

**NUCLEAR REGULATORY COMMISSION
ISSUANCES**

**OPINIONS AND DECISIONS OF THE
NUCLEAR REGULATORY COMMISSION
WITH SELECTED ORDERS**

July 1, 2020 – December 31, 2020

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PREFACE

This is the ninety-second volume of issuances (1–537) of the Nuclear Regulatory Commission and its Atomic Safety and Licensing Boards, Administrative Law Judges, and Office Directors. It covers the period from July 1, 2020, to December 31, 2020.

Atomic Safety and Licensing Boards are authorized by Section 191 of the Atomic Energy Act of 1954. These Boards, comprised of three members, conduct adjudicatory hearings on applications to construct and operate nuclear power plants and related facilities and issue initial decisions which, subject to internal review and appellate procedures, become the final Commission action with respect to those applications. Boards are drawn from the Atomic Safety and Licensing Board Panel, comprised of lawyers, nuclear physicists and engineers, environmentalists, chemists, and economists. The Atomic Energy Commission (AEC) first established Licensing Boards in 1962 and the Panel in 1967.

Between 1969 and 1990, the AEC authorized Atomic Safety and Licensing Appeal Boards to exercise the authority and perform the review functions which would otherwise have been exercised and performed by the Commission in facility licensing proceedings. In 1972, that Commission created an Appeal Panel, from which were drawn the Appeal Boards assigned to each licensing proceeding. The functions performed by both Appeal Boards and Licensing Boards were transferred from the AEC to the Nuclear Regulatory Commission by the Energy Reorganization Act of 1974. Appeal Boards represented the final level in the administrative adjudicatory process to which parties could appeal. Parties, however, were permitted to seek discretionary Commission review of certain board rulings. The Commission also could decide to review, on its own motion, various decisions or actions of Appeal Boards.

On June 29, 1990, however, the Commission voted to abolish the Atomic Safety and Licensing Appeal Panel, and the Panel ceased to exist as of June 30, 1991. Since then, the Commission itself reviews Licensing Board and other adjudicatory decisions, as a matter of discretion. *See* 56 FR 29403 (1991).

The Commission also may appoint Administrative Law Judges pursuant to the Administrative Procedure Act, who preside over proceedings as directed by the Commission.

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Issuances are referred to as follows: Commission (CLI), Atomic Safety and Licensing Boards (LBP), Administrative Law Judges (ALJ), Directors' Decisions (DD), and Decisions on Petitions for Rulemaking (DPRM).

The summaries and headnotes preceding the opinions reported herein are not to be deemed a part of those opinions or to have any independent legal significance.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Paul S. Ryerson, Chairman
Dr. Sue H. Abreu
Dr. Gary S. Arnold

In the Matter of

Docket No. 50-341-LA
(ASLBP No. 20-966-02-LA-BD01)

DTE ELECTRIC COMPANY
(Fermi Nuclear Power Plant,
Unit 2)

July 7, 2020

This proceeding concerns a license amendment request by DTE Electric Company regarding its Fermi Nuclear Power Plant, Unit 2 spent fuel pool located in Monroe County, Michigan. The Board considered a petition to intervene and request for a hearing from Citizens' Resistance at Fermi 2 (CRAFT). The Board determined that CRAFT did not proffer an admissible contention.

RULES OF PRACTICE: FOOTNOTES

Rarely, if ever, should important decisions be based on arguments made solely in a footnote. As the United States Court of Appeals for the District of Columbia Circuit has ruled, "absent extraordinary circumstances" the Court does "not entertain an argument raised . . . in a footnote." *United States v. Whren*, 111 F.3d 956, 958 (D.C. Cir. 1997) (citations omitted).

RULES OF PRACTICE: STANDING

In a license amendment proceeding, the NRC must grant a hearing upon the request of any person whose interest may be affected by the proceeding.

RULES OF PRACTICE: STANDING (BURDEN)

Although the Commission instructs a licensing board to construe the petition in favor of the petitioner when determining standing, it is nonetheless each petitioner's burden to demonstrate that standing requirements are met.

RULES OF PRACTICE: STANDING

A petitioner may show traditional standing by demonstrating that a person or organization has suffered or might suffer a concrete and particularized injury that is: (1) fairly traceable to the challenged action; (2) likely redressable by a favorable decision; and (3) arguably within the zone of interests protected by the governing statutes.

RULES OF PRACTICE: STANDING (PROXIMITY PLUS PRESUMPTION)

Although the NRC applies traditional standing concepts, in certain proceedings the Commission applies simplified standing requirements for individuals who reside within, or have contacts with, a geographic zone of potential harm. In proceedings that involve construction or operation of a nuclear power plant, the zone is the area within a 50-mile radius of the site. In other proceedings, such as this license amendment proceeding, a proximity plus standard is applied on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source. The smaller the risk of offsite consequences, the closer a petitioner must be for a realistic threat to exist.

RULES OF PRACTICE: STANDING (REPRESENTATIONAL)

An organization may try to establish representational standing based on the standing of one or more individual members if it can: (1) show that the interests it seeks to protect are germane to its own purpose; (2) identify at least one member who qualifies for standing in his or her own right; (3) show that it is authorized by that member to request a hearing on his or her behalf; and (4) show that neither the claim asserted nor the relief requested requires an individual member's participation in the organization's legal action.

RULES OF PRACTICE: INTERVENTION

For its hearing request to be granted, in addition to demonstrating standing, a petitioner must proffer at least one admissible contention.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

An admissible contention must: (1) state the specific legal or factual issue to be raised or controverted; (2) provide a brief explanation for the basis of the contention; (3) demonstrate that the issue raised is within the proceeding's scope; (4) demonstrate that the issue raised is material to the findings the NRC must make to support the action that is involved in the proceeding; (5) concisely state the alleged facts or expert opinions that support the petitioner's position and on which the petitioner intends to rely at the hearing, including references to the specific sources and documents on which the petitioner intends to rely; and (6) show that a genuine dispute exists on a material issue of law or fact by referring to specific portions of the application that the petitioner disputes or, if the application is alleged to be deficient, by identifying such deficiencies and the supporting reasons for this allegation.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

A proposed contention must be rejected if it raises issues beyond the scope of the proceeding as dictated by the Commission's hearing notice. Thus, a proposed contention that challenges a license amendment must confine itself to health, safety or environmental issues fairly raised by the license amendment. Challenges to the current licensing basis of a plant are not within the scope of a license amendment proceeding; they are more properly challenged through the process prescribed by 10 C.F.R. § 2.206.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

No NRC rule or regulation may be challenged in a contention unless the petitioner seeks and obtains a waiver from the Commission in accordance with 10 C.F.R. § 2.335.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

Although the NRC's contention admissibility standards are not intended as a fortress to deny intervention, nonetheless, the contention admissibility standards are strict by design. They result from the Commission's conscious effort to raise the threshold bar for an admissible contention. Failure to satisfy even one of the

six pleading requirements requires the Board to reject the contention. Rather than expend agency time and resources on litigating vague and unsupported claims, the Commission strengthened the contention admissibility standards to what they are today — standards that afford evidentiary hearings only to those who proffer at least some minimal factual and legal foundation in support of their contentions.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

Although a petitioner need not prove its contention at this stage, mere notice pleading of proffered contentions is insufficient. The NRC requires a petitioner to read the pertinent portions of the license application or amendment request, state the applicant or licensee's position and the petitioner's opposing view, and explain why it disagrees with the applicant or licensee.

RULES OF PRACTICE: NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The NRC Staff's no significant hazards consideration determination is a procedural one that can only be made by the NRC Staff or the Commission. Specifically, section 189a(2) of the Atomic Energy Act permits the NRC to make a license amendment immediately effective upon a determination by the Commission that such amendment involves no significant hazards consideration. To support such a determination, the proposed amendment must not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. NRC regulations provide that 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 NRC Staff's determination is final, subject only to the Commission's discretion, on its own initiative, to review the determination.

RULES OF PRACTICE: LICENSE AMENDMENT REQUESTS

The Atomic Energy Act expressly authorizes the NRC to amend operating licenses. NRC regulations establish a process by which licensees may request license amendments. Requests to modify conditions imposed in renewed licenses must be fully justified and approved by the NRC Staff using the same considerations that originally governed the issuance of the renewed license to the extent applicable and appropriate. Indeed, this authority, along with the authority to

grant regulatory exemptions, are important tools that allow the agency to address changed or unusual circumstances, albeit subject to adjudicatory challenge regarding the substance of the proposed revision or exemption.

RULES OF PRACTICE: CONTENTIONS (CHARACTER AND INTEGRITY)

The Commission has emphasized that every agency licensing action does not throw open an opportunity to engage in a free-ranging inquiry into the character of the licensee. Instead, for such an inquiry to be warranted, there must be some direct and obvious relationship between the licensing action and the potential character issues.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

Strictly speaking, there is no requirement in NRC regulations that a petitioner must explicitly address how each proffered contention satisfies each of the six pleading requirements. Knowing, however, that a licensing board must make those six determinations for each proffered contention, a petitioner places the sufficiency of its hearing request at risk by choosing not to explicitly address them.

MEMORANDUM AND ORDER

(Ruling on Petition for Intervention and Request for Hearing)

Before the Board is a petition to intervene and request for a hearing concerning a license amendment request by DTE Electric Company (DTE) regarding its Fermi Nuclear Power Plant, Unit 2 (Fermi 2) spent fuel pool located in Monroe County, Michigan. Petitioner is an organization named Citizens' Resistance at Fermi 2 (CRAFT). Because CRAFT has not proffered an admissible contention, we deny its petition.

I. BACKGROUND

Fermi 2 uses two types of high-density storage racks in its spent fuel pool: one with Boraflex as the neutron absorbing material; the other with Boral as the

neutron absorber.¹ Neutron absorption is an important safety component of spent fuel pools in order to maintain subcriticality.² Subcriticality refers to conditions that do not support self-sustaining fission reactions.³

In 2001, the NRC approved DTE's request for License Amendment No. 141, which allowed, but did not require, replacement of the Boraflex racks with Boral racks for the purpose of increasing the capacity of Fermi 2's spent fuel pool.⁴ Although the first two phases of this rack replacement occurred in 2001 and 2007, the final phase never took place.⁵ After License Amendment No. 141 was approved, the NRC and the industry accumulated operating experience indicating that neutron-absorbing materials such as Boraflex and Boral can degrade, thereby reducing their neutron-absorbing capability.⁶

During the Fermi 2 license renewal process in 2014, DTE committed to completing the rack replacement approved in License Amendment No. 141.⁷ The NRC renewed DTE's license subject to License Condition 2.C.(26)(c), which provides that "[DTE] shall fully implement the Boraflex rack replacement approved in Amendment No. 141 before the [period of extended operation] (i.e., March 20, 2025), so that the Boraflex material in the spent fuel pool will not be required to perform a neutron absorption function"⁸ When making this commitment, however, DTE alerted the NRC that alternative solutions could arise. It stated that "[i]f, based on further analyses and subject to any necessary NRC approvals, DTE identifies an alternative to implementation of the rack replacement approved in Amendment No. 141 that can be completed in a timely manner, this commitment will be revised accordingly."⁹

¹ See Fermi 2 Updated Final Safety Analysis Report § 9.1.2.2.2 (rev. 21 Oct. 2017) (ADAMS Accession No. ML17298B69); Letter from Paul Fessler, DTE, to NRC Document Control Desk, "License Amendment Request to Revise Technical Specifications to Utilize Neutron Absorbing Inserts in Criticality Safety Analysis for Fermi 2 Spent Fuel Storage Racks," encl. 1, at 3 (Sept. 5, 2019) (ADAMS Accession No. ML19248C679) [hereinafter LAR Evaluation].

