

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
ENTERGY NUCLEAR OPERATIONS, INC.) Docket No. 50-255-LA
)
(Palisades Nuclear Plant))

NRC STAFF ANSWER TO PETITION TO INTERVENE AND REQUEST FOR A HEARING
FILED BY BEYOND NUCLEAR, DON'T WASTE MICHIGAN, MICHIGAN SAFE ENERGY
FUTURE-SHORELINE CHAPTER, AND THE NUCLEAR ENERGY INFORMATION SERVICE

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INTRODUCTION

On December 1, 2014, Petitioners Beyond Nuclear, Don't Waste Michigan, Michigan Safe Energy Future – Shoreline Chapter, and the Nuclear Energy Information Service (“Petitioners”) filed a petition to intervene and a request for hearing (“Petition”) concerning a license amendment request (“LAR”) submitted by Entergy Nuclear Operations, Inc. (“Entergy”) for the Palisades Nuclear Plant (“Palisades” or “PNP”).¹ An amended petition was filed by the Petitioners on December 10, 2014.² Pursuant to 10 C.F.R. § 2.309(i), the Staff of the Nuclear

¹ “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) (Agencywide Documents Access and Management System (“ADAMS”) Accession No. ML14335A807). The initial Petition did not include a Certificate of Service (“COS”) as is required by 10 C.F.R. § 2.305(4).

² “Amended 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. 8, 2014) (ADAMS Accession No. ML14344A321) (“Amended Petition”). Attached to both the initial Petition and the Amended Petition were (1) several declarations concerning the Petitioners’ standing to intervene (“Standing Declarations”) (Amended Petition at 23-30); and (2) “Exhibit A,” (Amended Petition at 31-35) documenting what the Petitioners refer to as regulatory “roll backs” during Palisades’ operations. Attached to the initial Petition were also (3) the “Declaration of Arnold Gunderson” (Dec. 1, 2014)

Regulatory Commission (“NRC Staff” or “Staff”) hereby files its answer. The Staff opposes the hearing request because the Petitioners have not proffered an admissible contention.³

BACKGROUND

This proceeding involves a license amendment application submitted by Entergy on July 29, 2014, for Palisades, a nuclear power plant located in Covert, Michigan, five miles south of South Haven, Michigan, on the eastern shore of Lake Michigan. Therein, Entergy requested the NRC to approve its use of the alternate fracture toughness requirements for protection against pressurized thermal shock (“PTS”) events provided in 10 C.F.R. § 50.61a, in lieu of the requirements in 10 C.F.R. § 50.61.⁴ On September 30, 2014, the NRC published in the *Federal Register* a notice of opportunity to request a hearing on the LAR.⁵ In response to the September 30th notice, Petitioners filed their December 1, 2014 request for hearing, in which they addressed their standing to intervene and proposed a single contention challenging Entergy’s LAR.

In the following discussion, the Staff (a) addresses the Petitioners’ standing to intervene, (b) provides a brief background on the issue of fracture toughness and the related requirements that an applicant must meet in order to use 10 C.F.R. § 50.61a instead of § 50.61; and (c) demonstrates that the Petitioners’ contention should be rejected because (1) it constitutes a

(“Gundersen Decl.”) (ADAMS Accession No. ML14335A806); and (4) “Declaration of Pierman, Kamps and Keegan Concerning Coupon Availability for PTS Testing” (Dec. 1, 2014) (“Pierman Decl.”) (ADAMS Accession No. ML14335A808). The Amended Petition was filed to correct a citation to a *Federal Register* notice and to state that Ms. Bette Pierman wants Beyond Nuclear to represent her; the Amended Petition was also accompanied by a COS.

³ See 10 C.F.R. § 2.309(f)(1).

⁴ Entergy letter PNP 2014-049, “License Amendment Request to Implement 10 CFR 50.61a, ‘Alternate Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events’” (Jul. 29, 2014), at 3 (“LAR”) (ADAMS Accession No. ML14211A524). Entergy enclosed with its LAR a supporting analysis, WCAP-17628-NP, Rev. 1, “Alternate Pressurized Thermal Shock (PTS) Rule Evaluation for Palisades” (Jun. 2014) (“LAR Enclosure”) (ADAMS Accession No. ML14211A525). The LAR and the LAR Enclosure can be viewed in a “package” at ADAMS Accession No. ML14211A520.

⁵ “Biweekly Notice; Applications and Amendments to Facility Operating Licenses Involving No Significant Hazards Considerations,” 79 Fed. Reg. 58,812 (Sept. 30, 2014).

challenge to the Commission's regulations, (2) it fails to demonstrate any deficiency in Entergy's LAR; and (3) raises numerous issues that are beyond the scope of this proceeding.

DISCUSSION

I. The Petitioners Have Demonstrated Standing to Intervene

A. General Requirements

Section 189.a.(1)(A) of the Atomic Energy Act ("AEA") requires the Commission to grant a hearing request filed by any person whose interest may be affected by the proceeding.⁶ To demonstrate this interest, petitioners must submit written pleadings which set out:

- (i) The name, address and telephone number of the requestor or petitioner;
- (ii) The nature of the requestor's/petitioner's right under the [AEA] to be made a party to the proceeding;
- (iii) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding; and
- (iv) The possible effect of any decision or order that may be issued in the proceeding on the requestor's/petitioner's interest.⁷

To determine whether a petitioner has established an interest to intervene, the Commission applies contemporaneous judicial concepts of standing, requiring the Petitioner to (1) allege an injury in fact that is (2) fairly traceable to the challenged action and (3) is likely to be redressed by a favorable decision.⁸ The alleged injury in fact must be concrete and particularized, not conjectural or hypothetical.⁹

Organizations seeking to establish representational standing may meet the injury in fact requirement by demonstrating that at least one of their members, who has authorized the organization to represent his or her interest, will be injured by the possible outcome of the

⁶ 42 U.S.C. § 2239(a)(1)(A).

⁷ 10 C.F.R. § 2.309(d)(1).

⁸ *Sequoyah Fuels Corp. & Gen. Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 71-2 (1994), *citing Lujan v. Defenders of Wildlife*, 504 U.S. 555, 559-560 (1992).

⁹ *Id.*, *citing O'Shea v. Littleton*, 414 U.S. 488, 494 (1974).

proceeding.¹⁰ Further, the organization must establish that the interests the organization seeks to protect are germane to its own purposes.¹¹

B. The Petitioners Have Demonstrated Standing

The Commission has recognized that license amendments affecting reactor vessel embrittlement may raise cognizable interests. For example, in its 1993 *Perry* decision, the Commission found that allegations submitted by a petitioner living near the nuclear plant, related to reactor vessel embrittlement and its potential consequences, were sufficient to establish standing.¹² Specifically, the Commission allowed a homeowner, living 15 miles from the nuclear plant, to challenge a license amendment which removed the schedule for withdrawal of reactor vessel material specimens from the plant's technical specifications. As the Commission found, amendments to procedures that guard against brittle fracture can confer standing because "[t]he material condition of the plant's reactor vessel obviously bears on the health and safety of those members of the public who reside in the plant's vicinity."¹³

Here, the Petitioners have successfully demonstrated representational standing to intervene, through the standing of individual members of their respective organizations. Each Petitioner attached an affidavit from one of its members authorizing that Petitioner to represent his or her interests by intervening in this licensing proceeding.¹⁴ For example, Beyond Nuclear attached a declaration by one of its members, Bette Pierman. In her declaration, Ms. Pierman identifies herself by name and address (approximately 13 miles from the Palisades plant), describes her interest in intervening in the licensing proceeding, authorizes Beyond Nuclear to represent her interest, and explains why Beyond Nuclear's purpose is germane to her interest.

¹⁰ *Consumers Energy Co., Nuclear Mgmt. Co., LLC, Entergy Nuclear Palisades, LLC, & Entergy Nuclear Operations, Inc.* (Palisades Nuclear Power Plant), CLI-07-18, 65 NRC 399, 409 (2007).

¹¹ *Id.*

¹² *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 95-96 (1993).

¹³ *Id.* at 96.

¹⁴ See Standing Declarations, Amended Petition at 23-30.

Specifically, Ms. Pierman claims Entergy's request for a license amendment is inadequate as written, that Entergy underestimated the possibility of through-wall cracking of the Palisades's nuclear reactor vessel due to embrittlement, and that by underestimating the risk Entergy increased the likelihood that she might be injured by radioactive releases during an accident.¹⁵

Similar affidavits were filed by members of each of the other Petitioners alleging similar concerns. Thus, Alice Hirt filed an Affidavit stating that she lives 35 miles from the Palisades plant; that the license amendment risked damaging her health and the environment because it increased the possibility of a radiological release; and that she authorized Don't Waste Michigan to represent her in this litigation.¹⁶ Similarly, Gail Snyder filed an Affidavit stating that she owns land 15 miles from the Palisades plant, where her family members have camped; that the license amendment risked damaging her health and the habitability of her property because it increased the possibility of radiological release; and that she authorized Nuclear Energy Information Service to represent her in this litigation.¹⁷ Finally, Maynard Kaufman filed an Affidavit stating that he lives 10 miles from the Palisades plant; that the license amendment

¹⁵ See Amended Declaration of Bette Pierman (Amended Petition at 24). While the Staff does not contest the adequacy of the affiants' assertions to establish their standing to intervene here, those assertions do not satisfy the requirements for an admissible contention, as set forth in 10 C.F.R. § 2.309(f)(1)(i)-(vi). See discussion *infra* at Section IV. The affidavits merely assert that the possibility of through-wall cracking is greater than predicted, that the application is inadequate as written, and that Palisades may operate unsafely. These are generalized concerns that fail to raise a specific challenge to the LAR, and do not meet the Commission's requirements for admissible contentions. See, e.g., *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003); 10 C.F.R. § 2.309(f)(1)(vi) (requiring petitioner to include references to specific portions of the application that petitioner disputes). As such, the claims in the affidavits do not raise an admissible contention.

