

More generally, as the Board in the *Davis-Besse* license renewal proceeding recently observed in rejecting a contention proffered by some of these same Petitioners, the:

Intervenors do not challenge [the underlying] analyses. In effect, Intervenors’ claims boil down to requests for more testing, more methods of testing, and more information, all of which are sought without explaining why the current program is inadequate. This is not sufficient to create a genuine dispute with [the application].⁷⁶

So too here. As a result, the Petition should be denied.

⁷³ *Id.* at 21-22.

⁷⁴ *Id.* at 23-24 (referring to the requirements for a Reactor Vessel Material Surveillance Program in 10 C.F.R. Part 50, App. H).

⁷⁵ To the extent the statement of the contention challenges “[t]he methods of prediction used by Entergy concerning *whether* . . . materials within the . . . RPV . . . possess Charpy upper shelf energy (“USE”) values of less than 50 ft.-lbs,” such challenges are unsupported, in that the remainder of the Petition does not discuss this issue, and immaterial, in that Entergy submitted the EMA *because there were* materials with projected Charpy USE values below 50 ft.-lbs at the end of plant life. The Board is not empowered to make factual inferences to craft an admissible contention for the Petitioners. *See, e.g., Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-14, 71 NRC 449, 464 n.80 (2010).

⁷⁶ *See FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), LBP-15-1, 81 NRC ___, slip op. at 30 (Jan. 15, 2015) (emphasis added). Beyond Nuclear and Don’t Waste Michigan, represented by counsel, Terry J. Lodge, were parties to the *Davis-Besse* proceeding. Mr. Gundersen was also petitioners’ expert in an earlier stage of the *Davis-Besse* proceeding. *See FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), Memorandum and Order (Denying Intervenors’ Motion for Admission of Contention No. 6 on Shield Building Concrete Void, Cracking, and Broken Rebar Problems) at 12 (July 25, 2014) (unpublished).

1. The Primary Issues Raised in the Contention are Outside the Scope of This Proceeding

a. Petitioners' Challenge to Commission Regulations is Outside the Scope of this Proceeding

The first and leading basis for the proposed contention is Petitioners' "position . . . that the continued safe operation of Palisades is not assured by *mere calculated predictions* [because] . . . a genuine estimate of safety . . . requires . . . physical ductile strength testing of coupon material."⁷⁷ Similarly, Petitioners argue that because there are surveillance capsules in the Palisades RPV that have not been removed and tested, Entergy should not be permitted to demonstrate safety margins (for RPV materials with Charpy USE predicted to fall below 50 ft-lbs) through an EMA.⁷⁸ According to Petitioners, the coupon schedule "calls into question Entergy's motivation" for submitting the EMA in the first instance.⁷⁹ Petitioners also refer to a general observation in a 1995 NRC guidance document regarding the availability of surveillance data,⁸⁰ and to certain requirements in 10 C.F.R. Part 50, Appendix H, regarding surveillance programs, alleging that "Entergy has made no showing of any substantial advantage to be gained from a 16-year hiatus from destructive testing" as specified in Appendix H.⁸¹

However, all of these claims are a collateral attack on Commission regulations, prohibited under 10 C.F.R. § 2.335,⁸² and on the Palisades CLB. Accordingly, they are outside the scope of this proceeding under 10 C.F.R. §§ 2.309(f)(1)(iii).

⁷⁷ Petition at 2 (emphasis added).

⁷⁸ See *id.* at 11, 13-15, 17-18.

⁷⁹ *Id.* at 14.

⁸⁰ *Id.* at 23.

⁸¹ *Id.* at 23-24.

⁸² *Exelon Generation Co., LLC* (Braidwood Nuclear Station, Units 1 & 2 and Byron Nuclear Station, Units 1 & 2), LBP-13-12, 78 NRC 239, 242 (2013) ("It is . . . not the role of licensing boards to review and reconsider the wisdom of the Commission's regulations") (internal quotations omitted), *aff'd*, CLI-14-06, 79 NRC __ (May 2, 2014).