² Office of Nuclear Reactor Regulation (NRR) & Office of Nuclear Material Safety and Safeguards, NRC Generic Letter 2016-01, Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools (rev. 2 Apr. 2016) at 2 (ADAMS Accession No. ML16097A169) [hereinafter NRC Generic Letter].

³ *Id.*

⁴ See Letter from J. Lamb, NRR, NRC, to W. O'Connor, Jr., DTE, "Fermi 2 — Issuance of Amendment re: Spent Fuel Pool Rerack (TAC No. MA7233)" (Jan. 25, 2001) (ADAMS Accession No. ML010310205); *see also id.*, encl. 2, § 2.0 (Safety Evaluation).

⁵ LAR Evaluation at 4.

⁶ See NRC Generic Letter.

⁷ Letter from V. Kaminskis, DTE, to NRC Document Control Desk, "Fermi 2 License Renewal Application Update for the Boraflex Monitoring Program" at 2 (Sept. 24, 2015) (ADAMS Accession No. ML15268A454) [hereinafter Boraflex Commitment Letter].

⁸ Fermi 2 Renewed Facility Operating License No. NPF-43, at 8 (Dec. 15, 2016) (ADAMS Accession No. ML16270A526) [hereinafter Renewed License]; *see also* Boraflex Commitment Letter.

⁹ Boraflex Commitment Letter at 2.

On September 5, 2019, DTE submitted a license amendment request to the NRC for approval of such an alternative plan.¹⁰ Instead of removing and replacing certain spent fuel racks, DTE proposes to install neutron-absorbing NETCO SNAP-IN® rack inserts in the existing Boraflex racks.¹¹ Although the original Boraflex would remain, after these inserts are installed the Boraflex would no longer be credited as a neutron absorber in DTE's criticality safety analysis.¹²

Unlike the replacement of the Boraflex racks as approved by License Amendment No. 141, DTE's proposed alternative would not change the number of racks or the total capacity of the Fermi 2 spent fuel pool.¹³ The NRC has previously approved the installation of NETCO SNAP-IN® rack inserts to replace the neutron-absorption function of Boraflex at several other nuclear power plants.¹⁴

Specifically, DTE requests a license amendment that would: (1) eliminate License Condition 2.C.(26)(c) based on DTE's proposal to install neutron absorbing inserts; (2) approve a new criticality safety analysis; and (3) approve an associated revision of technical specification requirements.¹⁵ On January 7, 2020, the NRC published a notice in the *Federal Register* informing the public of an opportunity to file hearing requests and intervention petitions on DTE's request within 60 days.¹⁶ Petitioner CRAFT filed a hearing request dated March 9, 2020.¹⁷ On April 3, 2020, the NRC Staff and DTE timely filed answers opposing

¹⁰ See *supra* note 1.

¹¹ LAR Evaluation at 8-9.

¹² *Id.* at 4-5.

¹³ *Id.* at 3.

¹⁴ See LaSalle County Station, Units 1 and 2, Issuance of Amendments Concerning Spent Fuel Neutron Absorbers, encl. 3, at 2 (Jan. 28, 2011) (ADAMS Accession No. ML110250051); Peach Bottom Atomic Power Station, Units 2 and 3, Issuance of Amendments Re: Use of Neutron Absorbing Inserts in Spent Fuel Pool Storage Racks, encl. 3, at 2 (May 21, 2013) (ADAMS Accession No. ML13114A929); Quad Cities Nuclear Power Station, Units 1 and 2, Issuance of Amendments Regarding NETCO Inserts, encl. 3, at 1 (Dec. 31, 2014) (ADAMS Accession No. ML14346A306); River Bend Station, Unit 1, Issuance of Amendment No. 201 Re: Change to the Neutron Absorbing Material Credited in Spent Fuel Pool for Criticality Control, encl. 3, at 10 (Dec. 31, 2019) (ADAMS Accession No. ML19357A009).

¹⁵ Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving Proposed No Significant Hazards Considerations and Containing Sensitive Unclassified Non-Safeguards Information and Safeguards Information and Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information, 85 Fed. Reg. 728, 731 (Jan. 7, 2020).

¹⁶ *Id.* at 729-30.

¹⁷ Petition of [CRAFT] for Leave to Intervene and for a Hearing on DTE's License Amendment Request to Invalidate a License Extension Condition by a License Amendment Request (Mar. 9, 2020) [hereinafter Petition].

CRAFT's hearing request,¹⁸ and CRAFT timely replied.¹⁹ The Board heard oral argument, by telephone, on June 10, 2020.²⁰

II. NRC STAFF PROCEDURAL OBJECTION

Before we consider any aspect of CRAFT's hearing petition, we first address the NRC Staff's claim that we should reject CRAFT's hearing request because of an alleged procedural defect. The NRC Staff (but not DTE) argues that the Board should deny the hearing request because, without demonstrating good cause, "CRAFT did not serve the hearing request on the Staff and DTE by the deadline."²¹

The Staff does not specify, however, when it contends it should have been served, when it was served, or whether it was prejudiced in any way. The NRC Staff's pleading provides no facts beyond the bare assertion that "CRAFT did not serve the hearing request on the Staff and DTE by the deadline."²²

We decline to dismiss CRAFT's hearing request on the basis of this conclusory, factually unsupported allegation. Moreover, the NRC Staff engages in the disfavored practice of urging dismissal on this ground solely in a footnote.²³ Rarely, if ever, should important decisions be based on such arguments. As the United States Court of Appeals for the District of Columbia Circuit has ruled, "absent extraordinary circumstances" the Court does "not entertain an argument raised . . . in a footnote."²⁴

III. STANDING

Both DTE and the NRC Staff contend that CRAFT has not demonstrated standing.²⁵

¹⁸ NRC Staff's Answer Opposing CRAFT's Hearing Request (Apr. 3, 2020) [hereinafter NRC Staff Answer]; Applicant's Answer Opposing Petition for Leave to Intervene and Hearing Request Filed by [CRAFT] (Apr. 3, 2020) [hereinafter DTE Answer].

¹⁹ [CRAFT] Combined Reply to NRC Staff Answer Opposing CRAFT's Leave to Intervene and Request for a Hearing and Applicant's Answer Opposing Petition for Leave to Intervene and Hearing Request Filed by [CRAFT] (Apr. 10, 2020).

²⁰ Tr. at 1-65.

²¹ NRC Staff Answer at 2 n.4.

²² *Id.*

²³ See, e.g., D.C. Circuit Handbook of Practice and Internal Procedures at 44 (Dec. 1, 2019) ("The Court prefers that substantive arguments not be made in footnotes.").

²⁴ *United States v. Whren*, 111 F.3d 956, 958 (D.C. Cir. 1997) (citations omitted).

²⁵ See DTE Answer at 13-16; NRC Staff Answer at 7-17.

A. Legal Requirements for Standing

In a license amendment proceeding such as this, the NRC must grant a hearing “upon the request of any person whose interest may be affected by the proceeding.”²⁶ However, to determine whether a petitioner has a sufficient interest, the Commission applies contemporaneous judicial concepts of standing.²⁷ Although the Commission instructs us to construe the petition in favor of the petitioner when we determine standing,²⁸ it is nonetheless each petitioner’s burden to demonstrate that standing requirements are met.²⁹ As relevant here, a petitioner may satisfy this burden in one of three ways.

First, a petitioner may show traditional standing. This requires a showing that a person or organization has suffered or might suffer a concrete and particularized injury that is: (1) fairly traceable to the challenged action; (2) likely redressable by a favorable decision; and (3) arguably within the zone of interests protected by the governing statutes³⁰ — here primarily the Atomic Energy Act (AEA).³¹

Second, a petitioner may take advantage of proximity presumptions the Commission has created to simplify standing requirements for individuals who reside within, or have frequent contacts with, a geographic zone of potential harm. In proceedings that involve construction or operation of a nuclear power plant, the zone is the area within a 50-mile radius of the site.³² In other proceedings, such as this license amendment proceeding, a “proximity plus” standard is applied on a “case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source.”³³ The smaller the risk of offsite consequences, the closer a petitioner must be for a realistic threat to exist. Licensing boards have stated in other license amendment proceedings involving

²⁶ Atomic Energy Act § 189a(1)(A), 42 U.S.C. § 2239(a)(1)(A).

²⁷ *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 394 (2015).

²⁸ *Id.*

²⁹ See *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-00-5, 51 NRC 90, 98 (2000). Section 2.309(d) of 10 C.F.R. specifies information that a petitioner should include in its petition to establish standing but does not set the standard the Board must apply when deciding whether that information is sufficient.

³⁰ *Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915 (2009).

³¹ AEA §§ 1-1201, 42 U.S.C. §§ 2011-2297.

³² *PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 138-39 (2010).

³³ *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 116-17 (1995); see *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 n.22 (1994) (“[A] presumption based on geographic proximity is not confined solely to Part 50 reactor licenses, but is also applicable to materials cases where the potential for offsite consequences is obvious.”).

spent fuel pools: “[A]lthough the 50-mile presumption does not apply in spent fuel pool cases, persons living ‘little more than a stone’s throw from the facility’ . . . meet the proximity test.”³⁴

Third, like petitioners here, an organization may try to establish representational standing based on the standing of one or more individual members. To establish representational standing, an organization must: (1) show that the interests it seeks to protect are germane to its own purpose; (2) identify at least one member who qualifies for standing in his or her own right; (3) show that it is authorized by that member to request a hearing on his or her behalf; and (4) show that neither the claim asserted nor the relief requested requires an individual member’s participation in the organization’s legal action.³⁵

B. CRAFT Standing Analysis

CRAFT asserts it is a “grassroots organization” based in Redford, Michigan that publishes a monthly newspaper concerning DTE’s Fermi 2 reactor.³⁶ It submitted sworn declarations from several members, verifying that they live within a 50-mile radius (two within five miles) of Fermi 2.³⁷ In addition to authorizing CRAFT to represent their interests in this proceeding, these members express concern that DTE’s requested license amendment risks harm to the health and well-being of members living within 50 miles of the site.³⁸ CRAFT bases its standing claim on its understanding that “petitioners who live within 50 miles of a proposed nuclear power plant are presumed to have standing.”³⁹

CRAFT is incorrect. As explained above, a 50-mile proximity presumption of standing applies only to challenges to reactor construction permits, operating licenses, and license amendments that present an obvious potential for offsite consequences at that distance. In other situations, the appropriate distance is determined on a case-by-case basis, “taking into account the nature of the proposed action and the significance of the radioactive source.”⁴⁰

³⁴ *Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Unit 3), LBP-00-2, 51 NRC 25, 28 (2000) (quoting *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979)). The *Millstone* board also pointed out that petitioners living up to 17 miles away had previously been granted standing in spent fuel pool cases. *See, e.g., Carolina Power & Light Co.* (Shearon Harris Nuclear Plant), LBP-99-25, 50 NRC 25 (1999); *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 1), LBP-88-10A, 27 NRC 452, 455, *aff’d*, ALAB-893, 27 NRC 627 (1988).