¹⁶ Amended Petition at 26.

¹⁷ Amended Petition at 30. Ms. Snyder owns property within 15 miles of the plant, but does not reside there. Although she claims that her family members recreate on the property, it is not entirely clear whether she also visits or uses the property. *Id.* Therefore, her claims about the potential risk to her health may be insufficient for her to establish standing. See *Detroit Edison Co.* (Fermi Atomic Power Plant Unit 2) ALAB-470, 7 NRC 473, 474 n.1 (1978) (one generally cannot acquire standing on the basis of the interests of a third party); *Nuclear Fuel Services, Inc.* (Erwin, Tennessee), LBP-04-5, 59 NRC 186, 194 (2004) (mere land ownership near the plant without further contacts to the area is insufficient to demonstrate an injury-in-fact). Nonetheless, harm to a property interest is also sufficient to establish standing. *USEC, Inc.* (American Centrifuge Plant), CLI-05-11, 61 NRC 309, 314 (2005). Ms. Snyder states that in the event of an accident, the land she owns could become uninhabitable. Amended Petition at 30. Thus, the Nuclear Energy Information Service has demonstrated representational standing.

risked damaging his health because it increased the possibility of radiological release; and that he authorized Michigan Safe Energy Future-Shoreline to represent him in this litigation.¹⁸

Finally, in their brief, the Petitioners similarly assert that the requested license amendment will allow Palisades to continue operating with a severely-embrittled reactor, and that operating with a severely-embrittled reactor increases the risk of radiological release during a serious reactor accident due to PTS.¹⁹ The Petitioners further assert that Palisades' use of the methods afforded in § 50.61a may itself cause failure of the reactor pressure vessel.²⁰

The Staff does not contest the Petitioners' standing to intervene. In the Staff's view, while the statements recited above fail to establish an admissible contention under 10 C.F.R. § 2.309(f)(1)(i)-(vi), each of the Petitioners has established that at least one of its members has personal standing to intervene, and each of those persons has authorized the organization to represent his or her interests in this proceeding. The Petitioners have alleged that granting the LAR will increase the risk that their members, who live near the nuclear plant, will be harmed by radiological releases due to a potential PTS event. The LAR relates to reactor pressure vessel embrittlement and PTS which, as the Commission acknowledged in *Perry*, could raise safety concerns with the potential for offsite consequences.²¹ For these reasons, the Staff does not challenge the Petitioners' standing to intervene.

II. Regulatory Overview: Pressurized Thermal Shock and the Requirements of 10 C.F.R. §§ 50.61 and 50.61a

During nuclear reactor operation, nuclear fission occurs, through which uranium atoms are split and neutrons are emitted. Over time, neutron irradiation from the fission process can embrittle, or reduce the toughness of, the materials that make up the reactor vessel. This neutron embrittlement is cumulative in nature, increasing with each effective full-power year of

¹⁸ Amended Petition at 28.

¹⁹ Amended Petition at 4.

²⁰ Amended Petition at 5.

²¹ *Perry*, CLI-93-21, 38 NRC at 95-96.

operation.²² Embrittlement of the reactor vessel is of concern for pressurized water reactors (“PWRs”), due to the vessel’s reduced ability to withstand a PTS event — *i.e.*, “an event or transient in pressurized water reactors [] causing severe overcooling (thermal shock) concurrent with or followed by significant pressure in the reactor vessel.”²³ During a PTS event, which could arise in certain rare accident situations, the hot interior surfaces of the reactor vessel are suddenly flooded with relatively colder water. When the plates, forgings, axial welds, and circumferential welds that make up the reactor vessel are cooled rapidly by this colder water, stress is introduced into those materials. The reactor pressure vessel might then fracture, provided there is a pre-existing flaw and the material’s toughness is low due to neutron embrittlement.²⁴

To address PTS, the NRC requires licensees to meet either of two regulatory provisions that have been codified in 10 C.F.R. Part 50 — either 10 C.F.R. § 50.61 or 10 C.F.R. § 50.61a.²⁵ Section 50.61 was published in 1985,²⁶ and was followed 25 years later (in 2010), by the publication of § 50.61a.²⁷ The Commission’s regulations permit a reactor licensee to follow *either* of those regulations, provided it satisfies the criteria and requirements set forth in the specified regulation.

Sections 50.61 and 50.61a each require the licensee to use projected “reference temperatures” of the steel reactor vessel materials to assess how well those materials can resist

²² “Alternate Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events,” 75 Fed. Reg. 13 (Jan. 4, 2010) (Final Rule), as corrected or amended by 75 Fed. Reg. 5,495 (Feb. 3, 2010), 75 Fed. Reg. 10,410 (Mar. 8, 2010), and 75 Fed. Reg. 72,653 (Nov. 26, 2010).

²³ 10 C.F.R. § 50.61(a)(2); 10 C.F.R. § 50.61a(a) (stating that terms in § 50.61a have the same meaning as terms in § 50.61(a), with the exception of the term “ASME Code”).

²⁴ See *generally* 75 Fed. Reg. at 13.

²⁵ 10 C.F.R. § 50.61(b)(1) (“...projected [reference temperature] values must be in accordance with this section or § 50.61a.”); 10 C.F.R. § 50.61a(b) (“The requirements of this section may be implemented as an alternative to the requirements of 10 CFR 50.61”).

²⁶ “Analysis of Potential Pressurized Thermal Shock Events,” 50 Fed. Reg. 29,937 (July 23, 1985) (Final Rule) (promulgating 10 C.F.R. § 50.61).

²⁷ 75 Fed. Reg. at 13.

fracturing during a PTS event.²⁸ The reference temperature relates to how much the steel can bend, and thereby absorb energy, prior to failure. If the steel's temperature is above the reference temperature, it will behave in a more ductile fashion, absorbing more energy before failure. However, if the steel's temperature is below the reference temperature, it will fail in a more brittle fashion, absorbing less energy before failure. The reference temperature for unirradiated steel is generally below room temperature, but the material's reference temperature increases over time as the reactor vessel is exposed to neutron irradiation. If the reference temperature of the reactor vessel materials becomes very high, then during a PTS event, when the reactor vessel is flooded with cold water, the steel could behave in a more brittle fashion, increasing the probability of fracture.²⁹ The amount by which the steel's reference temperature increases due to irradiation is influenced by the operating temperature of the reactor, the composition of the steel, and the amount of irradiation to which it is exposed. The amount of reference temperature increase that will occur over the reactor's operating lifetime is increased by a greater total radiation exposure, by exposure to radiation at lower temperatures, or by the use of steel that has higher concentrations of copper, nickel, phosphorus, or manganese.³⁰

Both of the Commission's PTS rules (§§ 50.61 and 50.61a) require the licensee to compare predicted (*i.e.*, calculated) reference temperatures for the plates, forgings, and other reactor vessel materials with the regulatory screening criteria set forth in the rule (§ 50.61 or § 50.61a). If the projected reference temperatures exceed the screening criteria, the licensee must take the appropriate steps outlined in the regulations, *e.g.*, it must implement a flux

²⁸ 10 C.F.R. § 50.61(b)(1) (requiring licensee to have projected reference temperature values accepted by the NRC); 10 C.F.R. § 50.61a(c)(3) (requiring licensee to compare the projected reference temperature values for plates, forgings, axial welds, and circumferential welds to the PTS screening criteria in Table 1 of § 50.61a).

²⁹ The probability of fracture is still extremely low, but it increases above a one in a million probability of reactor vessel failure per year of operation. *See generally* NUREG-1806, Vol. 1, *Technical Basis for Revision of the Pressurized Thermal Shock (PTS) Screening Limit in the PTS Rule (10 CFR 50.61)*, at Chapter 10 (Aug. 2007), available at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1806/>.

