

BEFORE THE COMMISSION

June 29, 2015

Counsel for Entergy Nuclear Operations, Inc.

TABLE OF CONTENTS

	Pages
TABLE OF AUTHORITIES	ii
I. INTRODUCTION	1
II. STATEMENT OF THE CASE.....	3
A. Regulatory Background	3
1. Development of 10 C.F.R. § 50.61a	3
2. Requirements for Use of § 50.61a	6
B. Procedural History	8
C. Summary of Board Decision (LBP-15-17)	10
D. Summary of Petitioners’ Appeal.....	13
III. STANDARD OF REVIEW	15
IV. THE COMMISSION SHOULD REJECT PETITIONERS’ APPEAL	16
A. Petitioners’ Appeal Is Facially Deficient Because It Fails to Address Each Ground for the Board’s Ruling Denying Its Proposed Contention.....	16
B. Petitioners’ Appeal Fails to Identify Any Legal Error or Abuse of Discretion That Warrants Further Review and Reversal of the Board’s Admissibility Ruling.....	18
1. The NRC Staff Does Not Have “Discretion” to Preclude an Eligible Plant from Seeking to Comply with the 2010 Alternate PTS Rule	18
2. The Board Did Not Find or Suggest That 10 C.F.R. § 50.61a Imposes “Admittedly Weaker” Requirements That Are Less Protective of Public Health and Safety	20
3. The Board Appropriately Rejected Petitioners’ Arguments Regarding Alleged “Variabilities” In Sister Plant Data As Unsupported and Untimely	22
V. CONCLUSION.....	24

TABLE OF AUTHORITIES

Pages

FEDERAL CASES

<i>Citizens' Awareness Network v. NRC</i> , 59 F.3d 284 (1st Cir. 1995)	19
<i>Frizelle v. Slater</i> , 111 F.3d 172 (D.C. Cir. 1997)	19

REGULATIONS AND FEDERAL REGISTER

10 C.F.R. § 50.58	17
10 C.F.R. § 50.59	18
10 C.F.R. § 50.61	<i>passim</i>
10 C.F.R. § 50.61a	<i>passim</i>
10 C.F.R. Part 50, Appendix A	3
10 C.F.R. Part 50, Appendix G	4, 7
10 C.F.R. Part 50, Appendix H	4
50 Fed. Reg. 29,937 (July 23, 1985)	4
75 Fed. Reg. 13 (Jan. 4, 2010)	<i>passim</i>
75 Fed. Reg. 5,495 (Feb. 3, 2010)	4
75 Fed. Reg. 10,410 (Mar. 8, 2010)	4
75 Fed. Reg. 72,653 (Nov. 26, 2010)	4
79 Fed. Reg. 58,812 (Sept. 30, 2014)	9

NUCLEAR REGULATORY COMMISSION ADJUDICATORY DECISIONS

<i>AmerGen Energy Co., LLC</i> (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235 (2009)	15
<i>Carolina Power & Light Co.</i> (Shearon Harris Nuclear Power Plant), CLI-01-7, 53 NRC 113 (2001)	17
<i>Detroit Edison Co.</i> (Fermi Nuclear Power Plant, Unit 3), LBP-09-16, 70 NRC 275 (2009), <i>aff'd on other grounds</i> , CLI-09-22, 70 NRC 932 (2009)	3

TABLE OF AUTHORITIES

(continued)

	Pages
<i>Dominion Nuclear Conn., Inc.</i> (Millstone Nuclear Power Station, Units 2 & 3), CLI-04-36, 60 NRC 631 (2004).....	15, 16
<i>Entergy Nuclear Operations, Inc. (Palisades Nuclear Plant)</i> , LBP-15-17, 81 NRC __, slip op. (May 8, 2015)	<i>passim</i>
<i>Entergy Nuclear Vt. Yankee, LLC et al.</i> (Vt. Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548 (2004).....	17
<i>Hydro Res., Inc.</i> (P.O. Box 777, Crownpoint, NM 87313), CLI-06-1, 63 NRC 1 (2006).....	15
<i>Luminant Generation Co., LLC</i> (Comanche Peak Nuclear Power Plant, Units 3 and 4), CLI-11-9, 74 NRC 233 (2011).....	15
<i>Luminant Generation Co., LLC</i> (Comanche Peak Nuclear Power Plant, Units 3 & 4), CLI-12-7, 75 NRC 379 (2012)	15
<i>Nuclear Mgmt. Co., LLC</i> (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727 (2006)	2, 18
<i>PPL Susquehanna, LLC</i> (Susquehanna Steam Elec. Station, Units 1 & 2), CLI-15-8, 81 NRC __, slip op. (Apr. 14, 2015).....	15
<i>Private Fuel Storage, L.L.C.</i> (Indep. Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998), <i>aff'd</i> , CLI- 98-13, 48 NRC 26 (1998)	3
<i>Private Fuel Storage, L.L.C.</i> (Indep. Spent Fuel Storage Installation), CLI-05-1, 61 NRC 160 (2005)	16
<i>Progress Energy Fla., Inc.</i> (Levy Cnty. Nuclear Power Plant, Units 1 & 2), CLI-10-2, 71 NRC 27 (2010).....	15
<i>Shieldalloy Metallurgical Corp.</i> (License Amendment Request for Decommissioning of the Newfield, New Jersey Facility), CLI-07-20, 65 NRC 499 (2007).....	15
<i>USEC Inc.</i> (Am. Centrifuge Plant), CLI-06-9, 63 NRC 433 (2006).....	2
<i>USEC Inc.</i> (Am. Centrifuge Plant), CLI-06-10, 63 NRC 451 (2006).....	3, 11

TABLE OF AUTHORITIES

(continued)

Pages

MISCELLANEOUS

“Calculation and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence,” Regulatory Guide 1.190 (Mar. 2001) (ML010890301).....	4, 13
John B. Giessner, NRC Region III, Summary of the March 19, 2013, Public Meeting Webinar Regarding Palisades Nuclear Plant (Apr. 18, 2013) (ML13108A336).....	8
Letter from Mahesh Chawla, Office of Nuclear Reactor Regulation (“NRR”), NRC, to Anthony Vitale, Entergy, Palisades Nuclear Plant – Updated Reactor Vessel Fluence Evaluation Supporting a Revised Pressurized Thermal Shock Screening Criteria Limit (TAC No. MF2326) (Dec. 18, 2013) (ML13346A136)	8
Office of Nuclear Reactor Regulation, Safety Evaluation Report Supporting Amendment 79 to Consumers Power Company Provisional Operating License (Feb. 28, 1984) (ML020800206).....	12, 17
“Recommended Screening Limits for Pressurized Thermal Shock (PTS),” NUREG-1874 (Mar. 2010), <i>available at</i> http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1874/sr1874.pdf	6
Slides from NRC Public Webinar, “Basis for NRC Requirements on Pressurized Thermal Shock” (Mar. 19, 2013) (ML13077A156).....	5
“Technical Basis for Revision of the Pressurized Thermal Shock (PTS) Screening Limit in the PTS Rule (10 CFR 50.61),” NUREG-1806, vol. 1, Part 1 (Aug. 2007) (ML072830076).....	3, 4, 5, 6
“Technical Basis for Revision of the Pressurized Thermal Shock (PTS) Screening Limit in the PTS Rule (10 CFR 50.61),” NUREG-1806, vol. 1, Part 2 (Aug. 2007) (ML072830081).....	6

)	
In the Matter of:)	Docket No. 50-255-LA
)	
ENTERGY NUCLEAR OPERATIONS, INC.)	ASLBP No. 15-936-03-LA-BD01
)	
(Palisades Nuclear Plant))	June 29, 2015
)	
)	

I. INTRODUCTION

Petitioners seek review of the Atomic Safety and Licensing Board's ("Board") Memorandum and Order (LBP-15-17)³ denying their Petition to Intervene and Request for

³ *Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), LBP-15-17, 81 NRC __, slip op. (May 8, 2015) (“LBP-15-17”).