³⁵ *Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 409 (2007).

³⁶ Petition at 5.

³⁷ *See id.* at 5-7.

³⁸ *See, e.g., id.* at 6.

³⁹ *Id.*

⁴⁰ *Ga. Tech*, CLI-95-12, 42 NRC at 116-17.

Thus, we must decide whether DTE's requested license amendment could plausibly lead to offsite radiologic consequences 4.75 miles away (the closest documented residence of a CRAFT member).⁴¹ In some cases, such as *Peach Bottom*, the Commission has stated that "[t]he burden falls on the petitioner to demonstrate" the plausibility of such offsite consequences.⁴² CRAFT has not expressly done this.

On the other hand, the Commission directs that we generally construe standing in favor of the petitioner.⁴³ The requirements for standing are not "strict by design," in contrast to the NRC's contention admissibility requirements.⁴⁴ This is especially so when we have a *pro se* petitioner, such as CRAFT. Although *pro se* petitioners may not ignore our rules, the Commission instructs us to allow them some degree of leeway.⁴⁵

Although CRAFT incorrectly invokes a 50-mile proximity presumption, in actuality CRAFT has demonstrated, through sworn declarations, that at least two of its concerned members live less than five miles from Fermi 2.⁴⁶ Must a *pro se* petitioner demonstrate to the NRC that avoiding criticality in a spent fuel pool is reasonably of concern to a person who lives less than five miles away?⁴⁷

Unlike in *Peach Bottom* (which involved the NRC's approval of the transfer of a 50% non-operating ownership interest in a nuclear facility), the Commission's recent affirmance of the Licensing Board's standing ruling in *Holtec* suggests such a demonstration may not be necessary.⁴⁸ In *Holtec*, which concerned licensing an interim spent fuel storage facility, the board had found standing on the basis of Sierra Club's members who lived several miles away and ex-

⁴¹ See Petition, encl., Decl. of Hedwig Kaufman (Mar. 7, 2020); see also *id.*, encl., Decl. of Martin Kaufman (Mar. 7, 2020).

⁴² *Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 581 (2005).

⁴³ *Turkey Point*, CLI-15-25, 82 NRC at 394.

⁴⁴ *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001).

⁴⁵ *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), LBP-11-13, 73 NRC 534, 543-45 (2011), *rev'd in part on other grounds*, CLI-12-8, 75 NRC 393 (2012).

⁴⁶ See Petition, encl., Decl. of Hedwig Kaufman (Mar. 7, 2020); see also *id.*, encl., Decl. of Martin Kaufman (Mar. 7, 2020).

⁴⁷ Contrary to DTE's claims, see DTE Answer at 15-16, this is not a situation in which standing is in doubt because the requested license amendment would merely add a safety feature. Here, the amendment proposes to replace one safety feature with a different one.

⁴⁸ See *Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 178 (2020).

pressly rejected the applicant's claim that Sierra Club "must first demonstrate with specificity just how radiation might reach them."⁴⁹

In these circumstances, and because one side of the issue has not been briefed by experienced legal counsel, we are reluctant to rule unnecessarily on whether CRAFT has established standing. Because, for multiple reasons, CRAFT plainly has failed to submit an admissible contention, we deny its hearing request on that ground alone and make no determination of its standing.

IV. CONTENTION ADMISSIBILITY STANDARDS

For its hearing request to be granted, in addition to demonstrating standing, a petitioner must proffer at least one admissible contention.⁵⁰ Both DTE and the NRC Staff contend that CRAFT has not proffered an admissible contention.⁵¹ We agree.

An admissible contention must: (1) state the specific legal or factual issue to be raised or controverted; (2) provide a brief explanation for the basis of the contention; (3) demonstrate that the issue raised in the contention is within the scope of the proceeding; (4) 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; (5) concisely state the alleged facts or expert opinions that support the petitioner's position and on which the petitioner intends to rely at an evidentiary hearing, including references to the specific sources and documents on which the petitioner intends to rely; and (6) show that a genuine dispute exists on a material issue of law or fact by referring to specific portions of the application that the petitioner disputes or, if the application is alleged to be deficient, by identifying such deficiencies and the supporting reasons for this allegation.⁵²

A proposed contention must be rejected if it raises issues beyond the scope of the proceeding as dictated by the Commission's hearing notice.⁵³ Thus, a proposed contention that challenges a license amendment must confine itself to "health, safety or environmental issues fairly raised by [the license amendment]."⁵⁴ Challenges to the current licensing basis of a plant are not within the

⁴⁹ *Holtec International* (HI-STORE Consolidated Interim Storage Facility), LBP-19-4, 89 NRC 353, 367 (2019).

⁵⁰ 10 C.F.R. § 2.309(a).

⁵¹ See DTE Answer at 16-32; NRC Staff Answer at 17-35.

⁵² 10 C.F.R. § 2.309(f)(1)(i)-(vi).

⁵³ See 10 C.F.R. § 2.309(f)(1)(iii); *Public Service Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976).

⁵⁴ *Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 624 (1981).

scope of a license amendment proceeding; they are more properly challenged through the process prescribed by 10 C.F.R. § 2.206.⁵⁵

A further requirement applies to several contentions addressed *infra*. No NRC rule or regulation may be challenged in a contention unless the petitioner seeks and obtains a waiver from the Commission in accordance with 10 C.F.R. § 2.335. CRAFT has not sought such a waiver.

Although CRAFT correctly points out that the NRC's contention admissibility standards are not intended as a "fortress to deny intervention,"⁵⁶ nonetheless, the contention admissibility standards are "strict by design."⁵⁷ They result from the Commission's conscious effort to "raise the threshold bar for an admissible contention."⁵⁸ Failure to satisfy even one of the six pleading requirements requires the Board to reject a contention.⁵⁹ Rather than expend agency time and resources on litigating vague and unsupported claims, the Commission strengthened the contention admissibility standards to what they are today — standards that afford evidentiary hearings only to those who "proffer at least some minimal factual and legal foundation in support of their contentions."⁶⁰

Therefore, although a petitioner need not prove its contention at this stage, mere notice pleading of proffered contentions is insufficient.⁶¹ The NRC requires a petitioner to read the pertinent portions of the license application or amendment request, state the applicant or licensee's position and the petitioner's opposing view, and explain why it disagrees with the applicant or licensee.⁶²

Finally, several of CRAFT's proffered contentions address the NRC Staff's "no significant hazards consideration determination." This determination is "a procedural one" that "can only be made by the NRC Staff or the Commission."⁶³

Specifically, section 189a(2) of the AEA permits the NRC to make a license amendment immediately effective "upon a determination by the Commission

⁵⁵ See, e.g., *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-19-7, 90 NRC 1, 14 (2019) ("If [the petitioner] seeks to challenge the ongoing operation of [the facility], it may file a petition seeking enforcement action under 10 C.F.R. § 2.206.").

⁵⁶ Petition at 20 (quoting *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 335 (1999)).

⁵⁷ *Millstone*, CLI-01-24, 54 NRC at 358.

⁵⁸ *Oconee*, CLI-99-11, 49 NRC at 334.

⁵⁹ See *Entergy Nuclear Operations, Inc.* (Indian Point, Unit 2), CLI-16-5, 83 NRC 131, 136 (2016).

⁶⁰ *Oconee*, CLI-99-11, 49 NRC at 334.

⁶¹ *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

⁶² Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989).

⁶³ *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), LBP-87-17, 25 NRC 838, 844 (1987).

that such amendment involves no significant hazards consideration.”⁶⁴ To support such a determination, the proposed amendment must not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.⁶⁵

NRC regulations provide that “[n]o petition or other request for review of or hearing on the staff’s significant hazards consideration determination will be entertained by the Commission.”⁶⁶ The NRC Staff’s determination is “final, subject only to the Commission’s discretion, on its own initiative, to review the determination.”⁶⁷

Thus, the NRC Staff’s no significant hazards consideration determination is not subject to challenge in this adjudicatory proceeding.⁶⁸ Indeed, when referring this matter to the Atomic Safety and Licensing Board Panel, the Office of the Secretary expressly clarified that “this referral memorandum is not to be construed as reflecting a determination that CRAFT is entitled to a review of, or hearing on, the staff’s no significant hazards consideration determination.”⁶⁹

⁶⁴ AEA § 189a(2)(A), 42 U.S.C. § 2239(a)(2)(A).

⁶⁵ 10 C.F.R. § 50.92(c)(1)-(3).

⁶⁶ *Id.* § 50.58(b)(6).

⁶⁷ *Id.*

⁶⁸ See, e.g., *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-01-7, 53 NRC 113, 118 (2001) (holding that intervenor challenges to no significant hazards consideration (NSHC) determinations will be summarily rejected: “Our regulations provide that ‘[n]o petition or other request for review of or hearing on the staff’s significant hazards consideration determination will be entertained by the Commission.’ . . . The regulation is quite clear in this regard.”) (quoting 10 C.F.R. § 50.58(b)(6)); *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), LBP-90-6, 31 NRC 85, 91 (1990) (“The issue of whether the proposed amendment does or does not involve a significant hazards consideration is not litigable in any hearing[.]”) (citing *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-86-12, 24 NRC 1, 6 n.3 (1986), *rev’d and remanded on other grounds sub nom. San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986)); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-89-15, 29 NRC 493, 495-96 (1989).

⁶⁹ Memorandum from Annette L. Vietti-Cook, Office of the Secretary, to E. Roy Hawkens, Chief Administrative Judge, Atomic Safety and Licensing Board Panel (March 18, 2020).

V. CONTENTION ADMISSIBILITY ANALYSIS

A. CRAFT Contention 1

CRAFT Contention 1 states:

CRAFT Contends (Contention 1) that there is potential for a significant increase in the probability or consequences of an accident previously evaluated. License Condition No. 3 for License Renewal calls for the removal of Boraflex and replacement.⁷⁰

If CRAFT Contention 1 is intended to challenge the NRC Staff's determination that DTE's proposed license amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, it is barred by 10 C.F.R. § 50.58(b), as explained *supra*. (Insofar as Contention 1 is subsequently described as also charging that, contrary to the NRC Staff's determination, DTE's requested amendment creates the possibility of a new or different kind of accident,⁷¹ that claim is barred for the same reason.)⁷²

If the second sentence in Contention 1 is intended to assert an entirely different claim — that is, by DTE's not physically removing the Boraflex storage racks from the spent fuel pool, Fermi 2 will be out of compliance with what CRAFT mistakenly calls "License Condition No. 3"⁷³ — it is also not admissible. If its request for a license amendment is granted, of course DTE need no longer comply with the original license condition. That is why it is asking for a license amendment.