³⁰ *See generally* 10 C.F.R. § 50.61a(g) Equations 5–7.

reduction program³¹ or obtain NRC approval of a safety analysis.³² Under either rule, the plant may not operate when the screening criteria are exceeded unless the licensee obtains prior approval from the Director, Office of Nuclear Reactor Regulation.³³

While both rules address PTS, there are differences between § 50.61 and § 50.61a. For example, § 50.61a differs from § 50.61 in its requirements as to how the licensee determines the material's resistance to fractures initiating from different flaws at different locations in the reactor vessel beltline.³⁴ Further, § 50.61a uses different reference temperature screening criteria than § 50.61; and the criteria in § 50.61a, unlike those in § 50.61, vary depending on material product form and vessel wall thickness.³⁵

Perhaps most importantly, § 50.61a was developed based on many more years of operational experience than was available when the earlier rule (§ 50.61) was published.³⁶ Moreover, because of increased computer capabilities, the § 50.61a calculations better captured the details of a PTS event than was possible when § 50.61 was adopted. As a result, the technical basis document for § 50.61a concluded that the risks of through-wall cracking due to a PTS event were much lower than previously estimated, and the screening criteria in § 50.61 were found to be “unnecessarily conservative.”³⁷ In sum, the Commission found that the § 50.61a reference temperature limits provide a more accurate and realistic linkage between

³¹ 10 C.F.R. § 50.61(b)(3); 10 C.F.R. § 50.61a(d)(3).

³² 10 C.F.R. § 50.61(b)(4); 10 C.F.R. § 50.61a(d)(4).

³³ 10 C.F.R. § 50.61(b)(6); 10 C.F.R. § 50.61a(d)(6).

³⁴ 75 Fed. Reg. at 18 (“The final rule requires quantifying PTS reference temperatures (RT_{MAX-X}) for flaws along axial weld fusion lines, plates, forgings, and circumferential weld fusion lines, and comparing the quantified value against the RT_{MAX-X} screening criteria.”).

³⁵ *Id.* The screening criteria in § 50.61 do not vary to the same extent. See 10 C.F.R. § 50.61(b)(2) (“The pressurized thermal shock (PTS) screening criterion is 270 °F for plates, forgings, and axial weld materials, and 300 °F for circumferential weld materials.”).

³⁶ See, e.g., 75 Fed. Reg. at 14.

³⁷ 75 Fed. Reg. at 13.

embrittlement and reactor vessel fracture risk than the limits established in § 50.61.³⁸ A licensee may therefore elect to use *either* rule in establishing the fracture toughness of its reactor vessel, provided it meets the requirements set forth in that rule.

III. Requirements for Use of § 50.61a

Where an eligible licensee seeks to use § 50.61a as an alternative to § 50.61,³⁹ the licensee must submit a license amendment request with the information required by § 50.61a(c).⁴⁰ In accordance with 10 C.F.R. § 50.61a(c)(1), the licensee must submit projected reference temperatures associated with the axial welds,⁴¹ plates,⁴² forgings,⁴³ and circumferential welds⁴⁴ located in the reactor vessel beltline. The projected reference temperature (RT_{MAX}) is calculated by adding the projected change in reference temperature (ΔT_{30})⁴⁵ to the steel's original unirradiated reference temperature ($RT_{NDT(U)}$).⁴⁶ The licensee must submit these calculations to the NRC for review, along with the sources of the inputs for the calculations.⁴⁷

Further, 10 C.F.R. § 50.61a(c)(1) requires the licensee to verify that the reference

³⁸ See "Alternate Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events," 72 Fed. Reg. 56,275, 56,279 (Oct. 3, 2007) (Proposed Rule) (stating that "[t]he updated RT_{MAX-X} estimation procedures provide a more realistic (compared to the existing regulation) method for estimating the fracture toughness of reactor vessel materials over the lifetime of the plant.").

³⁹ 10 C.F.R. § 50.61a(b) ("The requirements of this section apply to each holder of an operating license for a pressurized water nuclear power reactor whose construction permit was issued before February 3, 2010 and whose reactor vessel was designed and fabricated to the ASME Boiler and Pressure Vessel Code, 1998 Edition or earlier.").

⁴⁰ 10 C.F.R. § 50.61a(c).

⁴¹ 10 C.F.R. § 50.61a(g) Equation 1.

⁴² 10 C.F.R. § 50.61a(g) Equation 2.

⁴³ 10 C.F.R. § 50.61a(g) Equation 3.

⁴⁴ 10 C.F.R. § 50.61a(g) Equation 4.

⁴⁵ 10 C.F.R. § 50.61a(g) Equation 5.

⁴⁶ 10 C.F.R. § 50.61a(g) Equations 1-4.

⁴⁷ 10 C.F.R. § 50.61a(c)(1).

temperatures predicted using the equations in § 50.61a are appropriate.⁴⁸ In accordance with 10 C.F.R. Part 50, Appendix H, licensees are required to monitor steel coupons placed in surveillance capsules within the reactor vessel. These coupons are made from the same materials as the plates, forgings, and welds that make up the reactor vessel beltline, and are placed at varying distances from the fuel. The capsules are periodically removed from the reactor vessel, and the coupons are then tested to measure the reference temperature of the steel used in the reactor vessel beltline after varying degrees of irradiation exposure. Because the surveillance capsules are placed closer to the core than is the reactor vessel itself, they accumulate irradiation effects faster than the reactor vessel. Testing the capsules as required by 10 C.F.R. Part 50, Appendix H therefore provides the NRC and the licensee with information about future reactor vessel embrittlement. Section 50.61a(c)(1) requires licensees to ensure that their predicted reference temperatures correspond to available surveillance data.⁴⁹ To achieve this goal, licensees must perform statistical analyses using 10 C.F.R. § 50.61a(g) Equations 8 through 12 and Tables 6 through 7, to compare the reference temperatures predicted by Equations 5 through 7 with the measured reference temperatures obtained from the surveillance data. If the predicted and measured reference temperatures fail to correspond, the licensee may propose to submit alternative reference temperatures to the Commission.⁵⁰

Additional requirements, concerning inspection, are provided in 10 C.F.R. § 50.61a(c)(2); this provision requires licensees to submit volumetric assessments of the flaws found in the reactor vessel beltline. The flaw assessments must use procedures, equipment, and personnel that have been approved under the ASME Code, Section XI, Appendix VIII, Supplement 4 and Supplement 6.⁵¹ The flaw assessment focuses on the number and size of

⁴⁸ *Id.* (“Assessments performed under paragraphs f(6) and f(7) of this section, shall be submitted by the licensee to the Director in its license amendment application to utilize § 50.61a.”).

⁴⁹ See 10 C.F.R. §§ 50.61a(a)(10) (defining surveillance data) and (f)(6)(i)(B).

⁵⁰ 10 C.F.R. § 50.61a(f)(6)(vi).

⁵¹ 10 C.F.R. § 50.61a(e).

the flaws in the vessel, with the aim of ensuring that the flaws found by inspection of the vessel are represented well or bounded by the number and size of the flaws on which the reference temperature limits of § 50.61a were based.⁵²

Finally, 10 C.F.R. § 50.61a(c)(3) requires licensees to compare the predicted reference temperatures associated with the axial welds, plates, forgings, and circumferential welds located in the reactor vessel beltline with the PTS limits located in Table 1 of § 50.61a. Licensees may propose mitigating strategies if any of the predicted reference temperatures are greater than these PTS limits.⁵³

IV. The Petitioners Have Not Filed an Admissible Contention

A. Contention Admissibility Standards

1. Contention Admissibility Factors in 10 C.F.R. § 2.309(f)(1)

In addition to demonstrating standing, a contention must also meet the requirements of 10 C.F.R. § 2.309(f)(1)(i)-(vi). Under § 2.309(f)(1), an admissible contention must:

(i) Provide a specific statement of the issue of law or fact to be raised or controverted. . .

(ii) Provide a brief explanation of the basis for the contention;

(iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; [and]

⁵² 10 C.F.R. § 50.61a(e)(1)-(3).

⁵³ 10 C.F.R. § 50.61a(d)(4)-(7).

(vi) . . . [P]rovide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief[.]⁵⁴

The Commission has strictly applied these contention admissibility requirements in NRC adjudications.⁵⁵ As the Commission and Atomic Safety and Licensing Boards have repeatedly held, “[a] failure to meet any of these criteria renders the contention inadmissible.”⁵⁶

2. Scope of NRC License Amendment Proceedings

Well-established NRC precedent limits the scope of NRC proceedings to the matters specified in the notice of hearing.⁵⁷ Here, the *Federal Register* Notice stated, “Contentions shall be limited to matters within the scope of the amendment under consideration.”⁵⁸ The Notice explains that the LAR requests “authorization to implement 10 CFR 50.61a, ‘Alternate fracture toughness requirements for protection against pressurized thermal shock events,’ in lieu of 10 CFR 50.61, ‘Fracture toughness requirements for protection against pressurized thermal shock events.’”⁵⁹ Any claims by a petitioner that do not relate to Entergy’s proposed changes to the current license are outside the scope of this proceeding. Petitioners, for example, cannot, in

⁵⁴ 10 C.F.R. § 2.309(f)(1). A further provision, § 2.309(f)(1)(vii), applies only to COL applications submitted under 10 C.F.R. Part 52.

⁵⁵ *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 118-19 (2006).