The current capsule withdrawal schedule for Palisades is established under 10 C.F.R. Part 50, Appendix H, to accommodate the 60-year licensing period for the plant.⁸³ The NRC reviewed and approved Entergy's most recent amendment to the capsule withdrawal schedule in 2007.⁸⁴ The LAR, which is the subject of the Petition, does not seek any change to the approved capsule withdrawal schedule.⁸⁵ There simply is no requirement for Entergy to make any "showing of substantial advantage" under Appendix H in this proceeding.⁸⁶ Further, the quoted criterion applies to approval of integrated surveillance programs (involving materials irradiated in one or more *other* reactors), whereas Palisades uses a plant-specific program.⁸⁷ Petitioners' challenge to the Palisades plant-specific capsule withdrawal schedule is therefore both misplaced and outside the scope of this proceeding.⁸⁸

Moreover, nothing in 10 C.F.R. Part 50, Appendix G, requires licensees to withdraw and test additional surveillance capsules in order to demonstrate safety margins through an EMA. Petitioners have not cited any such requirement because none exists.⁸⁹ Therefore, when Petitioners argue that Entergy must withdraw and test "one or more metal coupons"⁹⁰ as a prerequisite to demonstrating safety margins through an EMA, they are effectively demanding an

⁸³ See Letter from T. Tate, Office of Nuclear Reactor Regulation, to M. Balduzzi, Entergy Nuclear Operations, Inc., Palisades Nuclear Plant – Approval of Proposed Reactor Vessel Surveillance Capsule Withdrawal Schedule (TAC No. MD3461) at 1 (Aug. 14, 2007), *available at* ADAMS Accession No. ML071640310 ("Safety Evaluation for Palisades Surveillance Program").

⁸⁴ *Id.*

⁸⁵ See LAR.

⁸⁶ Petition at 24.

⁸⁷ See Safety Evaluation for Palisades Surveillance Program, Encl. at 3 (showing plant-specific surveillance capsule withdrawal schedule).

⁸⁸ Notice, 80 Fed. Reg. at 523-24 (limiting the scope of this proceeding to the LAR); *cf. also Fla. Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 & 4), CLI-01-17, 54 NRC 3, 23 (2001) (holding that challenges to the CLB are outside the scope of a license renewal proceeding).

⁸⁹ 10 C.F.R. Part 50, App. G § IV.A.1.b states that additional evidence "may" be obtained from supplemental fracture toughness tests to support an EMA, but does not require such additional evidence.

⁹⁰ Petition at 11.

amendment to Entergy's Appendix H surveillance program. There is no regulatory authority for imposing this prerequisite, and nothing in the rulemaking history or guidance supports Petitioners' argument. On the contrary, the Appendix H surveillance program is a separate regulatory requirement, not subject to challenge here.

“When a Commission regulation permits the use of a particular analysis, a contention asserting that a different analysis or technique should be utilized is inadmissible because it indirectly attacks the Commission's regulations.”⁹¹ Under 10 C.F.R. Appendix G, Section III.A.1, licensees *must* address materials whose Charpy USE falls below 50 ft-lbs through an EMA prepared using the ASME Code. The regulation does not specify that additional physical testing of surveillance capsule samples is necessary. Further, Petitioners have not identified any regulation that would allow Entergy to substitute sample testing for an EMA. Thus, when Petitioners assert that additional “physical ductile strength testing of coupon material” is required, their claims are unsupported and a collateral attack on the regulations, and therefore inadmissible.⁹²

As previously explained, the question in this proceeding is whether the EMA is adequate under NRC regulations, the ASME Code, and, as appropriate, under applicable NRC guidance. The “motivation” for Entergy's decision to seek the EMA in the first place is not within the scope of this proceeding.⁹³ Thus, Petitioners' argument that the Board should require a change to the Appendix H surveillance program schedule is outside the scope of this proceeding.

⁹¹ *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), LBP-09-16, 70 NRC 227, 255 (2009) (citing *Metro. Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), LBP-83-76, 18 NRC 1266, 1273 (1983)), *aff'd on other grounds*, CLI-09-22, 70 NRC 932, 933 (2009).

⁹² *See, e.g., Private Fuel Storage* (Indep. Spent Fuel Storage Installation), CLI-04-4, 59 NRC 31, 39 (2004) (upholding the denial of a contention that argued for requirements in excess of those set forth in the regulations).