The AEA expressly authorizes the NRC to amend operating licenses.⁷⁴ NRC regulations establish a process by which licensees may request license amendments.⁷⁵ If CRAFT claims that the NRC has no discretion to consider mod-

⁷⁰ Petition at 9-10.

⁷¹ *Id.* at 13.

⁷² This proceeding does not raise the issue of when, without violating 10 C.F.R. § 50.58(b)(6), a petitioner might be able to challenge the facts underlying the NRC Staff's determination, separate from a challenge to the Staff's determination itself. As shown *infra*, CRAFT has not proffered any admissible contention that could be interpreted to present such a claim.

⁷³ In referring to "License Condition No. 3," CRAFT appears to mean License Condition 2.C.(26)(c), which is the license renewal condition that calls for the Boraflex rack replacement. *See* Renewed License at 8.

⁷⁴ *See, e.g.*, AEA § 189a(2)(A), 42 U.S.C. § 2239(a)(2)(A) ("The Commission may issue and make immediately effective any amendment to an operating license . . .").

⁷⁵ Requests to modify conditions imposed in renewed licenses must be fully justified and approved by the NRC Staff using the same considerations that originally governed the issuance of the renewed license "to the extent applicable and appropriate." *See* 10 C.F.R. § 50.92(a). Indeed, this authority,

(Continued)

ification of a condition imposed upon license renewal,⁷⁶ it is simply wrong. Provisions of the AEA may not be challenged in an NRC adjudicatory proceeding.⁷⁷ Nor, absent a waiver (which CRAFT has not requested), may a petitioner challenge the NRC's regulations.⁷⁸

Therefore, contrary to 10 C.F.R. § 2.309(f)(1)(iii)-(vi), CRAFT Contention 1 is beyond the scope of this proceeding, is not material to a decision the NRC must make, is not supported by an adequate factual basis, and raises no genuine dispute with DTE's license application. Because CRAFT did not seek a waiver to challenge a regulation, it violates 10 C.F.R. § 2.335(a) as well.

CRAFT Contention 1 is not admitted.

B. CRAFT Contention 2

CRAFT Contention 2 states:

By not physically removing the [Boraflex] CRAFT Contends (Contention 2) that corrosion leads to degradation and can result in unanticipated consequences and unaccounted for debris in the spent fuel pool. Exacerbating corrosion through prolonged exposure and reliance on faulty Boraflex must be examined and considered as potentially problematic when loading into the Dry Cask Storage. That evaluation has not been provided.⁷⁹

In support, CRAFT claims "[t]here have been problems at other U.S. nuclear power plants revolving around Boraflex."⁸⁰ But that is not in dispute. That is why, initially, the NRC required replacement of Boraflex storage racks as a condition of license renewal and, now, DTE proposes instead to provide adequate neutron absorption in the spent fuel pool by installing NETCO SNAP-IN®

along with the authority to grant regulatory exemptions, *see id.* § 50.12, are important tools that allow the agency to address changed or unusual circumstances, albeit subject to adjudicatory challenge regarding the substance of the proposed revision or exemption. *See Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-16-12, 83 NRC 542, 549-54 (2016) (finding within the scope of the proceeding an emergency planning exemption request that would be implemented by a requested license amendment to reflect reactor facility's permanently shutdown and defueled status).

⁷⁶ As noted *supra*, although not required to do so, at the time its license was renewed DTE expressly alerted the NRC that, "based on further analysis," it might later propose an alternative to fuel rod replacement "subject to any necessary NRC approvals." Boraflex Commitment Letter at 2.

⁷⁷ *U.S. Department of Energy* (High-Level Waste Repository), CLI-09-14, 69 NRC 580, 605 (2009) ("A petitioner may not challenge applicable statutory requirements as part of an administrative adjudication.") (citations omitted).

⁷⁸ 10 C.F.R. § 2.335(a).

⁷⁹ Petition at 10.

⁸⁰ *Id.*

neutron absorbing inserts. Any remaining neutron absorption resulting from the original Boraflex racks would merely be in addition to that supplied by the new inserts.

CRAFT provides no support for its claim that the continued presence of the original Boraflex storage racks might lead to corrosion and “unaccounted for debris in the spent fuel pool.”⁸¹ Nor does CRAFT explain what hazards such debris might cause. Contrary to 10 C.F.R. § 2.309(f)(1)(v) and (vi), CRAFT Contention 2 fails to provide adequate factual support or raise a genuine dispute with DTE’s license application.

CRAFT Contention 2 is not admitted.

C. CRAFT Contention 3

CRAFT Contention 3 states:

CRAFT Contends (Contention 3) that the credit for Boraflex as a neutron absorbing material as required by the License Renewal License Condition, the effective neutron multiplication factor, k-effective, is less than or equal to 0.95, if the spent fuel pool (SFP) is fully flooded with unborated water does not leave conservative margin to stay subcritical. There is no conservative buffer, DTE proposes to play on the margin to stay subcritical with less than or equal to 0.95 being subcritical and measurement of 1.00 being supercritical. CRAFT Contends that this is not Conservative.⁸²

Insofar as CRAFT challenges DTE’s taking “credit for Boraflex as a neutron absorbing material,” CRAFT is, again, simply wrong. DTE’s requested license amendment proposes installing inserts that would provide adequate neutron absorption by themselves, and DTE would take no credit at all for any remaining neutron absorption capacity in the existing Boraflex storage racks.⁸³ If CRAFT is challenging the described method for ensuring subcriticality as insufficiently conservative, it challenges (without seeking a waiver) the method prescribed by 10 C.F.R. § 50.68(b).

Therefore, contrary to 10 C.F.R. § 2.309(f)(1)(v) and (vi), CRAFT Contention 3 fails to set forth an adequate factual basis or raise a genuine dispute with DTE’s license amendment application. Because CRAFT did not seek a waiver to challenge a regulation, it violates 10 C.F.R. § 2.335(a) as well.

Moreover, if Contention 3 is intended to challenge the NRC Staff’s determi-

⁸¹ *Id.*

⁸² *Id.* at 11.

⁸³ *See* LAR Evaluation at 4-5.

nation that DTE's proposed license amendment does not involve a significant reduction in a margin of safety,⁸⁴ it is barred by 10 C.F.R. § 50.58(b)(6).

CRAFT Contention 3 is not admitted.

D. CRAFT Contention 4

CRAFT Contention 4 states:

CRAFT Contends (Contention 4) that the more prudent course of action to ensure subcriticality in the spent fuel pool is to remove spent fuel from the pool and reduce the density. That highly irradiated spent fuel should be placed into Dry Cask Storage, placed on ISFSI pad and bunkered with Hardened On-Site Storage (HOSS).⁸⁵

CRAFT's claim that "the more prudent course of action" would be to remove spent fuel from the pool and place it in dry cask storage is unrelated to the question at hand: that is, whether the NRC should permit DTE to install neutron absorbing inserts in the spent fuel pool, rather than replace the existing Boraflex storage racks. DTE's license amendment request does not imbue this Board with plenary jurisdiction to consider whether "[w]ise owners and responsible regulators" would prefer dry cask storage, or to address CRAFT's allegations that DTE's poor quality assurance "spans decades."⁸⁶

Contrary to 10 C.F.R. § 2.309(f)(1)(iii)-(vi), CRAFT Contention 4 is beyond the scope of this proceeding, is not material to a decision the NRC must make, is not supported by an adequate factual basis, and raises no genuine dispute with DTE's license application.

CRAFT Contention 4 is not admitted.

E. CRAFT Contention 5

CRAFT Contention 5 states:

Again, CRAFT Contends (Again Contention 4, and Contention 5) that by not physically removing the degraded Boraflex from the spent fuel itself Fermi 2 will be out of compliance with License Condition No. 3. Cumulative longitudinal degradation to the spent fuel has not been evaluated for corrosion and degradation which could lead to failure in the spent fuel pool and potential for failure when transferred to Dry Cask Storage has not been evaluated. The Boraflex racks can

⁸⁴ Petition at 14.

⁸⁵ *Id.* at 11.

⁸⁶ *Id.* at 12.

become damaged and adhere to the fuel assemblies resulting in loading complications for the lifting of 125 tons, and this has not been evaluated. CRAFT contends that there are historically concerns about the rating of the spent fuel Crane.⁸⁷

To the extent CRAFT Contention 5 appears to repeat in part earlier contentions (including Contentions 1 and 2, as well as Contention 4), it is inadmissible for the same reasons. To the degree it raises an additional concern about the impact of damaged Boraflex racks on the safe transfer of spent fuel out of the spent fuel pool, it provides no support for that assertion. And insofar as CRAFT Contention 5 claims that “there are historically concerns about the rating of the spent fuel Crane,”⁸⁸ CRAFT fails to demonstrate how this is related in any way to DTE’s requested license amendment.

Contrary to 10 C.F.R. § 2.309(f)(1)(iii)-(vi), CRAFT Contention 5 is beyond the scope of this proceeding, is not material to a decision the NRC must make, is not supported by an adequate factual basis, and raises no genuine dispute with DTE’s license application.

CRAFT Contention 5 is not admitted.

F. CRAFT Contention 6

CRAFT Contention 6 states:

CRAFT contends (Contention 6) that there is need for Fermi 2 specific analysis on the spent fuel pool at Fermi 2 as currently loaded, and that analysis needs to be completed prior to consideration of License Amendment put forth.⁸⁹

The sole support for CRAFT Contention 6 is a citation for the proposition that “[t]he Fukushima accident could have been a hundred times worse had there been a loss of the water covering the spent fuel in pools associated with each reactor.”⁹⁰ CRAFT fails to demonstrate how Contention 6 is related in any way to DTE’s requested license amendment.

Contrary to 10 C.F.R. § 2.309(f)(1)(iii)-(vi), CRAFT Contention 6 is beyond the scope of this proceeding, is not material to a decision the NRC must make,

⁸⁷ *Id.* at 14-15.

⁸⁸ *Id.* at 15.

⁸⁹ *Id.* at 16.

⁹⁰ *Id.* (quoting B. Rose Kelly & Frank Von Hippel, “U.S. Nuclear Regulators Greatly Underestimate Potential for Nuclear Disaster,” Woodrow Wilson School (May 25, 2017), <http://www.princeton.edu/news-and-events/news/item/us-nuclear-regulators-greatly-underestimate-potential-nuclear-disaster>).

is not supported by an adequate factual basis, and raises no genuine dispute with DTE's license application.

CRAFT Contention 6 is not admitted.

G. CRAFT Contention 7

CRAFT Contention 7 states:

In addition CRAFT Contends (Contention 7) that the proposed use of Global Nuclear Fuel - 3, an experimental, higher enriched and longer burn-up fuel has not undergone adequate evaluation as it pertains to being placed into spent fuel pool and subsequent impact on criticality coefficient of the effective neutron multiplication factor, k-effective, is less than or equal to 0.95, if the spent fuel pool (SFP) is fully flooded with unborated water does not leave conservative margin to stay subcritical. In conclusion a spent fuel fire can happen here. Different triggers but same result. Please begin accelerated removal of highly irradiated spent fuel from the spent fuel pool at Fermi 2.⁹¹

CRAFT fails to demonstrate how the potential use of a newer form of NRC-approved fuel is related in any way to DTE's requested license amendment. Therefore, contrary to 10 C.F.R. § 2.309(f)(1)(iii)-(vi), this aspect of CRAFT Contention 7 is beyond the scope of this proceeding, is not material to a decision the NRC must make, is not supported by an adequate factual basis, and raises no genuine dispute with DTE's license application.