⁵⁶ *N. States Power Co.* (Prairie Island Nuclear Generating Plant Independent Spent Fuel Installation), LBP-12-24, 76 NRC 503, 509 (2012); *See also South Carolina Elec. & Gas Co.* (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-1, 71 NRC 1, 7 & n.33 (2010), *quoting USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 437 (2006) (“requirements are deliberately strict, and we will reject any contention that does not satisfy the requirements.”).

⁵⁷ *Portland Gen. Elec. Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n. 6 (1979) (citing *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 & 2), ALAB-316, 3 NRC 167, 170-71 (1976)); *see also Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station Unit 3), LBP-08-9, 67 NRC 421, 437 (2008), *aff’d*, CLI-08-17, 68 NRC 231, 240 (2008).

⁵⁸ 79 Fed. Reg. at 58,813.

⁵⁹ *Id.* at 58,814.

this proceeding, challenge *other* amendments or other NRC Staff actions related to PTS that are not part of the instant license amendment. Additionally, challenges to NRC regulations are prohibited in an adjudicatory proceeding, unless a petition for waiver of the rules has been filed.⁶⁰ No such petition for waiver has been filed or granted by the Commission. As such, the Petitioners cannot challenge the provisions of § 50.61a — they can only argue that the LAR fails to meet the criteria in § 50.61a. Likewise, it is well established that a petitioner cannot challenge the NRC’s “no significant hazards consideration” (“NSHC”) determination.⁶¹

As discussed below, the Petitioners’ contention fails to meet these requirements, in that it (a) fails to specify any particular deficiency in the LAR, (b) raises numerous matters that are not the subject of the instant LAR and are beyond the permissible scope of this proceeding, and (c) constitutes an impermissible challenge to the Commission’s regulations.

B. The Petitioners’ Contention is Inadmissible

The Petitioners’ sole Contention states as follows:

The licensing framework that the NRC is applying to allow Palisades to continue to operate until August 2017 includes both non-conservative analytical changes and mathematically dubious comparison to allegedly similar “sister” reactor vessels. Palisades’ neutron embrittlement dilemma continues to worsen as the plant ages, and Palisades has repeatedly requested life extensions which have ignored and deferred worsening embrittlement characteristics of the RPV for decades. Presently, Entergy plans to deviate from the regulatory requirements of 10 C.F.R. § 50.61 to §50.61a (Alternate Fracture Toughness Requirements). This new amendment request introduces further non-conservative analytical assumptions into the troubled forty-three (43) year operational history of Palisades. Entergy’s License Amendment Request (LAR) contains an equivalent margins evaluation, which is an untried methodological approach to measure neutron bombardment-induced reactor vessel embrittlement. Allowing

⁶⁰ 10 C.F.R. § 2.335(a). See also *Vermont Yankee Nuclear Power Corp. & AmerGen Vermont, LLC* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 165-66 (2000) (noting that a petitioner in an individual adjudication cannot challenge generic decisions made by the Commission in rulemakings). 10 C.F.R. § 2.309(f)(1)(iii) (requiring contention to be within the scope the proceeding to be admissible).

⁶¹ 10 C.F.R. § 50.58(b)(6); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-01-07, 53 NRC 113, 118 (2001).

Palisades to continue operations under such relaxed measurement conditions exposes the public to increased danger and is not acceptable. The license amendment to switch to 10 C.F.R. § 50.61a must be denied.⁶²

As discussed below, the Petitioners' contention, along with the explanation and supporting statements provided in the remainder of the Petition, fails to raise any specific challenge to Entergy's LAR and is outside the scope of this proceeding. Instead, the contention challenges the Commission's regulations, as well as other past and pending license amendments that are not the subject of the instant LAR.

Significantly, the Petitioners do not claim that Entergy failed to fulfill the requirements of § 50.61a. Instead, Petitioners argue that Palisades cannot use § 50.61a unless it demonstrates something other than what the rule requires. Simply put, Petitioners want another "bite" at the rulemaking "apple"; such a challenge, however, is beyond the permissible scope of this proceeding. Moreover, as the Commission once said in response to a contention raising PTS concerns in the Palisades license renewal proceeding, "It cannot be ascertained whether the drafters . . . actually even read the Application."⁶³

As discussed below, the Petitioners' arguments fall into several related, inadmissible categories. First, the Petitioners repeatedly argue that the embrittlement calculation in § 50.61a is not a sufficient substitute for the physical testing of surveillance capsules removed from the reactor, and that additional capsules should be withdrawn from the reactor vessel beyond those withdrawn under the withdrawal schedule approved under 10 C.F.R. Part 50, Appendix H.⁶⁴ However, this is a challenge to the rule and the surveillance program at Palisades, not to Entergy's compliance with the rule in its LAR. Second, the Petitioners challenge several

⁶² Amended Petition at 11-12.

⁶³ *Palisades*, CLI-06-17, 63 NRC at 730 (alterations in original), *citing* LBP-06-10, 63 NRC at 353.

⁶⁴ Amended Petition at 10-15, 20.

aspects of the LAR's inclusion of embrittlement data from other "sister plants."⁶⁵ These arguments, however, are inadmissible because they challenge the rule, past amendments and Staff actions, and fail to raise a genuine dispute with the LAR. Third, the Petitioners raise miscellaneous challenges to matters that are not the subject of the instant LAR,⁶⁶ such challenges, however, are beyond the scope of this proceeding, which is limited to the amendment noticed in the *Federal Register*. Fourth, the Petitioners challenge the Staff's NSHC determination;⁶⁷ such a challenge, however, is not the proper subject for adjudication.⁶⁸ For all of these reasons, as discussed more fully below, the Petition fails to present an admissible contention.

1. Petitioners' Challenges to the Surveillance Program at Palisades Challenge the Requirements of § 50.61a and are Inadmissible

The Commission adopted § 50.61a after notice and comment, and thoughtful consideration.⁶⁹ The provision allows a licensee to employ an alternative methodology to assess how well its reactor vessel materials respond to a PTS event other than the methods in § 50.61. As described above, § 50.61a sets out with particularity what the licensee must demonstrate to use § 50.61a's criteria in lieu of those in § 50.61.⁷⁰ If, after review, the Commission determines that a licensee has met those requirements, the Commission will grant the amendment authorizing the plant to use § 50.61a.⁷¹ To raise an admissible contention in such a license amendment proceeding, a petitioner must argue—with expert support—that the

⁶⁵ *Id.* at 16-19.

⁶⁶ *Id.* at 14, 16, 19-20.

⁶⁷ *Id.* at 8-9.

⁶⁸ See discussion *infra* at 31-32.

⁶⁹ See 75 Fed. Reg. at 13.

⁷⁰ 10 C.F.R. § 50.61a(c)(1)-(3).

⁷¹ 10 C.F.R. § 50.61a(c) ("Before the implementation of this section, each licensee shall submit a request for approval in the form of an application for a license amendment in accordance with § 50.90 together with the documentation required by paragraphs (c)(1), (c)(2), and (c)(3) of this section for review and approval by the Director of the Office of Nuclear Reactor Regulation (Director).").

applicant has failed to meet the requirements in § 50.61a and therefore the NRC should not approve the amendment. A petitioner cannot simply argue that § 50.61a is flawed because it fails to require an applicant to do X or should not allow an applicant to do Y. In other words, a contention cannot challenge the rule's requirements, but must argue that the applicant failed to *fulfill* those requirements.

An examination of the language of Petitioners' contention and the basis they provide reveals that the contention challenges the Commission's generic determination, through rulemaking, that § 50.61a provides an acceptable alternative to the use of § 50.61. For example, a recurring theme in the Petitioners' arguments is that Palisades should not be allowed to use § 50.61a because § 50.61a, unlike § 50.61, relies on "estimates" and lacks "scientific rigor."⁷² This argument, however, challenges § 50.61a, not Entergy's LAR. As explained above, § 50.61a developed new screening criteria for PTS events based on thorough studies of U.S. reactor operating experience. The NRC studied information from three operating PWRs, *including Palisades*, and concluded that the new screening criteria developed based on its studies could be applied to the entire fleet of operating PWRs.⁷³ Further, the technical basis document supporting the rule concluded that the screening criteria in § 50.61 were unnecessarily conservative.⁷⁴ Therefore, § 50.61a allows licensees to adopt its new screening criteria as long as they meet the requirements in § 50.61a(c), described *supra* at 10-12. In accordance with 10 C.F.R. § 2.335, the Petitioners' argument that the rule itself is flawed is inadmissible.

Similarly, the Petitioners argue that Palisades should not be allowed to use § 50.61a because the plant has surveillance capsules for measuring reactor vessel embrittlement that

⁷² Amended Petition at 11 ("Entergy plans to substitute the estimate procedure of 10 C.F.R. § 50.61a for the scientific rigor implicated by § 50.61, despite the availability of scientifically-measurable coupons."); *id.* at 10 ("10 C.F.R. § 50.61a allows Entergy to substitute various estimates of the status of the RPV for actual data investigation and analysis."); *id.* at 14-15.

⁷³ 75 Fed. Reg. at 14.