⁹³ To the extent Petitioners imply some ill-intent or malicious motive on Entergy's part, such “baseless and irrelevant allegations of fraud” and ill-intent should be disregarded. *See FirstEnergy Nuclear Operating Co.*

*b. Petitioners’ Criticisms of the 50.61a LAR and Other Amendments
Are Outside the Scope of This Proceeding*

In their second basis, Petitioners repeat identical arguments at issue in a separate license amendment proceeding related to Entergy’s 50.61a LAR.⁹⁴ Contrary to Petitioners’ allegation, however, Entergy is simply not “pursuing an alternative analysis of RPV fracture toughness under 10 C.F.R. § 50.61a” in the LAR at issue in this adjudicatory proceeding.⁹⁵ The 50.61a Proceeding addresses different regulatory requirements (*i.e.*, 10 C.F.R. § 50.61a, pertaining to pressurized thermal shock requirements, as opposed to the fracture toughness requirements in 10 C.F.R. Part 50, Appendix G), and involve different technical analyses (*i.e.*, the analysis supporting the 50.61a LAR as opposed to the EMA). The Commission noticed these two proceedings separately, and the NRC Staff is reviewing these LARs separately. And approval of the EMA is not dependent on NRC Staff approval of the 50.61a LAR. Thus, for example, Petitioners’ complaint that the guidance for Section 50.61a calculations is still in draft form⁹⁶ fails to identify any deficiency in the EMA, or raise any issue material to a finding the NRC must

(Davis-Besse Nuclear Power Station, Unit 1), Order (Granting in Part and Denying in Part Motion to Strike) at 4-5 (Oct. 11, 2012) (unpublished) (“Davis-Besse 2012 Order”).

⁹⁴ Petitioners reference pressurized thermal shock or the requirements of 10 C.F.R. §§ 50.61 or 50.61a approximately 50 times in their Petition in this proceeding. *See* Petition at 5, 7, 9, 11-15, 17, 19-20, 22; Gundersen Declaration at 9, 18-19, 21. Indeed, much of Petitioners’ description of the proposed contention is recycled from the 50.61a Petition. For example, the Petition’s “Brief Explanation of the Basis for the Contention” discusses, almost exclusively, 10 C.F.R. § 50.61a and the 50.61a LAR. Petition at 12-15. In some areas, Petitioners offer only minor adjustments to refresh their arguments, such as adding a phrase to claim that Palisades has a “problem of worsening *loss of upper-shelf energy*.” Petition at 13 (emphasis added). *Cf.* 50.61a Petition at 10 (claiming that Palisades has a “problem of worsening reactor vessel embrittlement”).

⁹⁵ Petition at 11.

⁹⁶ *Id.* at 22.

make to grant the LAR.⁹⁷ Such challenges to a separate license amendment request are outside the scope of this proceeding and immaterial.⁹⁸

Similarly, as in their 50.61a Petition, Petitioners vaguely complain about other previously-approved amendments to the Palisades operating license.⁹⁹ Challenges to previously-approved license amendments, rather than the LAR at issue in this proceeding, are simply outside the scope of the present proceeding.¹⁰⁰

Thus, Petitioners' challenges to the 50.61a LAR and to other previously-approved license amendments are outside the scope of this proceeding, immaterial, and inadmissible under 10 C.F.R. §§ 2.309(c), (f)(1)(iii) and (iv).

c. Petitioners' Challenge to the NRC Staff's "No Significant Hazards Consideration" Determination is Impermissible

In the Notice, the NRC Staff "propose[d] to determine that the [LAR] involves no significant hazards consideration."¹⁰¹ In the "Background" section of the Petition, Petitioners argue that the "standards of 10 C.F.R. § 50.92" governing the Staff's proposed NSHC determination have not been satisfied.¹⁰² However, such challenges are impermissible under 10 C.F.R. § 50.58(b)(6), which states that "[n]o petition or other request for review of or hearing on

⁹⁷ See *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 333-34 (1999) (stating that a dispute is only material "if its resolution would make a difference in the outcome of the licensing proceeding").

⁹⁸ See Notice, 80 Fed. Reg. at 523-24 (limiting the scope of this proceeding to the LAR); *N. States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 & 2), LBP-08-26, 68 NRC 905, 922-23 (2008) (holding that a challenge was outside the scope of the proceeding where an applicant had "no obligation to discuss," for purposes of the proceeding at issue, "a separate project, subject to a separate proceeding, and governed by [separate] regulations"); cf., e.g., *Nuclear Mgmt. Co., LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 733 (2006) ("The current proceeding concerns the renewal of the reactor operating license pursuant to 10 C.F.R. Parts 51 and 54, and not the ISFSI, which is licensed pursuant to 10 C.F.R. Part 72.").