CRAFT Contention 7's claim that CRAFT "does not agree with the NRC staff analysis that the three standards of 10 C.F.R. § 50.92(c) are satisfied" and "does not accept NRC staff determination [of no] significant hazards consideration"⁹² is clearly barred by 10 C.F.R. § 50.58(b)(6), as explained *supra*.

Insofar as CRAFT Contention 7 criticizes the described method for ensuring subcriticality, CRAFT again challenges the method prescribed by 10 C.F.R. § 50.68 (without seeking a waiver), and therefore violates 10 C.F.R. § 2.335(a).

CRAFT Contention 7 is not admitted.

H. CRAFT Contention 8

CRAFT Contention 8 states:

Detroit Edison's request for regulatory relief to nullify their re-licensing agreements concerning their spent fuel pool safety should be rejected as part of an

⁹¹ *Id.* at 16-17.

⁹² *Id.* at 17.

ongoing pattern of irresponsible and dangerous decisions to lower costs at the risk of catastrophic impacts to the public and the environment.⁹³

In support, CRAFT Contention 8 sets forth a four-page description of alleged misdeeds by DTE, spanning a period of over 50 years.⁹⁴ CRAFT asserts that, not only should DTE's license amendment request be denied, but operation of DTE's facility "should be turned over to a publicly responsive body to assess the environmental and economic viability of the future operation of the plant as compared to the adoption of clean, renewable energy generation."⁹⁵

CRAFT fails to demonstrate how these generalized complaints about DTE's operations relate to the specific license amendment at issue in this proceeding, or how this proceeding could possibly result in the transfer of control of DTE's facility.⁹⁶ Contrary to 10 C.F.R. § 2.309(f)(1)(iii)-(vi), CRAFT Contention 8 is beyond the scope of this proceeding, is not material to a decision the NRC must make, is not supported by an adequate factual basis, and raises no genuine dispute with DTE's license application.

CRAFT Contention 8 is not admitted.

The Board makes a final observation. As explained *supra*, to rule a contention is admissible, a licensing board must determine that, at a minimum, the contention satisfies each of the six requirements of 10 C.F.R. § 2.309(f)(1)(i)-(vi). Strictly speaking, there is no requirement in our regulations that a petitioner must explicitly address how each proffered contention satisfies each of those six requirements.⁹⁷ Knowing, however, that a licensing board must make those six determinations for each proffered contention, a petitioner places the sufficiency of its hearing request at risk by choosing not to explicitly address them.

⁹³ *Id.*

⁹⁴ *Id.* at 17-20.

⁹⁵ *Id.* at 20.

⁹⁶ To the degree that CRAFT seeks to make the "character and integrity" of DTE the basis for this contention, the Commission has emphasized that every agency licensing action does not "throw[] open an opportunity to engage in a free-ranging inquiry into the 'character' of the licensee." *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), CLI-93-16, 38 NRC 25, 32 (1993). Instead, for such an inquiry to be warranted, there must be some "direct and obvious relationship" between the licensing action and the potential character issues. *Exelon Generation Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-19-6, 89 NRC 465, 477 & n.62 (2019) (quoting *Millstone*, CLI-01-24, 54 NRC at 365-66); *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 189 (1999) (quoting *Vogtle*, CLI-93-16, 38 NRC at 32). Nothing referenced by CRAFT in its contention provides a reasonable basis to suggest the character and integrity of DTE is relevant to the technical issue of whether to approve DTE's alternative plan regarding Boraflex replacement.

⁹⁷ *But see U.S. Department of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 453-56 (2008) (requiring by order such a showing by all petitioners in the Yucca Mountain repository proceeding).

Petitioners appear to make that choice surprisingly often. Here, for example, CRAFT makes passing reference to two of the six requirements,⁹⁸ but never mentions four of them and fails to demonstrate how each of its eight contentions satisfies each of the six requirements.

At oral argument, CRAFT's representative candidly acknowledged that "[w]e're not saying that we have proof" of all CRAFT's claims, but that CRAFT has "concerns enough" that CRAFT feels its claims "should be addressed more."⁹⁹ To merit an evidentiary hearing under the NRC's rules, however, merely expressing "concerns" is not sufficient. Petitioners in future proceedings would be well advised to address the specific requirements that licensing boards must apply under 10 C.F.R. § 2.309(f)(1).

V. ORDER

For the foregoing reasons:

- A. CRAFT's petition is *denied*. CRAFT's contentions are *not admitted*.
- B. This proceeding is *terminated*.

Any appeal of this decision to the Commission shall be filed in conformity with 10 C.F.R. § 2.311.

It is so ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Paul S. Ryerson, Chairman
ADMINISTRATIVE JUDGE

Dr. Sue H. Abreu
ADMINISTRATIVE JUDGE

Dr. Gary S. Arnold
ADMINISTRATIVE JUDGE

Rockville, Maryland
July 7, 2020

⁹⁸ Petition at 7, 21.

⁹⁹ Tr. at 52-53.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

G. Paul Bollwerk, III, Chairman
Dr. Sue H. Abreu
Dr. Gary S. Arnold

In the Matter of

Docket No. 52-025-LA-3
(ASLBP No. 20-967-03-LA-BD01)

**SOUTHERN NUCLEAR OPERATING
COMPANY, INC.**
**(Vogtle Electric Generating Plant,
Unit 3)**

August 10, 2020

In this proceeding concerning a combined license (COL) amendment request by Southern Nuclear Operating Company to modify the minimum seismic gap requirements between a portion of the opposite-facing walls of the nuclear island-based auxiliary building and the auxiliary building at its Vogtle Electric Generating Plant, Unit 3 building to accommodate as-built localized nonconformances in the auxiliary building wall, finding that hearing petitioners Blue Ridge Environmental Defense League and its local chapter Concerned Citizens of Shell Bluff (collectively BREDL) had established their standing but had failed to proffer an admissible contention, the Licensing Board denies their hearing request and terminates the proceeding before the Board.

**DESIGN CERTIFICATION: DESIGN CERTIFICATION
RULEMAKING; DESIGN CERTIFICATION DOCUMENT**

A standard design, such as the Westinghouse Electric Company Advanced Passive 1000 (AP1000), is approved by the design certification rulemaking pro-

cess, with the resulting design certification rule added to 10 C.F.R. Part 52 as an appendix. *See* 10 C.F.R. § 52.54(a); *id.* Part 52, app. D (design certification for AP1000 design). Each Part 52 certified design appendix also incorporates by reference a generic design certification document (DCD), which is submitted by the certified design applicant and contains information that is subject to NRC review and approval as part of the rulemaking process. *See id.* app. D, § II.A; NRC, Standard Review Plan, NUREG-800 § 14.3, Inspections, Tests, Analyses, and Acceptance Criteria, app. A at 14.3-9 (Mar. 2007) (Information on Prior Design Certification Reviews) (ADAMS Accession No. ML070660618) [hereinafter SRP]. In addition, a COL applicant/licensee that references a certified design must provide a plant-specific final safety analysis report, which consists of the information in the generic DCD for that certified design, as modified and supplemented by any plant-specific departures or exemptions. *See* 10 C.F.R. § 52.47(a); *see also id.* Part 52, app. D, § I.C (definition of plant-specific DCD); SRP at 14.3-9.

DESIGN CERTIFICATION: DESIGN INFORMATION CATEGORIES

The design certifications issued to-date by the agency, including the AP1000, have design information allocated to one of three categories: Tier 1, Tier 2, and Tier 2*. *See* SRP at 14.3-9 to -11; *see also* 10 C.F.R. Part 52, app. D, § II.D, E, & F. Tier 1 information, which is the portion of the design-related information contained in the generic DCD for a certified design that is approved and certified by a design certification rule, should include “the top-level design features and performance characteristics” that are “the most significant to safety.” SRP at 14.3-9, 14.3-16. Because this information has been approved and certified by a design certification rule, any attempt to change or revise this information by a COL applicant/licensee outside the rulemaking process requires both an NRC-approved license amendment and an exemption. The exemption must be based on a finding of the need to assure adequate protection of the public health and safety and the existence of special circumstances. *See id.* at 14.3-10; *see also* 10 C.F.R. §§ 52.63(a)(1), (b)(1), 52.98(f); *id.* Part 52, app. D, § VIII.A. Tier 2 information, on the other hand, is the portion of the design-related information contained in the generic DCD that is approved but not certified by the design certification rule. *See* SRP at 14.3-9; *see also* 10 C.F.R. Part 52, app. D, § II.E. Compliance with Tier 2 information is required, but generic changes to, or plant-specific departures from, Tier 2 information by a COL applicant/licensee are governed by a process that may or may not require NRC approval via a license amendment. *See* SRP at 14.3-9 to -10; *see also* 10 C.F.R. Part 52, app. D, § VIII.B.5.a. In contrast, Tier 2* information is that portion of Tier 2 information, designated as Tier 2* information in the generic DCD, for which any plant-specific change by a COL applicant/licensee mandates a license

amendment but not an exemption (as it is not Tier 1 information). *See* SRP at 14.3-10; *see also* 10 C.F.R. Part 52, app. D, § VIII.B.6 (Tier 2* information is designated in the generic DCD with italicized text or brackets and an asterisk).

RULES OF PRACTICE: STANDING TO INTERVENE

To establish standing, under the agency's rules of practice a request for a hearing/petition for leave to intervene must include:

- (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.

10 C.F.R. § 2.309(d)(1)(i)-(iv). Ultimately, to establish standing, the Commission "insist[s] that an intervenor have some direct interest in the outcome of the proceeding." *Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 579 (2005).

RULES OF PRACTICE: INTERVENTION PETITION(S) (PLEADING REQUIREMENTS; PRO SE PETITIONER)

RULES OF PRACTICE: STANDING TO INTERVENE (CONSTRUCTION OF PRO SE PETITION; BURDEN OF ESTABLISHING STANDING)

In assessing whether the appropriate showing has been made to establish that interest in an agency licensing proceeding, a hearing petition generally will be "construe[d] . . . in the petitioner's favor" as it seeks to demonstrate standing. *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Unit 3), CLI-20-6, 91 NRC 225, 238 & n.83 (2020) (citing *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 394 (2015)). Also, a pro se petitioner will not be held "to the same 'standards of clarity and precision to which a lawyer might reasonably be expected to adhere.'" *Turkey Point*, CLI-15-25, 82 NRC at 394 (quoting *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-15-13, 81 NRC 456, 468 (2015), *aff'd*, CLI-15-25, 82 NRC at 407). Yet, whether pro se or otherwise, the petitioner bears the burden of establishing its standing. *See Vogtle*, CLI-20-6, 91 NRC at 238.