⁷⁴ *Id.* at 13.

have not yet been removed from the reactor.⁷⁵ According to the Petitioners, Entergy cannot use the screening criteria in § 50.61a; instead, Entergy must remove more surveillance capsules from the reactor and analyze the physical evidence of embrittlement.⁷⁶ The Petitioners' expert, Dr. Gundersen, makes this argument succinctly, "Until a new capsule sample is removed and analyzed, the analytical assumptions created for the proposed license amendment are unable to be validated and verified."⁷⁷ Nowhere, however, do the Petitioners point to any provision in the NRC's rules that impose such a requirement. To the contrary, by arguing that some additional requirement must be imposed to enable Palisades to use the alternate requirements in § 50.61a, the Petitioners are, in fact, challenging the adequacy of the rule itself, rather than the adequacy of Entergy's license amendment request.

As discussed *supra* at 10-11, under § 50.61a, an applicant must analyze data such as surveillance capsules that have been removed from the reactor to determine whether that data is consistent with the embrittlement model predicted by § 50.61a.⁷⁸ Nowhere does § 50.61a require the licensee to remove further specimens from the reactor, beyond those removed as part of its regular surveillance program, to qualify for implementation of the rule. Rather, surveillance data from the facility is obtained from capsules withdrawn under the withdrawal schedule for surveillance capsules established under a separate regulatory provision — *i.e.*, 10 C.F.R. Part 50, Appendix H.⁷⁹ The Petitioners' argument that Entergy must remove

⁷⁵ Amended Petition at 11-12, 14-15, 20.

⁷⁶ *Id.*

⁷⁷ Gundersen Decl. at ¶ 54; *see also* Amended Petition at 20.

⁷⁸ 10 C.F.R. §§ 50.61a(a)(10), (f)(6)(i)(B).

⁷⁹ Appendix H describes the requirements for a reactor's material surveillance program, including the withdrawal schedule for surveillance capsules. 10 C.F.R. Part 50, App. H § (III)(B)(1). In particular, Appendix H states that the design of the surveillance program and the capsule withdrawal schedule must meet the requirements of the edition of American Society for Testing and Materials (ASTM) E-185 that is current on the issue date of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) to which the reactor vessel was purchased. *Id.* In accordance with Appendix H, licensees must submit their capsule withdrawal schedules to the NRC for approval. 10 C.F.R. Part 50, App. H § (III)(B)(3).

surveillance capsules from the reactor before using § 50.61a thus challenges the rule, which does not require the removal of additional surveillance capsules beyond those withdrawn under the Part 50, Appendix H withdrawal schedule.⁸⁰

In asserting that additional capsules should be withdrawn from the reactor vessel, the Petitioners note that four surveillance capsules remain in the reactor vessel and are available for testing, one has not been removed since 2003 and another will not be tested until 2019.⁸¹ However, as discussed above, no such requirement appears in the regulations; moreover, these concerns are not relevant to this proceeding. In 2006, Entergy submitted a request for an amendment to its Appendix H withdrawal schedule.⁸² Entergy explained that it had already withdrawn four capsules from the reactor and proposed to modify the schedule for the withdrawal of a fifth capsule.⁸³ In 2007, the NRC approved the plant's modified withdrawal

⁸⁰ The Petitioners assert that the Advisory Committee on Reactor Safeguards ("ACRS") has acknowledged that "the use of all possible physical samples is important to an accurate outcome" when determining the safe operation of a plant using § 50.61a. Amended Petition at 20-21. See also Gundersen Decl. at ¶¶ 51-54. In support of their assertion, the Petitioners point to a statement by the ACRS that "the vehicle for doing that is doing a statistical comparison of a particular reactor's *plant specific surveillance data* with the general trends." Amended Petition at 21 (emphasis in original). The Petitioners use this statement to support their argument that further surveillance capsules be withdrawn from the reactor prior to the implementation of § 50.61a at Palisades. *Id.* at 20-21; Gundersen Decl. at ¶¶ 52-54. However, the statement cited by the Petitioners was made by the Staff—and in any event, it does not support the Petitioners' claim. In November 2014, the ACRS heard from the Staff regarding the regulatory guidance the Staff is preparing for § 50.61a. See Official Transcript of Proceedings, NRC, 619th Meeting of the ACRS (Nov. 6, 2014) ("ACRS Transcript") (ADAMS Accession No. ML14321A542). In the ACRS meeting, the Staff explained the requirements in § 50.61a, and stated that the rule required applicants to "go through a check or a confirmation that the manner in which the[ir] material is embrittling is sufficiently similar to the model that we used in the calculations" and that "the vehicle for doing that is doing a statistical comparison of a particular reactor's plant specific surveillance data with the general trends." ACRS Transcript at 19-20. Contrary to the Petitioners' suggestion, nowhere did the ACRS (or the Staff) state that additional capsules must be withdrawn from the vessel for a licensee to qualify for use of § 50.61a.

⁸¹ Amended Petition at 14, 20.

⁸² See Letter from Paul Hardin, Site Vice President, Nuclear Mgmt. Co., LLC to NRC Document Control Desk, "Revision to Reactor Vessel Surveillance Coupon Removal Schedule" (Sept. 19, 2006) (ADAMS Accession No. ML062630071). See also Letter from Travis Tate, NRC, to Michael Balduzzi, Sr. Vice President, Entergy, "Palisades Nuclear Plant - Approval of Proposed Reactor Vessel Surveillance Capsule Withdrawal Schedule (TAC No. MD3461)" (Aug. 14, 2007) and attached "Safety Evaluation by the Office of Nuclear Reactor Regulation Surveillance Capsule Withdrawal Schedule Palisades Nuclear Plant Nuclear Management Company Docket No. 50-255." ("2007 SE") (ADAMS Accession No. ML071640310).

⁸³ 2007 SE at 2.

schedule because it satisfied the requirements of ASTM E-185-82 and 10 C.F.R. Part 50, Appendix H.⁸⁴ The Petitioners' apparent challenge to the approved capsule withdrawal schedule is inadmissible, as it relates to a prior approval pursuant to 10 C.F.R. Part 50, Appendix H, not the amendment at issue in this proceeding.⁸⁵ The Petitioners may not use this amendment proceeding as a backdoor to file a challenge to the approved modified withdrawal schedule.

In sum, the Petitioners do not claim that Entergy failed to fulfill the requirements of § 50.61a. Instead, they argue that Palisades should not be permitted to use § 50.61a unless the Applicant demonstrates something *other* than what the rule requires. However, challenges to duly enacted regulations are impermissible.⁸⁶

2. The Petitioners' Challenges to Entergy's "Sister Plant" Comparisons Are Inadmissible

a. The Petitioners' Challenges to the Use of Sister Plant Data Challenge the Rule Itself

Several of the Petitioners' arguments concern Palisades' past and present use of reactor vessel embrittlement data from other plants. The Petitioners explain that Dr. Gundersen objects to Entergy's use of "comparable nuclear reactor vessels . . . to comply with § 50.61a."⁸⁷ According to Petitioners, Palisades cannot be compared to other sister plants that have "thus far not exhibited significant signs of reactor metal embrittlement."⁸⁸ Dr. Gundersen explains that Palisades cannot be compared to the two Indian Point units and H.B. Robinson because they were designed by different manufacturers, and "[w]hile it is true that the material used to weld the reactor plates together to create the reactor vessel is similar among the four plants, the

⁸⁴ 2007 SE at 3.

⁸⁵ For the same reason, the Pierman Declaration is not relevant to the amendment at issue. The Declaration concerns Palisades' coupon withdrawal schedule, which is determined by 10 C.F.R. Part 50 Appendix H, and has no bearing on Entergy's application to use § 50.61a.

⁸⁶ 10 C.F.R. § 2.335(a).

⁸⁷ Amended Petition at 16.

⁸⁸ *Id.*; Gundersen Decl. at ¶ 26.

dramatically different nuclear core design and operational power characteristics make an accurate comparison impossible.”⁸⁹ According to Dr. Gundersen, “an exhaustive review of NRC regulations has not unveiled any regulations that allow for such comparisons, and no record of scientific validation of such methodology.”⁹⁰

The Petitioners’ arguments regarding sister-plant comparisons do not present an admissible issue. Contrary to Dr. Gundersen’s claims, § 50.61a requires a licensee to submit and analyze sister-plant surveillance program data as part of its license amendment request if specified criteria in § 50.61a are met. Section 50.61a(a)(10) defines “surveillance data” as “*any data* that demonstrates the embrittlement trends for the beltline materials, including, but not limited to, *surveillance programs at other plants* with or without a surveillance program integrated under 10 CFR part 50, appendix H.”⁹¹ Thus, whenever the term “surveillance data” is used in § 50.61a, it includes surveillance data from other plants.

In addition, Section 50.61a(f)(6)(i) provides, in relevant part, as follows:

The licensee *shall* evaluate the results from a plant-specific or integrated surveillance program if the *surveillance data* satisfy the criteria described in paragraphs (f)(6)(i)(A) and (f)(6)(i)(B) of this section:

(A) The surveillance material must be a heat-specific match for one or more of the materials for which RT_{MAX-X} is being calculated. The 30-foot-pound transition temperature must be determined as specified by the requirements of 10 CFR part 50, Appendix H.