⁹⁹ See, e.g., Petition at 13 ("Palisades owners have repeatedly – a half dozen times or more – invoked 10 C.F.R. § 50.61 or predecessor procedures to push back metallurgical toughness parameters")

¹⁰⁰ See *Trojan*, ALAB-534, 9 NRC at 289 n.6; *Wis. Elec. Power Co.* (Point Beach Nuclear Plant, Units 1 & 2), LBP-82-88, 16 NRC at 1342.

¹⁰¹ Notice, 80 Fed. Reg. at 524.

¹⁰² Petition at 11.

the Staff's significant hazards consideration determination will be entertained by the Commission." Section 50.58(b)(6) has long been held to be a jurisdictional bar to intervenor challenges regarding NSHC determinations.¹⁰³ The Staff's proposed NSHC determination is not subject to challenge in this proceeding.

2. Petitioners' Criticisms of the EMA are Unsupported and Fail to Demonstrate a Genuine Dispute

a. Petitioners' Observation on the Lack of "Cleavage Mode-Conversion" Guidance is Irrelevant, Immaterial, and Unsupported

In their third basis, Petitioners point to a statement in RG 1.161 noting that "[t]he conditions governing cleavage mode-conversion of the ductile tearing process in materials with low Charpy [USE] are still not well understood and are not considered in this regulatory guide."¹⁰⁴ Petitioners' only assertion here is that they "have seen no later regulatory guidance" on this issue.¹⁰⁵ Petitioners do not explain how a lack of regulatory guidance on this particular subject renders the EMA deficient, or even that "cleavage mode-conversion" would be applicable to the LAR, and the Gundersen Declaration does not mention this point.¹⁰⁶ Therefore, this argument lacks support and fails to raise a genuine dispute under Sections 2.309(f)(1)(v) and (vi).

¹⁰³ See, e.g., *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-01-7, 53 NRC 113, 118 (2001) (holding that intervenor challenges on this topic will be summarily rejected: "Our regulations provide that '[n]o petition or other request for review of or hearing on the Staff's no significant hazards consideration determination will be entertained by the Commission.' . . . The regulations are quite clear in this regard") (quoting 10 C.F.R. § 50.58(b)(6)); *Vt. Yankee Nuclear Power Corp.* (Vt. Yankee Nuclear Power Station), LBP-90-6, 31 NRC 85, 90-91 (1990) ("The issue of whether the proposed amendment does or does not involve a significant hazards consideration is not litigable in any hearing") (citing *Pac. Gas & Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 & 2), CLI-86-12, 24 NRC 1, 4-5 (1986), *rev'd and remanded on other grounds sub nom. San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986)); *Fla. Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 & 4), LBP-89-15, 29 NRC 493, 495-96 (1989).

¹⁰⁴ Petition at 21 (citing RG 1.161 at 1.161-1).

¹⁰⁵ *Id.* at 21.

¹⁰⁶ As noted previously, this is the same declaration submitted in support of their challenge to the 50.61a LAR. While the Gundersen Declaration criticizes the EMA as "another untried methodological approach," it provides no further justification for this criticism and therefore lacks the requisite reasoned basis or explanation. See, e.g., *USEC*, CLI-06-10, 63 NRC at 472; see also *infra* Section V.B.2.c.

The reference to “cleavage mode conversion” in RG 1.161 is actually a reference to a change in the failure mode of a material from ductile failure to a more brittle process.¹⁰⁷ The EMA evaluates the Palisades RPV under fully ductile conditions, not brittle conditions, so “cleavage mode conversion” is not an issue addressed in or of concern for the EMA at all.¹⁰⁸ The potential for failure of the RPV under brittle conditions is addressed under the requirements for protection from pressurized thermal shock in 10 C.F.R. §§ 50.61 and 50.61a—not through the USE-related requirements of Appendix G. Thus, Petitioners’ observation about the purported lack of guidance on “cleavage mode conversion” is not material to this proceeding. And, as noted above, Petitioners have not made any arguments to the contrary.