RULES OF PRACTICE: STANDING (TRADITIONAL; PROXIMITY PRESUMPTION; ORGANIZATIONAL; REPRESENTATIONAL)

Depending on the proceeding, a petitioner may seek to establish standing using either traditional judicial standing precepts or the proximity presumption. *See Peach Bottom*, CLI-05-26, 62 NRC at 579-83. And if the petitioner is a group, organizational or representational standing may be sought. *See Strata Energy, Inc.* (Ross In Situ Recovery Uranium Project), LBP-12-3, 75 NRC 164, 177, *aff'd*, CLI-12-12, 75 NRC 603 (2012).

RULES OF PRACTICE: STANDING (TRADITIONAL; INJURY-IN-FACT, ZONE OF INTERESTS)

A petitioner seeking to establish traditional standing must use contemporaneous judicial standing concepts that generally require a showing of an injury-in-fact within the zones of interest protected by the statutes that govern agency proceedings (e.g., the Atomic Energy Act, the National Environmental Policy Act), causation, and redressability. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 6 (1996). Specifically, the petitioner must demonstrate “a ‘concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision,’ where the injury is ‘to an interest arguably within the zone of interests protected by the governing statute.’” *Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915 (2009) (quoting *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993)).

COMBINED LICENSE AMENDMENTS: STANDING TO INTERVENE (INJURY IN FACT)

RULES OF PRACTICE: STANDING TO INTERVENE (INJURY IN FACT)

In addition, “a petitioner seeking to intervene in a license amendment proceeding must assert an injury-in-fact associated with *the challenged license amendment*, not simply a general objection to the facility.” *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 188 (1999) (citations omitted), *aff’d* LBP-98-27, 48 NRC 271 (1998), *petition for review denied sub nom. Dienethal v. NRC*, 203 F.3d 52 (D.C. Cir. 2000) (unpublished table decision); *see also Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329-30 (1989) (“Absent situations involving such obvious potential for offsite consequences, a

petitioner must allege some specific ‘injury in fact’ that will result from the action taken . . .”). This, in turn, requires that a petitioner establish “a plausible nexus between the challenged license amendments and [petitioner’s] asserted harm.” *Zion*, LBP-98-27, 48 NRC at 277. Further, in making this showing a petitioner must “indicate *how* the particular license amendments at issue would increase the risk of an offsite release of radioactive fission products.” *Zion*, CLI-99-4, 49 NRC at 189.

RULES OF PRACTICE: STANDING (PROXIMITY PRESUMPTION)

Conversely, the proximity presumption, which has generally been applied in proceedings for reactor “construction permits, operating licenses, or significant amendments thereto such as the expansion of the capacity of a spent fuel pool,” relieves a petitioner of the need to satisfy these traditional elements of standing. *St. Lucie*, CLI-89-21, 30 NRC at 329. Rather, the proximity presumption permits a petitioner to establish standing based on proximity to the geographic zone of potential harm from a nuclear facility.

RULES OF PRACTICE: STANDING (PROXIMITY PRESUMPTION)

With respect to certain nuclear facility proceedings, a petitioner may use the proximity presumption if the petitioner lives, *see Calvert Cliffs*, CLI-09-20, 70 NRC at 915-16; *St. Lucie*, CLI-89-21, 30 NRC at 329; has a significant property interest, *see USEC, Inc.* (American Centrifuge Plant), CLI-05-11, 61 NRC 309, 314-15 (2005); or otherwise has frequent contacts within approximately 50 miles of a reactor, *see Perry*, CLI-93-21, 38 NRC at 95. A petitioner must specify contacts with the affected area in the petition, *see Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 410 (2007), and the failure to include such crucial information constitutes grounds for denying standing, *see PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 139 (2010); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999).

COMBINED LICENSE AMENDMENTS: STANDING TO INTERVENE (PROXIMITY PRESUMPTION)

RULES OF PRACTICE: STANDING TO INTERVENE (PROXIMITY PRESUMPTION)

The Commission, however, does not automatically grant standing in every reactor licensing proceeding to a petitioner residing within a 50-mile radius of the facility. The 50-mile proximity presumption does apply to proceedings for

the issuance or renewal of a reactor construction permit/operating license under 10 C.F.R. Part 50 or an early site permit/combined operating license under 10 C.F.R. Part 52. *See, e.g., Calvert Cliffs*, CLI-09-20, 70 NRC at 914-18 (COL proceeding); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), LBP-19-3, 89 NRC 245, 258-59 (2019), *appeal dismissed as moot*, CLI-20-3, 91 NRC 133, 136 (2020). In other proceedings, however, the proximity presumption is determined on a “case-by-case basis,” *Peach Bottom*, CLI-05-26, 62 NRC at 580 considering the petitioner’s location and “the nature of the proposed action and the significance of the radioactive source,” *id.* at 580-81 (quoting *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 116-17 (1995)). Notably, in license amendment cases the proximity presumption applies “only if the challenged license amendments present an ‘obvious potential for offsite [radiological] consequences,’” *Zion*, LBP-98-27, 48 NRC at 276 (quoting *St. Lucie*, CLI-89-21, 30 NRC at 330), which, in turn, depends on the “kind of action at issue, when considered in light of the radioactive sources at the plant,” *Peach Bottom*, CLI-05-26, 62 NRC at 581.

RULES OF PRACTICE: STANDING (ORGANIZATIONAL; REPRESENTATIONAL)

Standing can be shown by an organization by establishing either a cognizable injury to its organizational interests (organizational standing) or harm to the interests of its members (representational standing). *See Ross*, LBP-12-3, 75 NRC at 177.

RULES OF PRACTICE: STANDING (REPRESENTATIONAL)

To establish representational standing, an organization must demonstrate that “(1) its members would otherwise have standing to sue in their own right; (2) the interests that the organization seeks to protect are germane to its purpose; and (3) neither the claim asserted nor the relief requested requires an individual member to participate in the organization’s lawsuit.” *Private Fuel Storage*, CLI-99-10, 49 NRC at 323 (citing *Hunt v. Wash. State Apple Advert. Comm’n*, 432 U.S. 333, 343 (1977)). Moreover, in this context, an organization must demonstrate “how at least one of its members may be affected by the licensing action, must identify the member, and must show that the organization is authorized to represent that member.” *International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 250 (2001).

RULES OF PRACTICE: STANDING (SHOWING BASED ON STANDING IN PRIOR PROCEEDING)

Although a narrow exception may exist for a petitioner who establishes standing in one case to employ that standing determination in another proceeding that is “merely another round in a continuing controversy,” *Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974), a petitioner generally “must make a fresh standing demonstration in *each* proceeding in which intervention is sought because a petitioner’s circumstances may change from one proceeding to the next,” *Bell Bend*, CLI-10-7, 71 NRC at 138 & n.26 (citing *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), CLI-93-4, 37 NRC 156, 162-63 (1993)).

RULES OF PRACTICE: STANDING (PROXIMITY PRESUMPTION)

There are limits to proximity standing when there are “no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel.” *Peach Bottom*, CLI-05-26, 62 NRC at 582. Thus, the Commission has rejected proximity standing for license transfers, *see id.* at 581, license amendments associated with shutdown and de-fueled reactors, *see Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), LBP-98-27, 48 NRC 271, 276 (1998), *aff’d*, CLI-99-4, 49 NRC at 191-92; *Exelon Generation Co., LLC* (Three Mile Island Nuclear Station, Units 1 and 2), LBP-20-2, 91 NRC 10, 30, 32 (2020), and certain changes to worker-protection requirements, *see St. Lucie*, CLI-89-21, 30 NRC at 329-30.

RULES OF PRACTICE: STANDING (PROXIMITY PRESUMPTION)

The Commission has stated that “[i]n ruling on claims of ‘proximity standing,’ we decide the appropriate radius on a case-by-case basis.” *Peach Bottom*, CLI-05-26, 62 NRC at 580.

RULES OF PRACTICE: STANDING (PROXIMITY PRESUMPTION; STANDING AS BASIS FOR CONTENTION ADMISSIBILITY)

If member declarations, when considered along with a petitioner’s pro se petition, show that there are sufficient allegations of increased risk of harm associated with the amendment to demonstrate the basis for its representational standing through the application of the proximity presumption, *see Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-16-5, 83 NRC 259, 271-74 (2016), whether the mechanism for triggering that harm, as outlined in the petitioner’s contentions, is viable and within the scope

of the amendment is a matter that goes to the admissibility of the contentions challenging the amendment. A board decision on standing is not a ruling on either the admissibility or the merits of a petitioner's contentions. *See id.* at 274 & n.78 (citing *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), LBP-03-12, 58 NRC 75, 93 (2003) (concluding that an "obvious potential for offsite consequences . . . is not in itself sufficient to support an admissible contention"))).

RULES OF PRACTICE: CONTENTION REQUIREMENT(S) FOR INTERVENTION

To participate as a party in this proceeding, in addition to establishing its standing, a petitioner also must proffer at least one contention that meets the Commission's admissibility requirements found in 10 C.F.R. § 2.309(f)(1).

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

For a proposed contention to be admitted for further litigation, it 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;
- (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

10 C.F.R. § 2.309(f)(1)(i)-(vi). These six criteria aim to "focus litigation on concrete issues and result in a clearer and more focused record for decision."

Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2202 (Jan. 14, 2004) [hereinafter 2004 Part 2 Changes].

**RULES OF PRACTICE: CONTENTIONS (BURDEN TO SATISFY
ADMISSIBILITY CRITERIA)**

The petitioner bears the burden to satisfy each of these criteria, *see Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-23, 82 NRC 321, 329 (2015), while a failure to comply with any of the requirements constitutes grounds for rejecting a proposed contention, *see* 2004 Part 2 Changes, 69 Fed. Reg. at 2221, *see also Private Fuel Storage*, CLI-99-10, 49 NRC at 325.

**RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY; PRO SE
PETITIONER)**

With regard to a pro se petitioner, while the Commission has stated that “[a] board may consider the readily apparent legal implications of a *pro se* petitioner’s arguments, even if not expressly stated in the petition,” it also has indicated that “[t]his authority is limited in that the petitioner — not the board — must provide the information required to satisfy our contention admissibility standards.” *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-18-4, 87 NRC 89, 96-97 (2018).

**RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY;
SCOPE); SCOPE OF PROCEEDING**

In particular regarding the dictates of 10 C.F.R. § 2.309(f)(1)(iii), a proposed contention must be rejected if it raises issues beyond the scope of the proceeding as established by the Commission’s hearing notice. *See Public Service Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976). Thus, a proposed contention challenging a license amendment must confine itself to the “health, safety or environmental issues fairly raised by [the license amendment].” *Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 624 (1981). Consequently, challenges to the current licensing basis of a plant, rather than to the requested facility modification, are not within the permissible scope of a license amendment proceeding and are instead properly lodged as matters warranting enforcement action pursuant to the process prescribed by 10 C.F.R. § 2.206. *See, e.g., NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-19-7, 90 NRC 1, 14 (2019).

RULES OF PRACTICE: CONTENTIONS (SUPPORTING INFORMATION OR EXPERT OPINION)

“Neither mere speculation nor bare conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention.” *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-07-3, 65 NRC 237, 253 (2007) (citing *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)).

TECHNICAL ISSUES DISCUSSED

The following technical issues are discussed: seismic and structural design.