Hearing, originally filed on December 1, 2014, and amended on December 8, 2014.⁴ The Board denied Petitioners' hearing request on the ground that Petitioners' sole proposed contention is inadmissible.⁵ The contention principally alleged that the use of Section 50.61a could cause failure of the Palisades RPV and, therefore, Entergy should instead be required to perform a "physical sampling analysis under § 50.61."⁶

The Commission's "customary practice is to affirm Board rulings on contention admissibility absent an abuse of discretion or error of law."⁷ Petitioners' Appeal provides no basis for disturbing the Board's well-reasoned rejection of their proposed contention. In short, the Board correctly determined that Petitioners' supporting arguments or bases for the proposed contention: (1) improperly challenged NRC regulations; (2) lacked adequate factual or expert opinion support (and, in some cases, were even self-contradicting); and (3) failed to identify any deficiency (much less a material one) in the Palisades LAR.⁸

As discussed further below, Petitioners fail to identify any legal error or abuse of discretion in the Board's admissibility ruling. It is only in the final seven pages of their 24-page brief that Petitioners present *any* argument in support of their appeal, and those scant arguments present no reason to question the Board's carefully rendered analysis of Petitioners' arguments, much less warrant reversal of the Board's ruling by the Commission. Petitioners' Appeal only

⁴ *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) (ML14335A807); *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) ("Petition") (ML14344A321). Unless otherwise noted, all subsequent references to the "Petition" in this Answer are to the December 8, 2014 amended version of the Petition.

⁵ *Palisades*, LBP-15-17, slip op. at 1-2, 47.

⁶ Petition at 5, 15.

⁷ *Nuclear Mgmt. Co., LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 729 (2006) (citing *USEC Inc.* (Am. Centrifuge Plant), CLI-06-9, 63 NRC 433, 439-40 (2006)).

⁸ *See Palisades*, LBP-15-17, slip op. at 32-34, 40-46.

confirms the Board’s well-supported conclusions that Petitioners’ proposed contention is an improper challenge to 10 C.F.R. § 50.61a and devoid of any factual or technical support. As the Board noted, “[w]hen the Commission has determined that compliance with a regulation is sufficient to provide for reasonable assurance of public health and safety, a licensing board cannot impose requirements that exceed those in the regulation,” as Petitioners urge the Board to do here.⁹ Furthermore, the Board correctly concluded that Petitioners’ proffered “expert” failed to provide a reasoned basis or explanation for his opinions or explain how those opinions are relevant to the adequacy of the Palisades LAR.¹⁰

Accordingly, for the reasons discussed herein and for the reasons articulated by the Board, the Commission should deny the Appeal and affirm LBP-15-17 in its entirety.

II. STATEMENT OF THE CASE

A. Regulatory Background

1. Development of 10 C.F.R. § 50.61a

During plant operation, RPVs are exposed to neutron radiation, particularly in the “beltline” region of the RPV, adjacent to the reactor core.¹¹ The NRC has issued a variety of regulatory requirements to address the potential embrittlement of RPVs caused by neutron radiation. These requirements include General Design Criteria 31 in 10 C.F.R. Part 50,

⁹ *Palisades*, LBP-15-17, slip op. at 42 (citing *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), LBP-09-16, 70 NRC 227, 255 (2009), *aff’d on other grounds*, CLI-09-22, 70 NRC 932, 933 (2009) (“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.”)).

¹⁰ *Id.* at 34, 41-42, 44-46. It is well established that “an 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. *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); *id.* (noting that “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.”); *see also USEC Inc.* (Am. Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage*).

¹¹ *See* “Technical Basis for Revision of the Pressurized Thermal Shock (PTS) Screening Limit in the PTS Rule (10 CFR 50.61),” NUREG-1806, vol. 1, Part 1 at xx (Aug. 2007) (“NUREG-1806”) (ML072830076).

Appendix A; the Fracture Toughness Requirements in Part 50, Appendix G; the Reactor Vessel Material Surveillance Program Requirements in Part 50, Appendix H; and the requirements for protection against pressurized thermal shock (“PTS”) events (*i.e.*, rapid cooling of the internal RPV surface followed by repressurization) in 10 C.F.R. §§ 50.61 and 50.61a.¹²

The license amendment in this proceeding seeks to implement the alternate PTS rule in 10 C.F.R. § 50.61a, in lieu of the original, currently-applicable PTS requirements in Section 50.61. LBP-15-17 contains a detailed discussion of the NRC’s original and alternate PTS rules. To briefly summarize, the NRC issued 10 C.F.R. § 50.61, “Fracture toughness requirements for protection against pressurized thermal shock events” in 1985 to address the potential for PTS (“1985 PTS Rule”).¹³ The 1985 PTS Rule requires a reference temperature accounting for end-of-life neutron fluence to be calculated for each RPV beltline material and then compared to fixed screening criteria (270 °F for plates, forgings, and axial weld materials, and 300 °F for circumferential weld materials).¹⁴ During the ensuing decades, advancements in scientific and engineering technologies have resulted in a better understanding and knowledge of reactor materials behavior, including the ability to better evaluate PTS events to estimate loads on RPV walls.¹⁵ As a result, the NRC determined that the screening criteria in the 1985 PTS Rule were “unnecessarily conservative and may impose an unnecessary burden on some licensees.”¹⁶

¹² See “Calculation and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence,” Regulatory Guide 1.190, at 1 (Mar. 2001) (“Reg. Guide 1.190”) (providing a general description of the various NRC regulations addressing potential RPV embrittlement) (ML010890301).

¹³ Final Rule, Analysis of Potential Pressurized Thermal Shock Events, 50 Fed. Reg. 29,937 (July 23, 1985) (“1985 PTS Rule”).

¹⁴ 10 C.F.R. § 50.61(b).

¹⁵ See NUREG-1806, vol. 1, at v.

¹⁶ Final Rule, Alternate Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events, 75 Fed. Reg. 13, 13, 14 (Jan. 4, 2010) (“2010 Alternate PTS 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). Petitioners acknowledge the basis for the 2010 Alternate PTS Rule. See Appeal at 8-10 (discussing the development of the 2010 Alternate PTS Rule without disputing the basis for the rulemaking).