Thus, Petitioners’ simple quotation from RG 1.161 is not sufficient to form the basis for an admissible contention pursuant to 10 C.F.R. §§ 2.309(f)(1)(ii), (iv), (v), and (vi).

b. Petitioners’ Claims Regarding Sulfur Content and Nickel Impurities Are Unsupported and Do Not Raise a Genuine Dispute

Petitioners, in their fourth claim, present an extended quotation from the EMA related to the evaluation of nickel and sulfur content of the Palisades RPV materials, and then observe that “higher sulfur content of the plates means lower fracture toughness” and that “Palisades takes credit for the nickel content of the RPV on the one hand (for increasing Upper Shelf Energy loss in RPV upper shell), while failing to mention or account for in the EMA that nickel impurities worsen . . . embrittlement.”¹⁰⁹

¹⁰⁷ See RG 1.161 at 1.161-11.

¹⁰⁸ See *id.* (explaining that because “ductile tearing is the dominant fracture process in the upper-shelf region,” there is no need to consider “the possibility of mode conversion to cleavage (brittle) fracture” in RG 1.161).

¹⁰⁹ Petition at 20.

Petitioners' only support for this claim is a "*see generally*" reference to a licensee response to a 1998 NRC request for additional information involving the Robinson plant.¹¹⁰ The Robinson RAI Response, however, provides no information on the effect of nickel or sulfur content on material toughness as relevant to the EMA, and Petitioners provide no further explanation or basis. The Gunderson Declaration is silent on this topic. Thus, this claim fails for lack of adequate support.¹¹¹

In addition, contrary to Petitioners' unsupported assertions and speculation, the EMA conservatively evaluated both the sulfur and nickel content in the Palisades RPV materials.¹¹² With respect to sulfur content, Westinghouse conservatively evaluated the Palisades high-sulfur plate materials using the guidance in RG 1.161.¹¹³ RG 1.161 specifies that materials with high sulfur content should be evaluated against certain data in NUREG/CR-5265.¹¹⁴ Westinghouse followed this guidance, which is entitled to special weight in assessing compliance with applicable regulations.¹¹⁵ Petitioners raise no dispute with Entergy's evaluation of high sulfur materials, or with the guidance—much less provide sufficient information to overcome the special weight accorded to RG 1.161. As noted earlier, they present no expert opinion on this

¹¹⁰ *Id.* (citing RNP-RA/98-0133, Letter from T. Wilkerson to NRC Document Control Desk, H. B. Robinson Steam Electric Plant, Unit No. 2, Response to Request for Additional Information Regarding Reactor Pressure Vessel Integrity, Attachment 1, at 10-11 (July 23, 1998) ("Robinson RAI Response"), *available at* ADAMS Accession No. ML14178B146).

¹¹¹ *See, e.g., USEC*, CLI-06-10, 63 NRC at 472 (holding that contentions require a reasoned basis or explanation).

¹¹² *E.g., Palisades EMA* at 2-4 (explaining that "[f]or plate material with sulfur content greater than 0.018 wt. %, the model may be used if it can be justified as conservative or a material-specific justification can be made based on other data" and citing the discussion in Section 5.2).

¹¹³ *Palisades EMA* at 5-2.

¹¹⁴ *See* RG 1.161 at 1.161-11 (citing NUREG/CR-5265).

¹¹⁵ *See Indian Point*, CLI-15-6, slip op. at 19, 21 n.85, 22; *Seabrook*, CLI-12-5, 75 NRC at 315.

element of the EMA. Such bare assertions fall far short of the “reasoned basis” necessary to demonstrate the existence of a genuine dispute.¹¹⁶

Moreover, contrary to Petitioners’ claims, nickel is not an “impurity.” Nickel was specifically included in the RPV materials because of its beneficial properties for fracture toughness, particularly under ductile conditions.¹¹⁷ Under brittle conditions—as evaluated, for example, in PTS calculations—the combination of nickel and copper can contribute to radiation embrittlement. Under ductile conditions, however—as evaluated in the EMA—additional nickel content tends to *increase* fracture toughness.¹¹⁸

Thus, with respect to nickel content, Westinghouse’s evaluation in the EMA was again conservative, because the EMA evaluated materials with lower nickel content than the Palisades materials. Specifically, the referenced NUREG/CR-5265 material had a lower nickel content (0.23 wt. %) than the Palisades materials (at least 0.4 wt. %).¹¹⁹ Petitioners present no expert opinion or other support for their bare assertion suggesting that this is not conservative.¹²⁰

Thus, Petitioners’ claims regarding sulfur and nickel are unsupported and fail to raise a genuine dispute on a material issue of law or fact, and are inadmissible under 10 C.F.R. §§ 2.309(f)(1)(ii), (v), and (vi).