(B) If three or more surveillance data points measured at three or more different neutron fluences exist for a specific material, the licensee shall determine if the surveillance data show a significantly different trend than the embrittlement model predicts. (emphasis added).

In other words, an applicant *must* evaluate surveillance data—which according to the definition above includes data from other plants— *if* (a) the surveillance data material is a “heat-specific”

⁸⁹ Gundersen Decl. at ¶ 27. See also Amended Petition at 16.

⁹⁰ Gundersen Decl. at ¶ 26.

⁹¹ 10 C.F.R. § 50.61a(a)(10) (emphasis added).

match for the materials in the applicant's reactor vessel *and* (b) there are three or more surveillance data points.⁹² If these criteria are met, the rule requires the applicant to use the surveillance data to verify that its predicted reference temperatures are appropriate.⁹³

In accordance with 10 C.F.R. § 50.61a, Entergy's LAR presented surveillance data from Palisades, and included and analyzed the surveillance data from Indian Point, H.B. Robinson, and Diablo Canyon.⁹⁴ The Petitioners have not challenged Entergy's compliance with the rule by alleging, for example, that the surveillance data from sister plants is not a "heat-specific match" or that Entergy's analysis of the sister-plant data was deficient.⁹⁵ Rather, in contradiction to the rule, the Petitioners argue that Entergy should not be allowed to analyze sister-plant data at all. Those assertions challenge NRC regulations and are inadmissible.

b. The Petitioners' Arguments Regarding Sister-Plant Data Impermissibly Challenge Prior Amendments and Past Staff Actions

Several of the Petitioners' arguments regarding sister-plant data question whether the Staff should have allowed Palisades to rely on sister plant data in the past. For example, the Petitioners point to Entergy's use of sister plant data in a Structural Integrity Associates report in 2010, that "served as part of the technical basis" for a finding that Palisades would exceed the § 50.61 screening criteria in April 2017 instead of January 2014.⁹⁶ The Petitioners claim that

⁹² 10 C.F.R. § 50.61a(f)(6)(i)(A)-(B).

⁹³ *Id.* If both criteria are not met, the applicant may rely solely on the calculations in the rule.

⁹⁴ LAR Enclosure at 6-1 – 6-4; *id.* at 6-1 ("Tables 6-1 through 6-3 contain surveillance data of the Palisades beltline and extended beltline materials required to perform the surveillance data evaluation. Tables 6-2 and 6-3 contain sister plant material data from H. B. Robinson Unit 2 (HB2), Indian Point Units 2 and 3 (IP2 and IP3), and Diablo Canyon Unit 1 (DC1). A majority of the data in these tables was obtained from the latest PTS evaluation (Reference 13).").

⁹⁵ To the contrary, Dr. Gundersen admits that "it is true that the material used to weld the reactor plates together to create the reactor vessel is similar among the four plants." Gundersen Decl. at ¶ 27.

⁹⁶ Amended Petition at 16, *citing* Structural Integrity Associates, Inc., Report No. 0901132.401, Rev. 0, "Evaluation of Surveillance Data for Weld Heat No. W5214 for Application to Palisades PTS Analysis" (April 2010) (ADAMS Accession No. ML110060693). The Structural Integrity Associates report cited by Petitioners was submitted to the NRC in 2010 as part of Entergy's PTS evaluation which concluded that "the axial welds fabricated with weld wire heat no. W5214 will not reach the PTS screening criteria limit until April 2017." See Letter from Entergy to NRC Document Control

the report inappropriately averaged eleven surveillance capsules from dissimilar plants.⁹⁷ The Petitioners also assert, relying on Dr. Gundersen, that there is a problem because *the NRC allowed* Palisades to compare itself to sister plants in the past.⁹⁸ Those matters, however, are not at issue here, and the Petitioners do not explain how Entergy's use of sister plant data in a prior amendment proceeding is within the permissible scope of the instant LAR proceeding. Moreover, if anything, the fact that sister-plant data has been used with NRC approval, in past proceedings, undercuts the Petitioners' argument that such data cannot be used in the instant LAR.

In sum, the Petitioners' challenges to the use of sister-plant data in other license amendments, or the Staff's approval of such practices in the past, do not present an admissible issue here. First, it is well-settled that in a licensing proceeding "the applicant's license application is in issue, not the adequacy of the staff's review of the application. An intervenor may not proceed on the basis of allegations that the staff has somehow failed in its

Desk, "Updated Palisades Reactor Vessel Pressurized Thermal Shock Evaluation," at 2 (Dec. 20, 2010) (ADAMS Accession No. ML110060692) (part of ADAMS Package Accession No. ML110060698). The Staff approved Entergy's evaluation and concluded that the screening criteria would not be met until April 2017. Letter from Mahesh Chawla, Project Manager, NRC to Entergy, "Updated Reactor Pressure Vessel Pressurized Thermal Shock Evaluation for Palisades Nuclear Plant (TAC No. ME5263)" and attached "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Facility Operating License No. DPR-20 Updated Pressurized Thermal Shock Evaluation Entergy Nuclear Operations, Inc. Palisades Nuclear Plant Docket No. 50-255" ("2011 SE") (Dec. 7, 2011) (ADAMS Accession No. ML112870050). A later fluence evaluation in June 2013, which the NRC also approved, concluded that Palisades would not reach the 10 CFR 50.61 PTS screening criteria limit until August 2017. See Entergy Letter PNP 2013-046 to NRC Document Control Desk, "Updated Palisades Nuclear Plant Reactor Vessel Fluence Evaluation" (Jun. 25, 2013) (ADAMS Accession No. ML13176A412); Letter from Mahesh Chawla, Project Manager, NRC to Anthony Vitale, Vice President, Entergy, "Palisades Nuclear Plant - Updated Reactor Vessel Fluence Evaluation Supporting a Revised Pressurized Thermal Shock Screening Criteria Limit (TAC NO. MF2326)" and attached "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Updated Reactor Vessel Neutron Fluence Calculations Supporting a New Pressurized Thermal Shock Screenin Criterion Date Entergy Nuclear Operations Palisades Nuclear Plant Docket No. 50-255" ("2013 SE") (Dec. 18, 2013) (ADAMS Accession No. ML13346A136).

⁹⁷ Amended Petition at 16-17.

⁹⁸ *Id.* at 16 (citing Gundersen Decl. at ¶¶ 24.2, 26).

performance.”⁹⁹ Second, as explained above, the scope of a hearing on an LAR is limited by the notice of opportunity for a hearing published in the *Federal Register*.¹⁰⁰ Prior actions and amendments cannot be challenged. Thus, the Petitioners’ claims that previous license amendments were deficient or that the Staff should not have allowed sister plant comparisons in the past are beyond the scope of this proceeding. The Petitioners must challenge the LAR, which they fail to do.

c. The Petitioners’ 10 C.F.R. § 50.59 Arguments Regarding Sister Plant Data are Inadmissible

The Petitioners argue that Entergy’s use of sister plant data is “not sound scientific methodology” and, as a result, Palisades is operating “in the experimental test venue, possible as delineated in 10 C.F.R. 50.59.”¹⁰¹ It is unclear what the Petitioners mean. In 10 C.F.R. § 50.59, the Commission established a process whereby a licensee may determine whether it needs to submit a license amendment application for a proposed change. Under 10 C.F.R. § 50.59(c)(1), a licensee may make changes to a facility and conduct tests and experiments not listed in the plant’s final safety analysis report if those changes do not meet the criteria in subsection (c)(2). If the criteria in § 50.59(c)(2) are met, the licensee must submit a license amendment application in order to make the changes or conduct the test or experiment. This proceeding, however, does not concern whether Entergy failed to submit an LAR; to the contrary, the instant proceeding is about an LAR that Entergy submitted. Thus, Section 50.59 appears to have no bearing on whether Entergy or the Staff should look at comparative data

⁹⁹ *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-812, 22 NRC 5, 56 (1985) (alterations and ellipses omitted), *citing Pac. Gas & Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 807 (1983).

¹⁰⁰ *Trojan*, ALAB-534, 9 NRC at 289 n.6.

¹⁰¹ Amended Petition at 17.

from sister plants in reference to § 50.61a.¹⁰² In sum, the Petitioners' reference to these matters does not support an admissible contention.

d. The Petitioners' Arguments Concerning Cross-Comparisons and Standard Deviations Regarding Sister Plant Data are Inadmissible

In Section IV.C.3 of their Amended Petition, the Petitioners raise additional challenges to the use of comparative data from sister plants.¹⁰³ The Petitioners assert that it is difficult to compare the data from Palisades with data from four other plants, because of the need to assure that the "20% error band[s]"¹⁰⁴ overlap.¹⁰⁵ According to the Petitioners, "To compare this different data without assurance that the 1σ variance [sic¹⁰⁶] from each plant overlaps the other plants lacks scientific validity."¹⁰⁷ In addition, in discussing the differences in flux and fluence from cycle-to-cycle at Palisades, the Petitioners argue that it is "mathematically implausible" that the needed deviation was obtained.¹⁰⁸ The Petitioners therefore argue that additional testing and analysis is needed to "*support relicensure*."¹⁰⁹

¹⁰² In a similar vein, it is hard to understand the Petitioners' and Dr. Gundersen's arguments that because Entergy has not withdrawn a coupon from the Palisades reactor in more than ten years, "Entergy may be operating Palisades as a *test*" under 10 C.F.R. § 50.59(c)(1). Petition at 12 (emphasis in original); Gundersen Decl. at ¶¶ 8, 16, 19. The changes to the reactor coupon withdrawal schedule were made by license amendment, not pursuant to § 50.59(c)(1). In any event, previous changes to the reactor coupon withdrawal schedule are not within the scope of the LAR and do not contravene the requirements of § 50.61a.