MEMORANDUM AND ORDER (Denying Intervention Petition and Terminating Proceeding)

The genesis of this proceeding is a February 7, 2020 application submitted by Southern Nuclear Operating Company, Inc. (SNC) asking the Nuclear Regulatory Commission (NRC) to amend the existing 10 C.F.R. Part 52 combined license (COL) for the Vogtle Electric Generating Plant, Unit 3 (Vogtle 3). The Vogtle 3 COL authorizes SNC to construct the facility using the Westinghouse Electric Company (WEC) Advanced Passive 1000 (AP1000) design certified pursuant to 10 C.F.R. Part 52, Appendix D. The amendment as proposed revises the Vogtle 3 COL Appendix C (and plant-specific Tier 1) inspections, tests, analyses, and acceptance criteria (ITAAC) and corresponding plant-specific Tier 2 and Tier 2* information in the Vogtle 3 updated final safety analysis report (UFSAR). Specifically, SNC seeks to modify the minimum seismic gap requirements between a portion of the opposite-facing walls of Vogtle 3’s nuclear island-based auxiliary building and the annex building to accommodate as-built localized nonconformances in the auxiliary building wall. Further, because this proposed change requires a departure from plant-specific Tier 1 information, SNC also requests an exemption from elements of the AP1000 certified design in accordance with 10 C.F.R. § 52.63(b)(1).¹

Before the Licensing Board is the May 11, 2020 hearing request of pro se petitioners Blue Ridge Environmental Defense League and its local chapter Concerned Citizens of Shell Bluff (collectively BREDL) that includes two con-

¹ See Letter from Brian H. Whitley, Director, Regulatory Affairs, SNC, to NRC Document Control Desk at 1 (Feb. 7, 2020) (ADAMS Accession No. ML20038A939) [hereinafter LAR].

tentions challenging the SNC license amendment request (LAR).² SNC and the NRC Staff submitted answers asserting that the BREDL hearing request should be denied as lacking an admissible contention, with SNC also taking the position that BREDL lacks standing, claims that BREDL contested in its reply.³

For the reasons set forth below, while we find BREDL has established its standing to intervene, we conclude BREDL has failed to proffer an admissible contention. Consequently, we deny BREDL's hearing request and terminate this proceeding.

I. BACKGROUND

A. Applicable Regulatory Requirements/Criteria Associated with the Design Certification/COL Licensing Process

A standard design, such as the AP1000, is approved by the design certification rulemaking process, with the resulting design certification rule added to 10 C.F.R. Part 52 as an appendix. *See* 10 C.F.R. § 52.54(a); *id.* Part 52, app. D (design certification for AP1000 design). Each Part 52 certified design appendix also incorporates by reference a generic design certification document (DCD), which is submitted by the certified design applicant and contains information that is subject to NRC review and approval as part of the rulemaking process.⁴ In addition, a COL applicant/licensee that references a certified design must provide a plant-specific final safety analysis report (FSAR),⁵ which consists of

² *See* Petition for Leave to Intervene and Request for Hearing by [BREDL] Regarding [SNC]'s Request for a License Amendment and Exemption for Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements, LAR-20-001 (May 11, 2020) at 1 [hereinafter BREDL Petition].

³ *See* NRC Staff Answer to Petition for Leave to Intervene and Request for Hearing (June 5, 2020) at 1 [hereinafter Staff Answer]; [SNC]'s Answer Opposing Petition to Intervene and Request for Hearing (June 5, 2020) at 32 [hereinafter SNC Answer]; Reply of [BREDL] to Answers of [NRC] and [SNC], LAR-20-001 (June 12, 2020) at 8 [hereinafter BREDL Reply].

⁴ *See id.* app. D, § II.A; NRC, Standard Review Plan, NUREG-800 § 14.3 [ITAAC], app. A at 14.3-9 (Mar. 2007) (Information on Prior Design Certification Reviews) (ADAMS Accession No. ML070660618) [hereinafter SRP]. In the case of the WEC AP1000, the applicable generic DCD is revision 19, the various sections of which can be found as an ADAMS package at ADAMS Accession No. ML11171A500. In citing the generic DCD in this decision, we reference the ADAMS accession numbers for the specific portions of the DCD the first time that a particular section is referenced.

⁵ For Vogtle 3, the Tier 2 information portion of SNC's updated FSAR is revision 8, while the Tier 1 information is revision 7, both of which can be found in an ADAMS package at ADAMS Accession No. ML19171A096. In citing to particular sections of these Tier 2 and Tier 1 documents, the first time a section is cited we will reference the ADAMS accession numbers for the specific portions of the document's nonproprietary versions.

the information in the generic DCD for that certified design, as modified and supplemented by any plant-specific departures or exemptions.⁶

The design certifications issued to-date by the agency, including the AP1000, have design information allocated to one of three categories: Tier 1, Tier 2, and Tier 2*. *See* SRP at 14.3-9 to -11; *see also* 10 C.F.R. Part 52, app. D, § II.D, E, & F. Tier 1 information, which is the portion of the design-related information contained in the generic DCD for a certified design that is approved and certified by a design certification rule, should include “the top-level design features and performance characteristics” that are “the most significant to safety.” SRP at 14.3-9, 14.3-16. Because this information has been approved and certified by a design certification rule, any attempt to change or revise this information by a COL applicant/licensee outside the rulemaking process requires both an NRC-approved license amendment and an exemption. The exemption must be based on a finding of the need to assure adequate protection of the public health and safety and the existence of special circumstances. *See id.* at 14.3-10; *see also* 10 C.F.R. §§ 52.63(a)(1), (b)(1), 52.98(f); *id.* Part 52, app. D, § VIII.A. Tier 2 information, on the other hand, is the portion of the design-related information contained in the generic DCD that is approved but not certified by the design certification rule. *See* SRP at 14.3-9; *see also* 10 C.F.R. Part 52, app. D, § II.E. Compliance with Tier 2 information is required, but generic changes to, or plant-specific departures from, Tier 2 information by a COL applicant/licensee are governed by a process that may or may not require NRC approval via a license amendment.⁷ In contrast, Tier 2* information is that portion of Tier 2 information, designated as Tier 2* information in the generic DCD, for which any plant-specific change by a COL applicant/licensee mandates a license amendment but not an exemption (as it is not Tier 1 information). *See* SRP at 14.3-10; *see also* 10 C.F.R. Part 52, app. D, § VIII.B.6 (Tier 2* information is designated in the generic DCD with italicized text or brackets and an asterisk).

⁶ *See* 10 C.F.R. § 52.47(a); *see also id.* Part 52, app. D, § I.C (definition of plant-specific DCD); SRP at 14.3-9. Because the Vogtle 3 UFSAR draws from several design information categories, it uses color-coded text to indicate what type of information is involved. *See* SNC, VEGP 3 & 4 UFSAR at unnumbered p. 8 (rev. 8 updated through Mar. 21, 2019) (providing UFSAR formatting legend designating text color codes for original WEC AP1000 revision 19 DCD content, departures from DCD revision 19 content, standard FSAR content, and site-specific FSAR content) (ADAMS Accession No. ML19171A051) [hereinafter UFSAR Tier 2].

⁷ *See* SRP at 14.3-9 to -10; *see also* 10 C.F.R. Part 52, app. D, § VIII.B.5.a (indicating license amendment is not required for departure from Tier 2 information unless (1) there is a change/departure from Tier 1 or Tier 2* information or any license technical specification; or (2) under Part 52, app. D, § VIII.B.5.b.-c., the Tier 2 information change would have a negative effect on (a) elements of the plant-specific DCD/FSAR per one of eight criteria, or (b) a plant-specific DCD/FSAR-identified ex-vessel severe accident design feature under either of two criteria).

B. SNC's License Amendment Request

Against this regulatory background, SNC submitted the LAR at issue in this proceeding on February 7, 2020. *See supra* note 1. Vogtle 3, one of a pair of AP1000 pressurized water reactor units being constructed at SNC's existing Vogtle facility in Burke County, Georgia, was issued a COL by the NRC in February 2012.⁸ According to SNC, Vogtle 3 is nearing the end of construction, with fuel loading currently scheduled for late this year and operations to begin late next year. *See Tr.* at 12-13.

According to the analysis SNC provided in support of its LAR, as described in Vogtle 3's UFSAR and the facility's COL Appendix C (and the corresponding plant-specific Tier 1 information), Vogtle 3's nuclear island structures include the containment (which encompasses both the steel containment vessel and the containment internal structures) and the shield and auxiliary buildings, all of which are structurally integrated on a common concrete basemat that is embedded below the finished plant grade. These nuclear island structures are, SNC maintains, intended to protect safety-related equipment from the consequences of postulated internal or external events, including fires, flooding, hurricanes, tornadoes, tsunamis, and (as seismic Category I structures) a safe shutdown earthquake (SSE). In contrast, the portion of the annex building next to the nuclear island is a structural steel and reinforced concrete seismic Category II structure designed to withstand an SSE without collapsing.⁹

In its LAR, SNC also states that the UFSAR and COL Appendix C (and the corresponding plant-specific Tier 1 information) describe the annex building as structurally separated from the nuclear island structures by a 3-inch minimum gap above grade. According to SNC, this separation is to prevent interaction between the nuclear island structures and the adjacent seismic Category II structures, such as the annex building, during a seismic event. The minimum 3-inch gap, SNC claims, ensures that during an SSE event a minimum 1-inch gap is maintained between the nuclear island and the annex building as required by the Vogtle 3 COL Appendix C ITAAC and the USFAR.¹⁰

⁸ Office of New Reactors, NRC, [COL Vogtle 3, SNC et al.], Docket No. 52-025, License No. NPF-91, at 2, 18 (Feb. 10, 2012) (ADAMS Accession No. ML14100A106) [hereinafter Vogtle 3 COL].

⁹ *See* LAR, encl. 1, at 3 (Request for License Amendment: Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements (LAR-20-001)) [hereinafter Seismic Gap Analysis]; *see also* UFSAR Tier 2, at 3.7-7, 3.7-16 (indicating nuclear island buildings are seismic Category I while annex building is seismic Category II) (ADAMS Accession No. ML19171A057); Vogtle 3 COL, app. C, at C-408 to -409 (ITAAC); SNC, VEGP 3 & 4 Tier 1, at 3.3-1 to -2 (rev. 7 updated through Mar. 21, 2019) (Buildings) (ADAMS Accession No. ML19171A045) [hereinafter Tier 1 Information].