¹¹⁶ See *USEC*, CLI-06-10, 63 NRC at 472.

¹¹⁷ See NUREG/CR-6471, Vol. 1, PNNL-11143, Characterization of Flaws in U.S. Reactor Pressure Vessels: Density and Distribution of Flaw Indications in PVRUF [Pressure Vessel Research User Facility] at 2.2 (Nov. 1998) (explaining that ASME and ASTM requirements explicitly specify low levels of copper, phosphorus, sulfur, and vanadium, but the “optimum” amount of nickel should be “balanced” between its “beneficial metallurgical effects,” *i.e.*, for the ductile mode as examined in the EMA, against its “effect on embrittlement,” as examined in PTS calculations), *available at* ADAMS Accession No. ML070300576.

¹¹⁸ See NUREG/CR-6471, Vol. 1 at 2.2; *see also* Palisades EMA at 5-2.

¹¹⁹ See Palisades EMA at 5-2.

¹²⁰ As previously noted, the Robinson RAI Response Petitioners’ cite provides no explanation of the effects of nickel on the fracture toughness of RPV materials, and the Gundersen Declaration is likewise silent on this issue.

c. Petitioners' Criticism of the Westinghouse EMA Methods as Untried Are Unsupported

The fifth basis is that the EMA uses an “untried methodological approach to measure neutron bombardment-induced reactor vessel embrittlement.”¹²¹ But Petitioners and Mr. Gundersen offer no explanation or support for their position. In fact, EMAs such as the one Westinghouse prepared for the Palisades plant have been part of the NRC approach to fracture toughness assessment since the 1970’s.¹²² Using the guidance in RG 1.161, licensees have submitted, and the NRC has approved, numerous EMAs over the ensuing decades.¹²³ Despite this fact, Petitioners have not identified how, or whether, the Palisades EMA methodology differs from previously approved EMAs. Such unsupported mischaracterizations of the EMA as “untried” cannot be the basis for a litigable contention.¹²⁴

Mr. Gundersen also accuses Westinghouse of “manipulat[ing] the Palisades data,” but identifies no actual technical dispute with the EMA.¹²⁵ This bare, unsupported assertion simply

¹²¹ Petition at 15; Gundersen Declaration ¶ 45.5.

¹²² See Appendix G SOC (the rule was published in 1973).

¹²³ See e.g., NUREG-1796, Safety Evaluation Report Related to License Renewal of the Dresden Nuclear Power Station, Units 2 and 3 and Quad Cities Nuclear Power Station, Units 1 and 2 at 4-7 to 4-12 (Oct. 2004) (approving an EMA in a license renewal proceeding), available at ADAMS Accession No. MLML043060584; Letter from P. Milano to D. Koehl, Point Beach Nuclear Plant, Units 1 and 2 - Issuance of Amendments Regarding Review of Reactor Vessel Fracture Mechanics Analysis (TAC Nos. MD2359 and MD2360), Enclosure 3 at 3 (May 10, 2007) (approving an EMA in a license amendment proceeding), available at ADAMS Accession No. ML071300623.

¹²⁴ See *Ga. Tech.*, LBP-95-6, 41 NRC at 300.

¹²⁵ Petition at 17; Gundersen Declaration ¶ 46. Although it is not entirely clear, Mr. Gundersen’s accusation appears to be a challenge to Entergy’s decision to prepare and submit the EMA, rather than rely upon a different Westinghouse analysis (WCAP-17403-NP, Attachment 3 to the LAR), which actually demonstrated that the three Palisades RPV materials included in the EMA could be shown to remain above the 50 ft-lb screening criterion through the end of the plant’s licensed life. However, Palisades elected to include this material in the EMA due to the potential that it may drop below the 50 ft-lb limit if future plant operation includes higher flux levels. Given that Entergy is relying on the EMA in its LAR, not on this conclusion in WCAP-17403-NP, such criticisms are irrelevant and fail to raise a material issue. See *Oconee*, CLI-99-11, 49 NRC at 333-34 (stating that a dispute is only material “if its resolution would make a difference in the outcome of the licensing proceeding”).

cannot provide the requisite basis for an admissible contention.¹²⁶ Thus, Petitioners claims related to Entergy's decision to submit the EMA, as required by 10 C.F.R. Part 50, Appendix G, are inadmissible under 10 C.F.R. §§ 2.309(f)(1)(ii), (iv), (v), and (vi).