¹⁰³ See Amended Petition at 18-19.

¹⁰⁴ The Staff's guidance document, Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence" (Ma. 2001) (ADAMS Accession No. ML010890301) provides guidance regarding the 20% error band. *Id.* at 3-15.

¹⁰⁵ Amended Petition at 18 (citing Gundersen Decl. at ¶¶ 30-33).

¹⁰⁶ Although the Petitioners refer to " 1σ variance," the lower case sigma σ is used in statistics to signify the standard deviation, not variance. "Standard deviation" is a statistical metric that measures the extent to which a set of data is spread out or diffused. "Variance" is the standard deviation squared (*i.e.*, σ^2).

¹⁰⁷ Amended Petition at 18 (citing Gundersen Decl. at ¶ 33).

¹⁰⁸ *Id.* at 18-19 (citing Gundersen Decl. at ¶ 34).

¹⁰⁹ *Id.* at 19 (citing Gundersen Decl. at ¶ 39) (emphasis in original). While the Petitioners argue that relicensure should not occur, the present application does not seek license renewal. The Petitioners' assertion appears to be taken from some other document, and is inapplicable here. It is worth noting that two of the current Petitioners unsuccessfully filed a reactor vessel fracture toughness contention in the

The Petitioners' further arguments regarding the analysis of sister-plant data are inadmissible for the reasons discussed *supra* at 20-25. Specifically, challenges to the use of sister-plant data contravene § 50.61a, which requires the submission of surveillance data, which is defined in the rule to include sister-plant data.¹¹⁰ Moreover, the Petitioners fail to raise a genuine dispute with the LAR.¹¹¹ First, although the Petitioners aver that a statistical analysis comparing data between plants is difficult to perform because of the need to assure a 20% error band overlap, the Petitioners do not identify any error or omission in Entergy's LAR analysis of the Palisades and H.B. Robinson Unit 2, Indian Point Units 2 and 3, and Diablo Canyon Unit 1 surveillance materials.¹¹² The LAR identifies (1) the inputs used for the surveillance data evaluations, (2) the methodology used, and (3) the results of the evaluations.¹¹³ The Petitioners do not allege or explain any flaw or omission in the application. Mere conclusory statements by the Petitioners and their expert do not suffice to support the admission of a proffered contention.¹¹⁴ Second, in their argument concerning flux variability at Palisades and the difficulty in assuring the necessary standard deviation,¹¹⁵ the Petitioners and Dr. Gundersen do not provide any basis for their assertion that fluence cannot be predicted because the fluence

Palisades license renewal proceeding. See *Palisades*, LBP-06-10, 63 NRC at 346-54, *aff'd*, CLI-06-17, 63 NRC 727, 729-33 (2006) (rejecting the contention).

¹¹⁰ 10 C.F.R. §§ 50.61a(a)(10), 50.61a(f)(6)(i).

¹¹¹ 10 C.F.R. § 2.309(f)(1)(vi).

¹¹² See LAR Enclosure, Section 8.2, "Surveillance Capsule Data Statistical Checks."

¹¹³ In an attachment to the LAR, Westinghouse described how the data from the sister plants were evaluated:

Using the methodology described in Section 3.2, a Mean Deviation Test, a Slope Deviation Test, and an Outlier Deviation Test were conducted for each surveillance material. The inputs for the surveillance data evaluations, including the measured values of ΔT_{30} , are provided in Tables 6-1 through 6-3 for the three surveillance materials. The results of the evaluations are shown in Tables 8-6, 8-7, and 8-8.

LAR Enclosure at 8-4.

¹¹⁴ See *Fansteel*, CLI-03-13, 58 NRC at 203; 10 C.F.R. § 2.309(f)(1)(vi) (requiring petitioner to include references to specific portions of the application that petitioner disputes).

¹¹⁵ Amended Petition at 18.

per cycle changes.¹¹⁶ Significantly, the Petitioners do not point to anything in the application which would indicate that Entergy failed to consider the variability between cycles when comparing measured data with calculational data in the LAR.¹¹⁷

Finally, in Section IV.C.3 of the Amended Petition, the Petitioners argue that fluence data from Surveillance Capsule A-60, which was excluded from the licensee's surveillance program in the early 1980s, exceeded the "1 σ variation" [sic] described above.¹¹⁸ The Petitioners maintain that this data would have shown that Palisades must be shut down, and that disregarding Capsule A-60 distorts the analytical basis for continued operation.¹¹⁹ However, as is the case with many of Petitioners' arguments, their concerns with Capsule A-60 have no relevance to the present proceeding. Entergy is not relying on Capsule A-60 at any point in its LAR.¹²⁰ Capsule A-60 was deleted from the Reactor Vessel Surveillance Capsule Program over 30 years ago, and the Reactor Vessel Surveillance Coupon Removal Schedule was modified to provide the option of removing an equivalent capsule instead of the primary capsule in a separate licensing action.¹²¹ That amendment was the subject of a separate notice of opportunity to request a hearing,¹²² and is beyond the scope of this proceeding concerning Entergy's instant request to use § 50.61a instead of § 50.61.¹²³ Moreover, the Petitioners' claim

¹¹⁶ See Gundersen Decl. at ¶¶ 34-36.

¹¹⁷ See *Fansteel*, CLI-03-13, 58 NRC at 203; 10 C.F.R. § 2.309(f)(1)(vi).

¹¹⁸ Amended Petition at 19.

¹¹⁹ *Id.* (citing Gundersen Decl. at ¶¶ 41-42).

¹²⁰ The surveillance capsules that are being used to support the LAR are discussed in LAR Enclosure, Section 6, "Surveillance Capsule Data"

¹²¹ Letter from Walter A. Paulson, NRC, to David J. VandeWalle, Consumers Power Co. "Reactor Vessel Surveillance Capsule Program," enclosing (1) Amendment No. 79 to Provisional Operating License No. DPR-20 for the Palisades Plant, and (2) the Staff's supporting safety evaluation ("SER") (Feb. 28, 1984) (ADAMS Accession No. ML020800206).

¹²² "Monthly Notice; Applications and Amendments to Operating Licenses Involving No Significant Hazards Considerations", 48 Fed. Reg. 49,574, 49,583 (Oct. 26, 1983) (providing a hearing opportunity).

¹²³ As noted in the Staff's SER for Amendment 79, at 1-2, at the time of issuance the Palisades reactor vessel material surveillance program contained two capsules that are located outside the core barrel (Capsule A-60 and Capsule A-240), six capsules that are located at the midplane of the core and

that data from Capsule A-60 must be utilized here, either instead of or in addition to the data obtained from capsules withdrawn under the Applicant's Appendix H capsule withdrawal program, constitute an impermissible challenge to the Commission's rules. As such, the Petitioners' claims regarding the exclusion of Capsule A-60 from Entergy's capsule withdrawal program or the need to utilize data from that capsule here must be rejected.

3. The Petitioners' Other Challenges are Inadmissible

a. The Equivalent Margins Analysis is Part of a Separate Amendment

The Petitioners express concern that Entergy is "seeking NRC approval for another untried methodological approach to measure the neutron bombardment induced reactor vessel embrittlement."¹²⁴ The Petitioners, citing Dr. Gundersen's declaration, challenge Entergy's submittal of "what it calls an equivalent margin analysis to show that even in the portions of the nuclear reactor that did not meet the NRC minimum required 50 ft-lb ductility stress limit, the reactor will still provide sufficient safety margins for continued operation" of Palisades.¹²⁵ Similarly, Dr. Gundersen indicates that he considers Entergy's request and equivalent margins analysis ("EMA") to be evidence that it proposes to operate Palisades "well outside the norm" by reanalyzing the "deteriorating metallurgical conditions" without sampling the surveillance capsules.¹²⁶

two capsules that are located in a low flux region above the core. The SER noted that Capsule A-60 and Capsule A-240 were located in positions within the reactor vessel that are diametrically opposite each other and had similar neutron fluences and temperatures. The SER concluded that, because Capsule A-240 had been withdrawn and tested, it could be used to predict the end-of-life material properties of the Palisades reactor vessel, making withdrawal and testing of Capsule A-60 unnecessary. Thus, although beyond the scope of the § 50.61a proceeding, Petitioners' assertion that the deletion of Capsule A-60 deletes important data, ignores the conclusions of the SER for Amendment 79 that Capsule A-240 already provided the needed information.