In 1999, the NRC’s Office of Nuclear Regulatory Research began to develop a technical basis to support a revision of the 1985 PTS Rule.¹⁷ The NRC Staff published its technical basis in 2007 in NUREG-1806, concluding that its findings could support “significant relaxation, or perhaps elimination, of . . . 10 CFR 50.61 . . . *without affecting safety*,” because the “earlier analyses, performed some 20 years ago as part of the development of the [1985] PTS rule, were overly conservative, based on the tools available at the time.”¹⁸

Relying on NUREG-1806, the NRC promulgated an “alternate” set of fracture toughness requirements to protect against PTS events.¹⁹ The NRC developed the rule through a joint effort with Department of Energy, national laboratories, universities, and industry over the course of approximately ten years.²⁰ The rulemaking process included numerous opportunities for public involvement and multiple expert technical reviews, including review by the Advisory Committee for Reactor Safeguards (“ACRS”) and an independent panel of experts.²¹ The NRC published the new alternate requirements as a final rule in 2010, codified at 10 C.F.R. § 50.61a (*i.e.* the “2010 Alternate PTS Rule”).²²

Most significantly, in the 2010 Alternate PTS Rule, the NRC “concluded that the risk of through-wall cracking due to a PTS event is much lower than previously estimated,” so “the screening criteria in [the 1985 PTS Rule] are unnecessarily conservative and may impose

¹⁷ NUREG-1806, vol. 1, at v; 2010 PTS Rule, 75 Fed. Reg. at 13.

¹⁸ NUREG-1806, vol. 1, at v (emphasis added).

¹⁹ See 2010 Alternate PTS Rule, 75 Fed. Reg. at 13-14; NUREG-1806, vol. 1, at xx (noting that “[i]t is now widely recognized that the state of knowledge and data limitations in the early 1980s necessitated conservative treatment of several key parameters and models used in the probabilistic calculations that provided the technical basis for the current PTS Rule.”).

²⁰ See Slides from NRC Public Webinar, “Basis for NRC Requirements on Pressurized Thermal Shock,” at 13 (Mar. 19, 2013) (ML13077A156).

²¹ See *id.*

²² See 2010 Alternate PTS Rule, 75 Fed. Reg. at 13.

unnecessary burden on some licensees.”²³ The 2010 Alternate PTS Rule allows licensees to request approval to implement the alternate requirements through a license amendment.²⁴

Notably, the NRC analyzed data from three operating plants to develop the technical basis for the 2010 Alternate PTS Rule—and one of those plants was Palisades.²⁵ Thus, although the 2010 Alternate PTS Rule is applicable to the existing fleet of PWRs,²⁶ it was developed, in part, through evaluation of the specific characteristics of the Palisades RPV.

2. Requirements for Use of § 50.61a

Licensees seeking to use Section 50.61a as an alternative to Section 50.61 must submit a license amendment request with the information required by Section 50.61a(c) at least three years before the facility is expected to reach the screening threshold under the 1985 PTS Rule.²⁷ In accordance with 10 C.F.R. § 50.61a(c)(1), the licensee must submit projected reference temperatures for each reactor vessel beltline material (axial welds, plates, forgings, and circumferential welds) for the end-of-license fluence of the material (*i.e.*, the reference transition temperature, considering the maximum neutron fluence the RPV material will experience over its operating life).²⁸ The projected reference temperature, or RT_{MAX-X} , is calculated by adding the projected change in reference temperature (ΔT_{30}) to the steel’s original unirradiated reference

²³ *Id.* at 13-14.

²⁴ *See id.*; 10 C.F.R. § 50.61a(c).

²⁵ *See, e.g.*, NUREG-1806, vol. 1, at 3-3 (noting that the study “performed detailed calculations for three operating PWRs (Oconee 1, Beaver Valley 1, and Palisades)”; “Technical Basis for Revision of the Pressurized Thermal Shock (PTS) Screening Limit in the PTS Rule (10 CFR 50.61),” NUREG-1806, vol. 1 (Part 2) at 8-1 (Aug. 2007) (noting the use of “calculations for Oconee Unit 1, Beaver Valley 1, and Palisades) (ML072830081); “Recommended Screening Limits for Pressurized Thermal Shock (PTS),” NUREG-1874, at 1, fig. 1.1 (Mar. 2010) (showing analyses from Palisades, Beaver Valley, and Oconee used as inputs into the report), *available at* <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1874/sr1874.pdf> .

²⁶ 10 C.F.R. § 50.61a(b); *see also* 2010 Alternate PTS Rule, 75 Fed. Reg. at 16.

²⁷ 10 C.F.R. § 50.61a(c).

²⁸ *Id.* § 50.61a(g) (Equations 1-4).

temperature ($RT_{\text{NDT}(U)}$).²⁹ The licensee must submit these calculations, including the sources of the calculation inputs, to the NRC for review.

Additionally, 10 C.F.R. § 50.61a(c)(1) requires the licensee to verify that the reference temperatures predicted using the equations in Section 50.61a are appropriate, and to ensure that their predicted reference temperatures correspond to available surveillance data.³⁰ To meet these requirements, licensees must perform statistical analyses using Equations 8 through 12 and Tables 6 through 7 in 10 C.F.R. § 50.61a(g), 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, then the licensee may propose to submit alternative reference temperatures to the Commission.³¹

Section 50.61a(c)(2) contains additional inspection-related requirements. Specifically, it requires licensees to submit volumetric assessments of the flaws found in the RPV beltline. The flaw assessments must use procedures, equipment, and personnel that have been approved under ASME Code, Section XI, Appendix VIII, Supplements 4 and 6.³² The flaw assessment focuses on the number and size of the flaws in the vessel, with the goal of ensuring that the flaws found by inspection of the vessel are represented well or bounded by the number and size of the flaws

²⁹ *Id.* § 50.61a(g) (Equations 1-5).

³⁰ Surveillance data are any data that demonstrate 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 C.F.R. Part 50, Appendix H. 10 C.F.R. § 50.61a(a)(10). Appendix H requires licensees to monitor steel coupons placed in surveillance capsules within the RPV. These coupons are made from the same materials as the plates, forgings, and welds that make up the RPV beltline, and are placed at varying distances from the fuel. The capsules are periodically removed from the RPV, and the coupons are then tested to measure the reference temperature of the steel used in the RPV beltline after varying degrees of irradiation exposure. Because the surveillance capsules are placed closer to the core than is the RPV itself, they accumulate irradiation effects faster than the RPV.

³¹ 10 C.F.R. § 50.61a(f)(6)(vi).

³² *Id.* § 50.61a(e).

on which the reference temperature limits of Section 50.61a were based.³³

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 (“PTS Screening Criteria”) of Section 50.61a. Licensees may propose mitigating strategies if any of the predicted reference temperatures are greater than the PTS limits specified in Table 1.

B. Procedural History

In 2013, the NRC Staff approved Palisades’ most recent neutron fluence evaluation, which concluded that the PTS screening threshold under 10 C.F.R. § 50.61 would not be reached at Palisades until August 2017.³⁴ This means that because the screening threshold has not yet been reached, the NRC has reasonable assurance that the Palisades RPV will not experience fracture during a PTS event.³⁵

Entergy timely filed its LAR to implement the alternate RPV fracture toughness requirements pursuant to 10 C.F.R. § 50.61a at Palisades on July 29, 2014.³⁶ Entergy retained Westinghouse to perform the required technical evaluation, documented in WCAP-17628-NP, Rev. 1, which is attached to the LAR.³⁷ As explained in the LAR, “[t]he evaluation concludes

³³ *Id.* § 50.61a(e)(1)-(3).