3. Petitioners' Remaining Claims are Irrelevant, Immaterial, and Unsupported

a. Petitioners' Claims that Palisades is Being Operated as a "Test or Experiment" are Irrelevant and Immaterial

In their sixth basis, Petitioners once again proffer a vague allegation that "continued operation" of Palisades under the LAR would constitute an "experiment" or "test" under 10 C.F.R. § 50.59, apparently requiring Entergy to seek a license amendment, due to the alleged absence of surveillance data and the "special condition" of the Palisades RPV.¹²⁷ Again, this material appears to be largely copied from Petitioners' 50.61a Petition, and is logically incongruous and irrelevant to this proceeding.

Section 50.59 allows licensees to "conduct tests or experiments not described in the [FSAR] without obtaining a license amendment" subject to certain conditions, and requires licensees to "obtain a license amendment under § 50.90" if a proposed change would have certain results.¹²⁸ Yet, it is undisputed that Entergy is, in fact, requesting a "license amendment under § 50.90" in this very proceeding.¹²⁹

Petitioners cite no authority beyond Section 50.59 to support their vague demand that, as a condition of granting the LAR, the facility must be "recognized" as a test or experiment. Palisades is currently operating within its CLB, including its approved Part 50, Appendix H

¹²⁶ See USEC, CLI-06-10, 63 NRC at 472.

¹²⁷ Petition at 18-19 (citing Gundersen Declaration ¶¶ 8, 50).

¹²⁸ 10 C.F.R. § 50.59(c)(1).

¹²⁹ See LAR at 2 ("Pursuant to 10 CFR 50.90, [Entergy] hereby submits an amendment application for the [Palisades] operating license").

surveillance program. If the LAR is approved, then there would still be no changes, tests, or experiments beyond those authorized by the NRC license for Palisades and described in the plant's Updated Final Safety Analysis Report.

Petitioners claims regarding the requirements of 10 C.F.R. § 50.59 are outside the scope of this proceeding, unsupported, and immaterial.¹³⁰ Thus, these claims are inadmissible under 10 C.F.R. §§ 2.309(f)(1)(ii), (iii), (iv), (v) and (vi).

b. *The Greenpeace Briefing on Belgian Reactors is Irrelevant and Immaterial, and Petitioners' Claim of Its Applicability to Palisades or the Palisades EMA is Unsupported*

In their seventh basis, Petitioners generally refer to the “Greenpeace Briefing,” claiming that certain problems identified at the Doel 3 and Tihange plants in Belgium have “implications for nuclear safety worldwide.”¹³¹ Petitioners call attention to the recommendation of Belgian regulators that “the steel used in making beltline ring forgings [should] be closely examined.”¹³² Petitioners also attempt to connect the Greenpeace Briefing to their demands for additional destructive coupon testing.¹³³

First, as demonstrated above, such demands for additional surveillance coupon testing are outside the scope of this proceeding as impermissible attacks on Commission regulations and the Palisades CLB.

Petitioners, moreover, provide no expert opinion supporting any purported connection between the information in the Greenpeace Briefing and any particular alleged technical deficiency in the Palisades EMA. Even an expert opinion that merely states a conclusion,

¹³⁰ See *Oconee*, CLI-99-11, 49 NRC at 333-34 (stating that a dispute is only material “if its resolution would make a difference in the outcome of the licensing proceeding”).

¹³¹ Petition at 21.

¹³² See Greenpeace Briefing; Petition at 21-22.

¹³³ Petition at 22.

without providing an explanation, is “inadequate because it deprives the Board of the ability to make the necessary reflective assessment of the opinion.”¹³⁴ In fact, as Petitioners acknowledge, the alleged “flaw indications” found in the Belgian reactors were in “beltline ring forgings.”¹³⁵ But the Palisades RPV beltline is constructed of welded plates, not forgings.¹³⁶ Petitioners’ unsupported assertions therefore fall short of raising a genuine dispute with the LAR on a material issue of law or fact.