¹²⁴ Amended Petition at 19.

¹²⁵ *Id.* at 20 (citing Gundersen Decl. at ¶ 47).

¹²⁶ *Id.* at 20 (citing Gundersen Decl. at ¶ 48).

The Petitioners' arguments are inadmissible here for one fundamental reason — they challenge a different amendment application that is not at issue in this proceeding. On November 12, 2014, Entergy submitted a separate "License Amendment Request for Approval of Palisades Nuclear Plant 10 CFR 50 Appendix G Equivalent Margins Analysis."¹²⁷ That license amendment application concerns the requirements of 10 C.F.R. Appendix G, rather than the use of § 50.61a, and is based on a commitment made by Palisades' former licensee to submit an EMA to the NRC "at least three years before any reactor vessel beltline material Charpy upper-shelf energy (USE) decreases to less than 50 ft-lb, in accordance with 10 CFR 50 Appendix G, Section IV, 'Fracture Toughness Requirements.'"¹²⁸ The Appendix G Amendment contains the EMA, the LAR at issue here contains no such analysis.¹²⁹ In fact, Dr. Gundersen makes it clear in his declaration that his concerns about the EMA and Palisades' compliance with the 50 ft-lb ductility stress limit relate to the Appendix G Amendment, *not* the § 50.61a Amendment which is at issue in this proceeding.¹³⁰ As such, the Petitioners' challenges to the EMA (and the related Appendix G License Amendment Application) are outside the scope of

¹²⁷ See Letter from Anthony J. Vitale, Entergy, 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) ("Appendix G Amendment") (ADAMS Accession No. ML14316A190). The Appendix G Amendment contains five attachments, including Attachment 5, "Westinghouse WCAP-17651-NP Revision 0, 'Palisades Nuclear Power Plant Reactor Vessel Equivalent Margins Analysis'" (Feb. 2013) (ADAMS Accession No. ML14316A208). The Appendix G Application and its attachments can be viewed in ADAMS Package Accession No. ML14316A370. Entergy had initially submitted the Equivalent Margins Analysis ("EMA") for Staff review on October 21, 2013, without a license amendment request. See Appendix G Amendment at 1-2. In October 2014, the Staff informed Entergy that it should resubmit the EMA as a license amendment request pursuant to 10 C.F.R. § 50.90. *Id.* Entergy then submitted the November 12, 2014 Appendix G Amendment request.

¹²⁸ Appendix G Amendment at 2.

¹²⁹ Appendix G Amendment Attachment 5 (containing the EMA).

¹³⁰ Compare Gundersen Decl. at ¶ 45.4 ("one of these amendments proposes a significant analytical deviation from the regulatory requirements of 10[]CFR[]50.61 to § 50.61a") with Gundersen Decl. at ¶ 45.5 ("On top of the aforementioned analytical deviation is an even more alarming License Amendment Request (LAR) containing an equivalent margins evaluation").

this proceeding, which is limited to challenges to the § 50.61a amendment request noticed in the *Federal Register* on September 30, 2014.¹³¹

b. The Petitioners' Claims Regarding the Lack of a Thermal Shield Are Inadmissible

The Petitioners argue, citing Dr. Gundersen's Declaration, that if Palisades had installed a thermal shield before the reactor became operational, there would have been no need for the LAR, presumably because the screening criteria in § 50.61 would not be exceeded during the reactor's operational life.¹³² This claim, however, does not challenge Entergy's compliance with § 50.61a in its LAR. In addition, an assertion that a licensee should have done something to obviate the need for the amendment at issue does not present an admissible issue. Moreover, § 50.61a does not require a licensee to install a thermal shield before using its provisions, and as such, the Petitioners' argument that Entergy should have installed a shield or must do so now does not present an admissible issue here.

c. The Petitioners' Concerns Regarding Prior Amendments are Inadmissible

Finally, the Petitioners claim that the NRC "weakened" the regulatory screening criteria for PTS, by increasing the trigger temperature, first to 200° F and then to 270° F.¹³³ The Petitioners express concern regarding earlier changes to the projected date by which Palisades would likely exceed the screening criteria in § 50.61.¹³⁴ With regard to these matters, the Petitioners argue that the NRC has engaged in a "retreat from regulation."¹³⁵ However, all of

¹³¹ As noted above, the Appendix G Amendment was submitted to the NRC on November 12, 2014. On January 6, 2015, the Appendix G Amendment was noticed in the *Federal Register*. "Biweekly Notice; Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving No Significant Hazards Considerations," 80 Fed. Reg. 520, 523 (Jan. 6, 2015). The Notice provided that members of the public whose interests may be affected by the amendment have 60 days from the date of the publication of the notice to submit a request for a hearing on that amendment. 80 Fed. Reg. at 521.

¹³² See Amended Petition at 16 (citing Gundersen Decl. at ¶ 24.1).

¹³³ Amended Petition at 13-14.

¹³⁴ See Amended Petition at 14; Exhibit A to Amended Petition.

¹³⁵ Amended Petition at 14.

these events occurred previously, and are not part of the current LAR.¹³⁶ Regardless of the Petitioners' views of those prior actions or events, the instant proceeding does not afford petitioners an opportunity to challenge past NRC findings or amendments, nor is it an opportunity to question whether the NRC should have created § 50.61a.¹³⁷ Rather, in order to constitute an admissible contention, the Petitioners must show reason to believe, with sufficient supporting evidence as required in 10 C.F.R. § 2.309(f)(1)(i)-(vi), that Entergy's LAR does not satisfy § 50.61a or the criteria required for use of that regulation. The Petitioners have failed to do so.

4. The Petitioners' Challenge to the Staff's NSHC Determination is Inadmissible

Among their arguments, the Petitioners contend that the Staff's NSHC determination is inadequate and relies upon unsupported assumptions. Specifically, the Petitioners assert that "there is a consequential possibility that significant hazards associated with implementation of [the license amendment] may occur."¹³⁸ This assertion does not present an admissible issue. Apart from discretionary review by the Commission, the Staff's NSHC determination is final and may not be contested by any party.¹³⁹ In this regard, 10 C.F.R. § 50.58(b)(6) states,

No petition or other request for review of or hearing on the staff's significant hazards consideration determination will be entertained by the Commission. The staff's determination is final, subject only

¹³⁶ Petitioners' assertion that the screening criteria in § 50.61 changed over time is not only outside the scope of this proceeding, but it is also incorrect. Since § 50.61 was published in 1985, the PTS screening criteria have always been 270 °F for plates, forgings, and axial weld materials, and 300 °F for circumferential weld materials. See 50 Fed. Reg. at 29,944 (promulgating § 50.61 with the current screening criteria).

¹³⁷ For this reason, Petitioners' Exhibit A is not relevant to this proceeding. In Exhibit A, Petitioners detail what they call regulatory "rollbacks" – instances between 1976 and 2011 in which the NRC looked at issues at Palisades related to PTS and the screening criteria in § 50.61. Petitioners incorporate Exhibit A into the Petition, stating that it is "evidentiary support for their position that more than four decades of regulatory retreat is seriously endangering the public in southwest Michigan and the larger Great Lakes region." Amended Petition at 13. However, the licensee reports, amendment requests, and Staff documents and actions detailed in Exhibit A are outside the scope of this proceeding because they do not challenge the LAR.

¹³⁸ Amended Petition at 9.

¹³⁹ *Shearon Harris*, CLI-01-07, 53 NRC at 118-19.

to the Commission's discretion, on its own initiative, to review the determination.

Therefore, the Petitioners' assertions concerning the Staff's NSHC determination must be rejected.¹⁴⁰

CONCLUSION

For the reasons discussed above, the NRC Staff respectfully submits that the Petitioners have not proffered an admissible contention, as required by 10 C.F.R. § 2.309(f)(1)(i)-(vi). Rather, the Petition presents impermissible challenges to the Commission's regulations, fails to demonstrate any inadequacy in the LAR, and raises numerous issues that are beyond the scope of this proceeding. The Petition should therefore be denied.

Respectfully submitted,

/Signed (electronically) by/

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Executed in Accord with 10 CFR 2.304(d)

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¹⁴⁰ *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-08-18, 68 NRC 533, 541 (2008).

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Dated at Rockville, Maryland
this 12th day of January, 2015

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
ENTERGY NUCLEAR OPERATIONS, INC.) Docket No. 50-255-LA
)
(Palisades Nuclear Plant))

Pursuant to 10 C.F.R. § 2.305, I hereby certify that copies of the foregoing "NRC STAFF ANSWER TO PETITION TO INTERVENE AND REQUEST FOR A HEARING FILED BY BEYOND NUCLEAR, DON'T WASTE MICHIGAN, MICHIGAN SAFE ENERGY FUTURE—SHORELINE CHAPTER, AND THE NUCLEAR ENERGY INFORMATION SERVICE," dated January 12, 2015, have been served upon the Electronic Information Exchange, the NRC's E-Filing System, in the above-captioned proceeding, this 12th day of January, 2015.

Signed (electronically) by

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