³⁴ Letter from Mahesh Chawla, Office of Nuclear Reactor Regulation (“NRR”), NRC, to Anthony Vitale, Entergy, Palisades Nuclear Plant – Updated Reactor Vessel Fluence Evaluation Supporting a Revised Pressurized Thermal Shock Screening Criteria Limit (TAC No. MF2326) (Dec. 18, 2013) (ML13346A136). *See also* LAR, at 2. In doing so, the Staff concluded that there is reasonable assurance of the safe operation of the Palisades RPV through August 2017. *Id.*, encl. at 3-4. Importantly, the Staff did not conclude that operation of Palisades would be unsafe after that date, or that Palisades would exceed PTS screening limits during its licensed operating life. *See* John B. Giessner, NRC Region III, Summary of the March 19, 2013, Public Meeting Webinar Regarding Palisades Nuclear Plant, encl. 2, at 2-3 (Apr. 18, 2013) (“Meeting Summary”) (ML13108A336).

³⁵ *See* 2010 Alternate PTS Rule, 75 Fed. Reg. at 22.

³⁶ LAR at 1.

³⁷ LAR, encl., WCAP-17628-NP, Rev. 1, Palisades, Alternate Pressurized Thermal Shock (PTS) Rule Evaluation (June 2014) (“Palisades Alternate PTS Rule Evaluation”) (ML14211A525). As the Board noted, the Palisades Alternate PTS Rule Evaluation describes the results of Entergy’s evaluation of the Palisades RPV in accordance

that the [Palisades RPV] meets the alternate PTS rule acceptance criteria.”³⁸ The NRC accepted the LAR for docketing, and on September 30, 2014, published the Hearing Notice, which included the NRC Staff’s proposed “no significant hazards consideration” determination and provided interested parties 60 days to request a hearing related to the LAR.³⁹

As previously noted, Petitioners sought to intervene, proposing one contention, which states:

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 comparisons 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 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.⁴⁰

Petitioners offered the “Declaration of Arnold Gundersen,” dated December 1, 2014

(“Gundersen Declaration”) as the principal support for their contention. Entergy and the NRC

with Section 50.61a. It also provides Palisades’ embrittlement model and RT_{MAX-X} calculations across various parts of the RPV, the results of checks against surveillance data, and an analysis of flaws in the RPV. *See Palisades*, LBP-15-17, slip op. at 14.

³⁸ LAR at 3.

³⁹ Biweekly Notice; Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving No Significant Hazards Considerations, 79 Fed. Reg. 58,812, 58,814-15 (Sept. 30, 2014) (“Hearing Notice”).

⁴⁰ Petition at 11.

Staff filed answers opposing the Petition on January 12, 2015,⁴¹ and the Petitioners filed a reply on January 20, 2015.⁴²

On March 25, 2015, the Board heard oral argument on standing and contention admissibility.⁴³ The Board issued LBP-15-17 on May 15, 2015, and Petitioners filed their Appeal with respect to that decision on June 2, 2015. In accordance with 10 C.F.R. § 2.311(b), Entergy files this Answer opposing the Appeal.

C. Summary of Board Decision (LBP-15-17)

In LBP-15-17, the Board denied the Petitioners' hearing request on the ground that Petitioners failed to proffer an admissible contention.⁴⁴ The Board focused first on the fundamental problem with that contention, explaining that by "asking that the Board prohibit what Section 50.61a allows," Petitioners improperly challenged that regulation, contrary to the provisions of 10 C.F.R. § 2.335.⁴⁵ Nevertheless, finding that the Petition contained three potential supporting bases for the contention, the Board "reviewed each of the asserted bases to determine whether any could satisfy the contention admissibility requirements in Section

⁴¹ *Entergy's Answer Opposing Petition to Intervene and Request for Hearing* (Jan. 12, 2015) (ML15012A532); *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* (Jan. 12, 2015) ("NRC Staff Answer") (ML15012A611).

⁴² *Petitioners' Combined Reply in Support of 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'* (Jan. 20, 2015) ("Petitioners' Reply") (ML15020A740).

⁴³ Transcript of Oral Argument on Contention Admissibility (Mar. 25, 2015) ("Tr.") (ML15086A540). At oral argument, Judge Arnold questioned Entergy's counsel regarding a statement by Petitioners in their Reply. Tr. at 86-87. Specifically, the Reply alleges that "[Petitioners' expert Mr.] Gundersen has attested to the lack of proof that the metals from the various RPVs match." Reply at 5. Noting that this claim did not appear in the Petition, the Board afforded Entergy and the NRC Staff the opportunity to each file a brief addressing this issue within ten days of the date the oral argument transcript became available to the parties. Entergy and the NRC Staff accordingly submitted briefs addressing that issue on April 6, 2015. See *Entergy's Brief in Response to New Issue Raised in Petitioners' Reply* (Apr. 6, 2015) (ML15096A590); *NRC Staff's Brief in Response to Petitioners' Statement Regarding Sister-Plant Data* (Apr. 6, 2015) (ML15096A594).

⁴⁴ *Palisades*, LBP-15-17, slip op. at 1-2.

⁴⁵ *Id.* at 29. As noted in LBP-15-17 (slip op. at 28 n.156), Petitioners did not petition for a waiver of 10 C.F.R. § 50.61a pursuant to 10 C.F.R. § 2.335(b).

2.309(f)(1) and also comply with Section 2.335's prohibition on challenging agency regulations."⁴⁶ Based on its careful and measured review of Petitioners' arguments, including those advanced by Mr. Gundersen, the Board concluded that "none of the asserted bases could satisfy both requirements."⁴⁷

With respect to Basis 1, the Board rejected Petitioners' claim that Entergy cannot provide reasonable assurance of public health and safety under the 2010 Alternate PTS Rule without obtaining or using additional Palisades-specific RPV test data.⁴⁸ First, the Board found that Petitioners' argument "amount[s] to a challenge to the Alternate PTS Rule,"⁴⁹ inasmuch it "ask[s] the Board to demand more than Section 50.61a requires."⁵⁰ Second, the Board rejected as factually groundless and immaterial Petitioners' argument that the LAR "ignores" the alleged testing of a material sample (Capsule A-60) in 1984.⁵¹ The Board found no evidence that Capsule A-60 actually had been tested to obtain embrittlement data, and specifically noted that Mr. Gundersen provided no reasoned basis or explanation for "his belief that the capsule was tested approximately thirty years ago and that the results would have required Palisades to shut down."⁵²

⁴⁶ *Palisades*, LBP-15-17, slip op. at 29. As the Board notes in footnote 164 of its decision, the Petition included a fourth basis, which argues that Entergy's equivalent margins analysis allows Palisades to operate its RPV outside of permissible limits. The Board did not consider the fourth asserted basis because, subsequent to the filing of their Petition, the Petitioners filed a separate petition challenging Entergy's separate license amendment request to authorize the equivalent margins analysis, and that petition was pending before another licensing board. *See id.* at 29 n.164. Entergy and the NRC Staff had objected to this basis as outside the scope of this proceeding.