Thus, Petitioners claims based on the Greenpeace Briefing are unsupported, outside the scope of this proceeding, and fail to raise a genuine dispute on a material issue of law or fact. They are therefore inadmissible under 10 C.F.R. §§ 2.309(f)(1)(ii), (iii), (v), and (vi).

c. Petitioners’ Claims Regarding an Enforcement Proceeding are Irrelevant, Immaterial, and Inflammatory

Finally, Petitioners assert that a February 2015 “White Finding” involving worker exposures at Palisades indicates that “avoidance of worker radiation dose as a supposed reason for avoiding metal surveillance coupon testing at Palisades should not be deemed an acceptable excuse by NRC.”¹³⁷

There is simply zero basis for such speculation and, as previously shown, the surveillance capsule testing schedule is not at issue in this proceeding, and has been unchanged since 2007—seven years before the events involved in the White Finding. Therefore, any purported link between radiation safety and the EMA is both baseless and inappropriate.¹³⁸ Worker radiation dose, moreover, was not relevant to the licensee’s or the NRC’s evaluations of the current

¹³⁴ See USEC, CLI-06-10, 63 NRC at 472.

¹³⁵ Petition at 21.

¹³⁶ See Palisades EMA at 4-1, tbl. 4-1 (showing the Palisades RPV beltline plate material).

¹³⁷ Petition at 24.

¹³⁸ Comments “meant to inflame rather than address any legitimate argument” have no place in NRC adjudicatory proceedings. See Davis-Besse 2012 Order at 4-5.

surveillance capsule testing schedule.¹³⁹ Further, the White Finding itself involves the NRC's exercise of its regulatory authority over the ongoing operation of Palisades, which is also outside the scope of this proceeding.¹⁴⁰ Thus, Petitioner's claims are outside the scope of this proceeding under 10 C.F.R. § 2.309(f)(1)(iii).

* * * * *

In sum, the proposed contention is outside the scope of this proceeding, fails to raise an issue material to any finding the NRC must make to grant the LAR, is unsupported, and fails to raise a genuine dispute, rendering the proposed contention inadmissible under 10 C.F.R. §§ 2.309(f)(1)(ii)-(vi).

¹³⁹ See Safety Evaluation for Palisades Surveillance Program at 1 (finding the Palisades surveillance schedule, developed to accommodate the 60-year licensing period, to be acceptable under 10 C.F.R. Part 50, Appendix H, using the guidance in the American Society for Testing and Materials ("ASTM") Standard Practice E-182-82).

¹⁴⁰ See *Catawba*, ALAB-825, 22 NRC at 790-91; *Trojan*, ALAB-534, 9 NRC at 289 n.6 (affirming the licensing board's rejection of issues raised by intervenors that fell outside the scope of the notice of hearing); see also *Yankee*, CLI-98-21, 48 NRC at 204.

VI. CONCLUSION

As demonstrated above, Petitioners proffer no contention satisfying the admissibility requirements in 10 C.F.R. § 2.309(f)(1). In addition, NEIS has not satisfied the standing requirements in 10 C.F.R. § 2.309(d). Accordingly, the Board should reject the Petition in its entirety.

Respectfully submitted,

Signed (electronically) by Raphael P. Kuyler

Jeanne Cho, Esq.
Entergy Services, Inc.
440 Hamilton Ave.
White Plains, NY 10601
Phone: (914) 272-3323
Fax: (914) 272-3242
E-mail: jchol@entergy.com

Paul M. Bessette, Esq.
Raphael P. Kuyler, Esq.
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Phone: (202) 739-5796
Fax: (202) 739-3001
E-mail: pbessette@morganlewis.com
E-mail: rkuyler@morganlewis.com

Counsel for Entergy Nuclear Operations, Inc.

Dated in Washington, DC
this 3rd day of April 2015

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

_____)	
In the Matter of:)	Docket No. 50-255-LA-2
)	
ENTERGY NUCLEAR OPERATIONS, INC.)	
)	
(Palisades Nuclear Plant))	April 3, 2015
_____)	

CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R. § 2.305, I certify that, on this date, copies of the foregoing “Entergy’s Answer Opposing Petition to Intervene and Request for Hearing” were served upon the Electronic Information Exchange (the NRC’s E-Filing System), in the above-captioned proceeding.

Signed (electronically) by Raphael P. Kuyler

Raphael P. Kuyler, Esq.
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Phone: (202) 739-5146
Fax: (202) 739-3001
E-mail: rkuyler@morganlewis.com