⁴⁷ *Id.* at 30.

⁴⁸ *See id.* at 33.

⁴⁹ *Id.* at 32.

⁵⁰ *Id.* at 33.

⁵¹ *Id.* at 33-34.

⁵² *Id.* at 34 (citing *Am. Centrifuge Plant*, CLI-06-10, 63 NRC at 472). On this point, the Board noted that Palisades License Amendment No. 79, which deleted Capsule A-60 from the Reactor Vessel Surveillance Capsule Program, provides no support for Mr. Gunderson's assertions. *Id.* (citing Office of Nuclear Reactor Regulation, Safety Evaluation Report Supporting Amendment 79 to Consumers Power Company Provisional

On Basis 2, the Board rejected Petitioners’ argument that “sister plant” surveillance data from reactors with different operating characteristics cannot be combined with Palisades’ surveillance data for purposes of the Section 50.61a(f)(6) “consistency check.”⁵³ It concluded that Basis 2 fails to support the admission of the proposed contention because “it conflicts with Section 50.61a(f)(6)(i) regarding the use of surveillance data in the consistency check,” the purpose of which is to check the basic operation of the embrittlement model with surveillance data.⁵⁴ The Board correctly reasoned that if it were to limit the material samples that may be used in the consistency check to those from a particular location from a particular RPV, it “would be adding a new requirement to 10 C.F.R. § 50.61a(f)(6)(i), which is prohibited by 10 C.F.R. § 2.335.”⁵⁵ The Board also rejected, as unsupported and contrary to Section 50.61a(f)(6)(i), Petitioners’ related argument that “significant spatial variability” in the flux and fluence between plants due to differences in core design and operational characteristics renders comparison of surveillance data from different plants virtually impossible.⁵⁶

With respect to Basis 3, the Board rejected—as wholly unsupported—Petitioners’

Operating License (Feb. 28, 1984), at 2 (“Amendment No. 79 SER”) (ML020800206)). As noted in the Amendment No. 79 SER, at the time of amendment issuance, the Palisades Reactor Vessel Surveillance Capsule Program contained two capsules located outside the core barrel (Capsule A-60 and Capsule A-240), six capsules located at the midplane of the core, and two capsules located in a low-flux region above the core. Amendment No. 79 SER, at 1. The SER states 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. *Id.* 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, thereby making withdrawal and testing of Capsule A-60 unnecessary. *Id.* at 1-2. Thus, Petitioners and Mr. Gundersen ignored material information in the Amendment No. 79 SER that directly undercuts their argument.

⁵³ *Palisades*, LBP-15-17, slip op. at 28-29, 40-41.

⁵⁴ *Id.* at 40. As the Board correctly explained, the consistency check seeks to compare, for a specific material type, the model’s projected embrittlement with the actual embrittlement values at the same fluence provided by material samples. *Id.* (citing 10 C.F.R. § 50.61a(f)(6)(i)(B); 2010 Alternate PTS Rule, 75 Fed. Reg. at 16). Section 50.61a states that surveillance data *must* be used in the consistency check when (1) the surveillance material is a heat-specific match for one or more of the materials for which RT_{MAX-X} is being calculated, and (2) three or more surveillance data points measured at three or more different neutron fluences exist for a specific material, irrespective of its location within the RPV or from which RPV it was obtained. *Id.*

⁵⁵ *Id.* at 40-41.

⁵⁶ *Id.* at 41.

argument that the use of sister plant surveillance data in combination with Palisades' data violates a purportedly "binding" 20% error limit.⁵⁷ Petitioners and Mr. Gundersen claimed that it is extremely difficult to compare fluence data from sister plants while still maintaining all of the data within one standard deviation ("1 σ ") and a 20% "error band."⁵⁸ They further alleged that certain plant-specific fluence data from Palisades do not fall within these standards, but Petitioners did "not specify the specific variable to which this 20% limit applies."⁵⁹ Despite noting a lack of clarity in Petitioners' arguments, "the Board examined the issue in an attempt to understand Petitioners' concerns."⁶⁰ The Board found that the 20% limit discussed by Mr. Gundersen "pertains to *projected* fluence values for an RPV, and does not pertain to comparisons of the Palisades embrittlement model with *measured* fluence and embrittlement values coming from either Palisades or sister plant material samples."⁶¹

D. Summary of Petitioners' Appeal

The majority of Petitioners' appellate brief is devoted to discussion of the history of the original and alternate PTS rules and a recitation of the arguments previously made by Petitioners and Mr. Gundersen in support of their rejected contention.⁶² Yet Petitioners omit any discussion

⁵⁷ See *id.* at 41-42.

⁵⁸ See *id.* at 36-37 (citing Petition at 18; Gundersen Declaration ¶ 30); see also *id.* at 40 (citing Reply at 8; Tr. at 31).

⁵⁹ *Id.* at 37 n.204.

⁶⁰ *Id.* at 41.

⁶¹ *Palisades*, LBP-15-17, slip op. at 42 (emphasis in original). The 20% error limit cited by Mr. Gunderson can be traced to Reg. Guide 1.190, which concerns how fluence is modeled within a single reactor. See *id.* at 41. Reg. Guide 1.190 specifies that the uncertainty in reactor vessel neutron fluence *at a given location* should be 20% (1 σ) or less when the fluence—as calculated using the methods specified in that guidance document—is used to determine the reference transition temperature for a material. See Reg. Guide 1.190 at 3. That is, Reg. Guide 1.190 indicates that a certain portion of all projections derived from a fluence model should fall within 20% of empirical measurements, if those calculations are to be used as inputs to embrittlement determinations. See *Palisades*, LBP-15-17, slip op. at 42 (citing Reg. Guide 1.190, at 3; Tr. at 54-55). The 20% or 1 σ standard thus applies to estimates of the *uncertainty* in specific fluence calculations at a *particular location*—not to "variations" in fluence across the core at different locations, as the Petitioners and Mr. Gundersen incorrectly assumed.

⁶² See generally Appeal at 3-17.

of the legal standards governing Commission review of a licensing board's contention admissibility ruling. Beginning on page 18 of their brief, Petitioners present three brief arguments in support of their Appeal.

First, Petitioners assert that the Board erroneously found the NRC Staff's "decision" to "allow" Entergy to invoke 10 C.F.R. § 50.61a (as opposed to 10 C.F.R. § 50.61) to be "nondiscretionary."⁶³ In essence, Petitioners claim that they are not challenging Section 50.61a *per se*, but instead are arguing that the NRC Staff (and indirectly, the Board) should exercise its purported "discretion" to *not* allow Entergy to invoke the 2010 Alternate PTS Rule.⁶⁴

Second, Petitioners claim that the Board sanctioned a "legally anomalous" result and acted in "derogation" of the Atomic Energy Act's ("AEA") "reasonable assurance" standard by concluding that Entergy can lawfully choose to meet the alternate fracture toughness requirements for protection against PTS events in 10 C.F.R. § 50.61a.⁶⁵ In support, Petitioners allege that because Palisades contains the "worst-embrittled" RPV in the United States, it should not be permitted to rely on the "admittedly weaker" requirements in Section 50.61a.⁶⁶

Finally, Petitioners argue that the Board improperly rejected their expert's asserted "lack of proof" that the surveillance materials from the various RPVs cited in the Palisades LAR "match," particularly in light of the "huge variations in neutron flux in Palisades alone."⁶⁷ The result, Petitioners claim, are "inappropriate comparisons" of Palisades and sister plant surveillance data.⁶⁸

⁶³ *Id.* at 18.

⁶⁴ *Id.* at 18-19.

⁶⁵ *Id.* at 21-22.

⁶⁶ *Id.*

⁶⁷ *Id.* at 22-23.

⁶⁸ *Id.* at 22.

For the reasons set forth below, Petitioners' arguments have no legal or factual merit, and certainly do not establish any error of law or abuse of discretion in the Board's contention admissibility ruling in LBP-15-17.

III. STANDARD OF REVIEW

Section 2.311 permits an appeal as of right on the question of whether an initial intervention petition should have been wholly denied.⁶⁹ Whether an appeal lies under section 2.311 or 2.341, the standard for review of contention admissibility determinations is the same: the Commission "will disturb a licensing board's contention admissibility ruling only if there has been an error of law or an abuse of discretion."⁷⁰ Thus, when a board has reviewed the record in detail, the Commission generally is disinclined to upset its findings, particularly on matters involving fact-specific issues or consideration of expert affidavits or submissions.⁷¹

An appeal that does not point to an error of law or an abuse of discretion, but simply restates the petitioner's arguments, does not constitute a valid appeal.⁷² When a licensing board holds that a contention is inadmissible for failing to meet more than one of the requirements specified in 10 C.F.R. § 2.309(f)(1)(i)-(vi), a petitioner's failure to address each ground for the Board's ruling is sufficient justification for the Commission to reject the petitioner's appeal.⁷³

⁶⁹ *Luminant Generation Co., LLC* (Comanche Peak Nuclear Power Plant, Units 3 & 4), CLI-12-7, 75 NRC 379, 385 (2012) (citations omitted).

⁷⁰ *Id.* at 386 (citing *Progress Energy Fla., Inc.* (Levy Cnty. Nuclear Power Plant, Units 1 & 2), CLI-10-2, 71 NRC 27, 29 (2010); *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 260 (2009); *Luminant Generation Co., LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), CLI-11-9, 74 NRC 233, 237 (2011)).

⁷¹ *Hydro Res., Inc.* (P.O. Box 777, Crownpoint, NM 87313), CLI-06-1, 63 NRC 1, 2 (2006).

⁷² *Shieldalloy Metallurgical Corp.* (License Amendment Request for Decommissioning of the Newfield, New Jersey Facility), CLI-07-20, 65 NRC 499, 503-05 (2007).

⁷³ *Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-04-36, 60 NRC 631, 638 (2004). Section V of the Board's decision contains a discussion of the NRC's contention admissibility requirements and related legal principles and precedent. *See* LBP-15-17, slip op. at 26-28; *see also PPL Susquehanna, LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), CLI-15-8, 81 NRC ___, slip op. at 5-6 (Apr. 14, 2015) (summarizing the Commission's contention admissibility standards).

Furthermore, when considering an appeal, the Commission is free to affirm a board decision on any ground finding support in the record, whether or not relied on by the Board.⁷⁴

IV. THE COMMISSION SHOULD REJECT PETITIONERS' APPEAL

A. Petitioners' Appeal Is Facially Deficient Because It Fails to Address Each Ground for the Board's Ruling Denying Its Proposed Contention

The Appeal is deficient on its face because it fails to squarely address each ground on which the Board denied the proposed contention and to identify any clear error of law or abuse of discretion by the Board.⁷⁵ Indeed, Petitioners rely principally on vague and conclusory assertions by counsel. Petitioners' arguments also are lacking in substance and merit.

In a well-reasoned and cogent decision, the Board carefully parsed each of Petitioners' stated bases or arguments and the information offered in support of those arguments, including the Gundersen Declaration. In the aggregate, the Board found that Petitioners' arguments: (1) improperly challenged NRC regulations; (2) lacked adequate factual or expert opinion support (and, in some cases, were self-contradicting); and (3) failed to identify any deficiency in the Palisades LAR.⁷⁶ Significantly, the Appeal fails to take direct issue with any of the Board's key findings and explain *why* they constitute legal error or an abuse of discretion. In particular, based on its review of the record, the Board correctly concluded that:

- Petitioners' claims concerning the use of analytical model results over physical data do not lead to an admissible contention because they amount to a challenge to the 2010 Alternate PTS Rule.⁷⁷ By advocating that the Board require the testing of additional samples, Petitioners ask the Board to demand more than Section 50.61a requires.⁷⁸

⁷⁴ *Private Fuel Storage, L.L.C.* (Indep. Spent Fuel Storage Installation), CLI-05-1, 61 NRC 160, 166 (2005) (redacted public version of decision) (citing federal court precedent).

⁷⁵ *See Millstone*, CLI-04-36, 60 NRC at 638.

⁷⁶ *See Palisades*, LBP-15-17, slip op. at 32-34, 40-46. The LAR identifies (1) the inputs used for the surveillance data evaluations, (2) the methodology used, and (3) the results of the evaluations. Petitioners never alleged or explained any specific flaw or omission in the LAR.

⁷⁷ *Id.* at 32.

⁷⁸ *Id.* at 33.

- Petitioners and Mr. Gundersen provided no factual support for their assertion that Palisades Capsule A-60 had been removed and tested for embrittlement data in the 1980s, so as to provide additional surveillance data requiring evaluation by Entergy.⁷⁹ (As discussed *supra* at footnote 52, the Staff’s Amendment No. 79 SER refutes Petitioners’ argument.)
- Petitioners’ claims regarding use of sister plant surveillance data conflict with Section 50.61a(f)(6)(i) regarding the use of surveillance data in the consistency check, because “[f]rom the standpoint of the consistency check, a material sample of the same fluence and material type is no different whether obtained from the Palisades RPV or a sister plant RPV.”⁸⁰
- Mr. Gundersen did not assert that the sister plant material samples are of different chemical composition compared to Palisades’ material samples in his declaration. Therefore, Petitioners inappropriately raised this argument for the first time in their reply. Regardless, Mr. Gundersen admitted that the sister plant and Palisades samples are similar by stating 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.”⁸¹ Furthermore, the Board’s review of the Palisades Alternate PTS Rule Evaluation “shows no reason to doubt that the sister plant material samples are the same ‘heat’ or composition compared to the materials in the Palisades RPV.”⁸²
- Petitioners cited no regulation as the source of the 20% error limit requirement alleged to exist by them and their expert, and insofar as NRC guidance discusses such a limit, it pertains to estimates of the uncertainty in specific fluence calculations or projections at a particular RPV location—not to “variations” in measured fluence and embrittlement values across the core at different RPV locations.⁸³
- Petitioners’ challenge to the NRC Staff’s no significant hazards consideration determination is procedurally barred from litigation pursuant to 10 C.F.R. § 50.58(b)(6) and NRC adjudicatory precedent.⁸⁴

⁷⁹ *Id.* at 33-34.

⁸⁰ *Id.* at 41.

⁸¹ *Id.* at 46 n.255 (quoting Gundersen Declaration ¶ 27).

⁸² *Id.* at 46. As both the NRC Staff and the Board correctly noted, though the sister plant material samples do have slightly different amounts of copper, nickel, phosphorous, and manganese than the materials in the Palisades RPV, Section 50.61a(f)(6), equations 5–7, specifically account for differing amounts of those elemental metals between material samples for the consistency check. *Id.*

⁸³ *See id.* at 38, 41-42.

⁸⁴ *Id.* at 44 (citing *Entergy Nuclear Vt. Yankee, LLC et al.* (Vt. Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 560–61 (2004)). *See also 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.”).

- Petitioners’ argument that Entergy is operating Palisades as a “regulator-endorsed national test” or “experiment” to determine how long a damaged vessel can continue to operate violates 10 C.F.R. § 50.59 is misplaced, because “Section 50.59 defines what activities the licensee may pursue *without* submitting a license amendment request.”⁸⁵

As discussed further below, Petitioners’ Appeal provides no reason for the Commission to depart from its “customary practice” of affirming Board rulings on contention admissibility absent an abuse of discretion or error of law.⁸⁶

B. Petitioners’ Appeal Fails to Identify Any Legal Error or Abuse of Discretion That Warrants Further Review and Reversal of the Board’s Admissibility Ruling

As noted above, Petitioners make just three arguments in ostensible support of their request for Commission review. None of the arguments has merit. Indeed, for the most part, Petitioners seek to renew their overt challenge to the 2010 Alternate PTS Rule codified in 10 C.F.R. § 50.61a. Accordingly, their Appeal should be rejected for failing to identify any error of law or abuse of discretion.

1. The NRC Staff Does Not Have “Discretion” to Preclude an Eligible Plant from Seeking to Comply with the 2010 Alternate PTS Rule

Petitioners’ first argument is based on the spurious notions that (1) the NRC Staff (*i.e.*, the Director of NRR) has “discretion” to decide “whether to allow a particular applicant to invoke 10 C.F.R. § 50.61a,”⁸⁷ and (2) 10 C.F.R. § 50.61 provides “superior” reasonable assurance of protection of the public health and safety than the allegedly “weaker” and “flaccid” requirements of 10 C.F.R. § 50.61a.⁸⁸ Notably, in this proceeding, the NRC Staff has stated that to address PTS, the NRC requires licensee to meet “either” 10 C.F.R. § 50.61 or 10 C.F.R. § 50.61a, and that “[t]he Commission’s regulations permit a reactor licensee to follow *either* of

⁸⁵ *Palisades*, LBP-15-17, slip op. at 44.

⁸⁶ *Palisades*, CLI-06-17, 63 NRC at 729.

⁸⁷ Appeal at 18.

⁸⁸ *Id.* at 18, 20.

those regulations, provided it satisfies the criteria and requirements set forth in the specified regulation.”⁸⁹ The Commission made this fact clear in the 2010 Alternate PTS Rule:

This final rule provides alternate PTS requirements based on updated analysis methods. This action is desirable because the existing requirements are based on unnecessarily conservative probabilistic fracture mechanics analyses. This action reduces regulatory burden for those PWR licensees who expect to exceed the existing requirements before the expiration of their licenses, while maintaining adequate safety, *and may choose to comply with the final rule as an alternative to complying with the existing requirements.*⁹⁰

Thus, the only discretion evident here is the *licensee’s* discretion to decide which set of PTS requirements it will seek to meet—the original 1985 requirements embodied in Section 50.61 or the 2010 alternate requirements contained in Section 50.61a. That choice is solely the licensee’s and may not be vetoed by administrative fiat of the NRC Staff. If a licensee invokes Section 50.61a, then the NRC Staff is statutorily obligated to verify and ensure that the licensee complies with the applicable requirements of that rule. Indeed, if a licensee were to make the requisite showings to apply Section 50.61a, as specified in that regulation, then it would be arbitrary and capricious for the NRC to deny a licensee the option to rely upon the rule.⁹¹

The foregoing passage from the 2010 Alternate PTS Rule also makes clear that the Commission did not view the new rule as imposing “weaker” requirements or eroding protection of the public health and safety. Indeed, as the Board noted, when the Commission promulgated 10 C.F.R. § 50.61a, it stated that “this rule ‘provides reasonable assurance’ of public health and safety, thereby endorsing the 50.61a embrittlement model approach and precluding requests to

⁸⁹ NRC Staff Answer at 7 (emphasis in original).

⁹⁰ 2010 Alternate PTS Rule, 75 Fed. Reg. at 13 (emphasis added). As Petitioners acknowledge, “§ 50.61a is the culmination of decades of learning about embrittlement.” Appeal at 23.

⁹¹ *See, e.g., Citizens’ Awareness Network v. NRC*, 59 F.3d 284, 291 (1st Cir. 1995) (explaining that an alteration or reversal of agency policy “must be accompanied by some reasoning—some indication that the shift is rational, and therefore not arbitrary and capricious”). As the Board noted, “[a]ll agencies must adhere to their own regulations.” *Palisades*, LBP-15-17, slip op. at 42 n.237 (citing *Frizelle v. Slater*, 111 F.3d 172, 177 (D.C. Cir. 1997)).

create requirements more restrictive than the rule.”⁹²

In summary, there is no legal basis for Petitioners’ claim that the NRC Staff (or, for that matter, the Board) has “considerable discretion” to preclude an eligible plant—like Palisades—from choosing to comply with the alternate fracture toughness requirements contained in Section 50.61a in favor of those set forth in Section 50.61. Petitioners, at bottom, continue to take issue with the adequacy of the 2010 Alternate PTS Rule’s requirements—not with the LAR’s conformity with those requirements.⁹³ Thus, the Board correctly rejected their proposed contention pursuant to 10 C.F.R. § 2.335 as a prohibited attack on an NRC regulation.⁹⁴

2. The Board Did Not Find or Suggest That 10 C.F.R. § 50.61a Imposes “Admittedly Weaker” Requirements That Are Less Protective of Public Health and Safety

Petitioners’ second argument essentially is a reformulation of Petitioners’ preceding claim that Section 50.61a imposes “weaker” requirements than Section 50.61. Specifically, Petitioners claim that in referring to Section 50.61’s requirements as “more demanding” than the alternate requirements in Section 50.61a, “the Board agreed that the ‘evident purpose’ of 10 C.F.R. § 50.61a is to weaken the regulatory rigor over nuclear utilities with serious RPV ductility problems.”⁹⁵ They further assert that the Board’s “candor” shows that Section 50.61a exists merely to allow Entergy to eschew compliance with the destructive testing obligations of

⁹² LBP-15-17, slip op. at 32 (quoting 2010 Alternate PTS Rule, 75 Fed. Reg. at 22).

⁹³ As the Staff succinctly put it, “a contention cannot challenge the rule’s requirements, but must argue that the applicant failed to *fulfill* those requirements.” NRC Staff Answer at 17 (emphasis in original).

⁹⁴ As stated earlier, Petitioners did not seek a waiver of 10 C.F.R. § 50.61a with respect to the Palisades plant. Moreover, the appropriate mechanisms for challenging the 2010 PTS Rule would have included the submission of comments to the NRC on the proposed rule, otherwise participating in the development of the 2010 PTS Rule, or filing a petition for rulemaking under 10 C.F.R. § 2.802. Petitioners have done none of those things. *See* 2010 Alternate PTS Rule, 75 Fed. Reg. at 16 (“All the comments on the proposed rule and supplemental proposed rule were submitted by industry stakeholders.”).

⁹⁵ Appeal at 20-21 (quoting *Palisades*, LBP-15-17, slip op. at 29).

10 C.F.R. § 50.61 and the AEA’s reasonable assurance standard.⁹⁶

Petitioners, unsurprisingly, fail to provide any legal or factual support for their bald claims, which grossly mischaracterize the relevant Board statement. In referring to the Section 50.61 requirements as “more demanding,”⁹⁷ the Board implicitly acknowledged what the Commission stated in the 2010 Alternate PTS Rule—that “the screening criteria in § 50.61 are *unnecessarily* conservative and may impose an *unnecessary* burden on some licensees.”⁹⁸ The Board did not suggest that Section 50.61a is inferior or “weaker” than Section 50.61, or less protective of the public health and safety.⁹⁹ On the contrary, the Board expressly noted the Commission’s previous statements that Section 50.61a provides a “better” method for estimating the fracture toughness of reactor vessel materials over the lifetime of a plant,¹⁰⁰ and “provides *reasonable assurance* that licensees operating below the screening criteria could endure a PTS event without fracture of vessel materials, thus assuring integrity of the reactor pressure vessel.”¹⁰¹

Accordingly, Petitioners’ second argument also fails to identify any legal error or abuse of discretion in the Board’s decision.

⁹⁶ *Id.* at 22.

⁹⁷ *Palisades*, LBP-15-17, slip op. at 29.

⁹⁸ 2010 Alternate PTS Rule, 75 Fed. Reg. at 13, 14 (emphasis added).

⁹⁹ *See* Appeal at 22 (erroneously claiming that the Commission issued 10 C.F.R. § 50.61a “in derogation of the binding requirement of reasonable assurance that the public’s health and safety will be the priority for protection”).

¹⁰⁰ *Palisades*, LBP-15-17, slip op. at 11 (quoting 2010 Alternate PTS Rule, 75 Fed. Reg. at 18).

¹⁰¹ *Id.* (quoting 2010 Alternate PTS Rule, 75 Fed. Reg. at 22) (emphasis added). As the Board further noted, the Commission also stated that “[t]he final rule will not significantly increase the probability or consequences of accidents, result in changes being made in the types of any effluents that may be released off site, or result in a significant increase in occupational or public radiation exposure.” *Id.* (quoting 2010 Alternate PTS Rule, 75 Fed. Reg. at 22).

3. The Board Appropriately Rejected Petitioners' Arguments Regarding Alleged "Variabilities" In Sister Plant Data As Unsupported and Untimely

Petitioners' third and final argument on appeal also lacks merit in light of the record of this proceeding and the Board's stated grounds for rejecting the proposed contention.

Petitioners claim that its proffered expert "seriously challenged" the Board's "implicit finding" that the metals compared in the Palisades Alternate PTS Rule Evaluation "were 'of the appropriate chemical composition.'"¹⁰² In making this statement, Petitioners provide no citation to the record of this proceeding. Moreover, they simply ignore the Board's findings, as discussed above, that Petitioners inappropriately first raised this issue in their reply, and that Mr. Gundersen *conceded* that the sister plant and Palisades RPV metal samples in question are of similar composition.¹⁰³

Petitioners further assert that neither Entergy nor the NRC Staff refuted Mr. Gundersen's observation that there is "extraordinary variability between the neutron flux across the nuclear core" in the Palisades reactor.¹⁰⁴ Even if that claim were true—which it is not—the Board considered and rejected that argument as lacking support in LBP-15-17.¹⁰⁵ The Board recognized that the neutron flux hitting a material will vary across a reactor, but noted that such variation in flux "is captured in the material's fluence measurement, because fluence is the integral of flux over time."¹⁰⁶ The Board further explained that the consistency check required by Section 50.61a(f)(6)(i) "does not rely on information that is unique to a particular RPV, but

¹⁰² Appeal at 23 (quoting *Palisades*, LBP-15-17, slip op. at 41).

¹⁰³ *Palisades*, LBP-15-17, slip op. at 45-46 ("Our review of the Gundersen Declaration [¶ 27] indicates that Mr. Gundersen did not raise the argument that the sister plant material samples are of different chemical composition compared to Palisades' samples. Instead, Mr. Gundersen admits that the sister plant and Palisades samples are similar. Therefore, Petitioners inappropriately raised this argument in their reply.").

¹⁰⁴ Appeal at 23 (quoting Gundersen Declaration ¶ 34).

¹⁰⁵ See *Palisades*, LBP-15-17, slip op. at 41.

¹⁰⁶ *Id.*

instead on *the chemical properties and fluence of the material samples.*”¹⁰⁷ Thus, the Board concluded, it is possible to compare material samples of the same fluence and material type even if they are obtained from different plants (*i.e.*, the Palisades RPV and sister plant RPVs like those at H. B. Robinson, Indian Point, and Diablo Canyon).¹⁰⁸ In fact, Section 50.61a(f)(6)(i) *requires* that a material sample be used in the consistency check if its fluence is known and it is of the appropriate chemical composition.¹⁰⁹

Thus, contrary to Petitioners’ claim, the Board considered Mr. Gundersen’s statements regarding neutron flux variability and concluded that they lacked support. In short, the Board found that Mr. Gundersen’s observations raised no concerns relative to Entergy’s use of Palisades-specific or sister plant surveillance data as part of its embrittlement model consistency check under 10 C.F.R. § 50.61a(f)(6).

¹⁰⁷ *Id.* (emphasis added).

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*; *see also* 10 C.F.R. § 50.61a(f)(6)(i)(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.”).

V. CONCLUSION

For the foregoing reasons, the Commission should reject Petitioners' Appeal of LBP-15-17.

Respectfully submitted,

Signed (electronically) by Raphael P. Kuyler

William B. Glew, Jr., Esq.
Entergy Nuclear Operations, Inc.
440 Hamilton Ave.
White Plains, NY 10601
Phone: (914) 272-3360
Fax: (914) 272-3242
E-mail: wglew@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

Counsel for Entergy Nuclear Operations, Inc.

Dated in Washington, D.C.
this 29th day of June 2015

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE COMMISSION

_____)	
In the Matter of:)	Docket No. 50-255-LA
)	
ENTERGY NUCLEAR OPERATIONS, INC.)	ASLBP No. 15-936-03-LA-BD01
)	
(Palisades Nuclear Plant))	June 29, 2015
)	
_____)	

CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R. § 2.305, I certify that, on this date, copies of “Entergy’s Answer Opposing Petitioners’ Appeal of LBP-15-07” 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

Counsel for Entergy Nuclear Operations, Inc.

DB1/ 83825135