¹⁰ *See* Seismic Gap Analysis at 3-4, 5; *see also* UFSAR Tier 2, at 3.8-66 (stating that required
(Continued)

But as the LAR recognizes, a portion of an auxiliary building wall fails to maintain this 3-inch gap.¹¹ For a segment of the north wall of the auxiliary building just opposite the southwest annex building wall¹² — specifically the section of the 50-foot high auxiliary building wall west of Column Line I from elevation 141 feet (about half way up the auxiliary building wall) through elevation 154 feet — a “bulge” in the auxiliary building wall leaves a minimum north-south gap of only 2-3/16 inches from the annex building wall.¹³ See Seismic Gap Analysis at 4; see also Tr. at 46, 60-61. To address this as-built nonconformity,¹⁴ the requested amendment would relax the north-south minimum gap requirement above grade for the auxiliary building area in question from 3 inches to 2-1/16 inches, which SNC’s LAR asserts would still leave more than the required 1-inch minimum gap.¹⁵ See Seismic Gap Analysis at 5. This is the only change proposed in the requested amendment.¹⁶

3-inch gap above grade “provides space to prevent interaction between the nuclear island structures and the adjacent seismic Category II structures during a seismic event.”) (ADAMS Accession No. ML19171A058); Vogtle 3 COL, app. C, at C-440, tbl. 3.3-6 (ITAAC No. 819); Tier 1 Information, at 3.3-34, tbl. 3.3-6 (ITAAC Design Commitment No. 13); *infra* note 15. As the NRC Staff recognized, this minimum above grade 3-inch gap requirement was originally a 4-inch gap requirement but was revised in February 2018 via a Staff-approved SNC LAR. See Staff Answer at 6 & nn.22-23.

¹¹ With a description that SNC acknowledged was accurate relative to the Vogtle 3 facility, see Tr. at 44-45, the glossary of terms on the NRC’s website describes the auxiliary building as “[a] building at a nuclear power plant, which is frequently located adjacent to the reactor containment structure, and houses most of the auxiliary and safety systems associated with the reactor, such as radioactive waste systems, chemical and volume control systems, and emergency cooling water systems.” NRC, Full Text Glossary, <https://www.nrc.gov/reading-rm/basic-ref/glossary/auxiliary-building.html> (definition of “Auxiliary building”).

¹² According to SNC, the annex building is a large building that contains several different operations, including labs and low-level radioactive waste storage. See Tr. at 45.

¹³ Because the 3-inch gap is unchanged above and below this anomaly, SNC maintains that this confirms it is, in fact, a “bulge” rather than attributable to some other factor like wall tilting. See Tr. at 46, 61-62.

¹⁴ As SNC recognizes, “[t]he designation of the nonconformance as ‘as-built’ recognizes that this issue was discovered after the affected section of the nuclear island and annex building walls were constructed.” SNC Answer at 3 n.7 (citing Vogtle 3 COL, app. C, at C-31 (Vogtle 3 ITAAC Criteria)) (“As-built means the physical properties of a structure, system, or component following the completion of its installation or construction activities at its final location at the plant site.”).

¹⁵ The NRC Staff indicates that the changes to accomplish this would “include changes to Tier 2 Appendix 2.5E Section 5.2 and Subsection 3.7.2.8.1 information, UFSAR Tier 2* Subsection 3.8.5.1 information, Tier 1 information in [ITAAC criteria] Table 3.3-6, and corresponding changes to Combined License Appendix C information.” Staff Answer at 3 n.6.

¹⁶ According to the LAR, the proposed change does not affect (1) “any additional COL Appendix C descriptions or figures because the minimum gap between the nuclear island and the annex building is not specified or dimensioned elsewhere in COL Appendix C text or figures”; (2) “the gap below grade between the nuclear island and the annex building as defined in the licensing basis”; (3) “the

(Continued)

SNC's LAR also maintains that both generic and site-specific analyses established that appropriate seismic displacement distances would be preserved between the two buildings. Using the 2D System for Analysis of Soil-Structure Interaction (SASSI) software program, generic modeling was done to determine the potential displacement between the auxiliary building and the turbine building, a non-nuclear island structure located just to the west of the annex building. According to SNC, because the structure of the adjacent turbine building is not as stiff as the annex building, turbine building displacements under SSE demand would be larger, making this turbine building modeling a valid point of comparison relative to the auxiliary building. Additionally, the LAR describes a site-specific study, done as a follow-on to a site-specific SASSI analysis, to compare perimeter wall deflections to account for significant building changes that were not included in the generic SASSI analysis, which the LAR maintains likewise provides a valid point of comparison relative to the nonconforming measured gap between the annex and auxiliary buildings. *See id.* at 6-8. Both the generic and site-specific analyses, SNC declared, showed that during a seismic event the gap between the auxiliary building and annex building at the area of nonconformance would still maintain a safe space "larger than the licensing basis requirement of a 1-inch minimum gap." *Id.* at 7, 8.

In addition to this seismic assessment, the LAR provides an evaluation of differential foundation settlement impacts on the gap between Vogtle 3's nuclear island structures and adjacent buildings. The LAR states that SNC created a site-specific settlement monitoring program to gather data regarding building foundation settlement, both during Vogtle 3 construction and after construction is complete, to verify any structural displacements from construction loads. The monitoring program settlement data for the past several years, SNC asserts, indicates that (1) the nuclear island basemat has deflected more in the center and less at the perimeter, which would tend to cause the perimeter walls to lean towards the center of the nuclear island and away from the annex building; and (2) the annex building deflection contour in the vicinity of the nuclear island is uniform so as not to result in tilt toward the nuclear island. *See id.* at 8; *see also* Tr. at 54.

Also, the LAR analysis regarding foundation settlement impacts claims that as wall construction progresses upward, construction methods require that any short-term settlement that would cause a lower wall to tilt toward the gap between buildings be offset by installing the upper wall at the original design location, thereby minimizing the tilt. As for long-term settlement, SNC maintains it is expected to be relatively small due to the thick engineered compacted

displacements in the east-west direction between the nuclear island and the annex building in the licensing basis"; or (4) "the gap above grade between the nuclear island and the annex building outside the area of the localized nonconformance." Seismic Gap Analysis at 5.

fill and over-consolidated Blue Bluff Marl overlying the lower sand stratum at the Vogtle site. According to SNC, site-specific settlement data through 2019 indicates that no significant changes should be anticipated in either short-term or long-term settlement trends. Therefore, according to the LAR, differential settlement is not adversely impacting the gaps between the nuclear island and the annex and other adjacent buildings.¹⁷ See Seismic Gap Analysis at 8.

C. Procedural Background

Following receipt of the SNC LAR, on March 4, 2020, the NRC Staff issued a hearing opportunity notice that was published in the *Federal Register* six days later. See Vogtle Electric Generating Plant, Unit 3, 85 Fed. Reg. 13,944 (Mar. 10, 2020) [hereinafter Vogtle 3 Hearing Notice]. BREDL's hearing petition was timely submitted on May 11, 2020, followed by answers from the NRC Staff and SNC dated June 5, 2020, urging that the BREDL hearing request be rejected. BREDL filed a reply to the Staff and SNC responses on June 12, 2020. See *supra* notes 2-3. Having raised the possibility of holding an oral argument concerning the BREDL petition in its May 19, 2020 initial prehearing order, in subsequent orders issued on June 8 and June 16, 2020, the Board established the protocols governing, as well as a July 1, 2020 date for, that initial prehearing conference.¹⁸

¹⁷ In addition to the analysis supporting its license amendment request, as part of its January 2020 application SNC also provided a justification for (1) a "no significant hazards consideration finding" pursuant to 10 C.F.R. § 50.92; (2) a categorical exclusion from the need to prepare an environmental assessment or an environmental impact statement pursuant to 10 C.F.R. § 51.22(b); and (3) an exemption to permit Tier 1 information changes pursuant to 10 C.F.R. Part 52, App. D, § VIII.A.4 and 10 C.F.R. § 52.63(b)(1). See Seismic Gap Analysis at 11-14; LAR encl. 2, at 2-6 (Exemption Request: Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements (LAR-20-001)). BREDL has recognized that a no significant hazards consideration determination (NSHCD) by the NRC Staff associated with the SNC amendment request "is not subject to challenge in [an] adjudicator[y] proceeding." Tr. at 24; see, e.g., *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-19-7, 90 NRC 1, 8-9 (2019) (declaring that petitioner's request to review a Staff NSHCD "is inconsistent with 10 C.F.R. § 50.58(b)(6), which states that '[n]o petition or other request for review of or hearing on the staff's [NSDCD] will be entertained by the Commission. The staff's determination is final, subject only to the Commission's discretion, on its own initiative, to review the determination.'"). Additionally, notwithstanding a belated attempt during argument before the Board to suggest otherwise, see Tr. at 27-28, in its hearing petition BREDL makes no mention of any purported failings associated with the exemption so as to preserve a challenge to that request.

¹⁸ See Licensing Board Memorandum and Order (Establishing Initial Prehearing Conference Schedule) (June 16, 2020) at 1 (unpublished); Licensing Board Memorandum and Order (Regarding Initial Prehearing Conference Scheduling and Procedures) (June 8, 2020) at 2-4 (unpublished); Licensing Board Memorandum and Order (Initial Prehearing Order) (May 19, 2020) at 7 (unpublished).

On July 1, the Board conducted a telephonic initial prehearing conference during which it heard oral argument from BREDL, the NRC Staff, and SNC regarding BREDL's standing to intervene, the admissibility of BREDL's two proffered contentions, and the issue of BREDL's access to documents associated with the SNC LAR.¹⁹ See Tr. at 1-95.

II. STANDING

A. Legal Requirements for Standing

To establish standing, under the agency's rules of practice a request for a hearing/petition for leave to intervene must include:

- (i) The name, address and telephone number of the requestor or petitioner;
- (ii) The nature of the requestor's/petitioner's right under the [Atomic Energy Act of 1954, as amended,] 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.

10 C.F.R. § 2.309(d)(1)(i)-(iv). Ultimately, to establish standing, the Commission "insist[s] that an intervenor have some direct interest in the outcome of the proceeding." *Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 579 (2005). And in assessing whether the appropriate showing has been made to establish that interest in an agency licensing proceeding, a hearing petition generally will be "construe[d] . . . in the petitioner's favor" as it seeks to demonstrate standing.²⁰ Also, a pro se petitioner (such as BREDL) will not be held "to the same 'standards of clarity and precision to which a lawyer might reasonably be

¹⁹ Subsequently, on August 4, 2020, acting pursuant to 10 C.F.R. § 50.91(a)(4), the NRC Staff issued the requested Vogtle 3 COL license amendment (and the corresponding exemption), along with a final NSHCD and a Staff safety evaluation. See Notification of Issuance of License Amendment (Aug. 4, 2020) at 1-2. The license amendment and associated documents can be found in an ADAMS package at ADAMS Accession No. ML20132A032.

²⁰ *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Unit 3), CLI-20-6, 91 NRC 225, 238 & n.83) (2020) (citing *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 394 (2015)).

expected to adhere.”²¹ Yet, whether pro se or otherwise, the petitioner bears the burden of establishing its standing. *See Vogtle*, CLI-20-6, 91 NRC at 238.

Depending on the proceeding, a petitioner may seek to establish standing using either traditional judicial standing precepts or the proximity presumption. *See Peach Bottom*, CLI-05-26, 62 NRC at 579-83. And if the petitioner is a group (such as BREDL), organizational or representational standing may be sought. *See Strata Energy, Inc.* (Ross In Situ Recovery Uranium Project), LBP-12-3, 75 NRC 164, 177, *aff’d*, CLI-12-12, 75 NRC 603 (2012).

A petitioner seeking to establish traditional standing must use contemporaneous judicial standing concepts that generally require a showing of an injury-in-fact within the zones of interest protected by the statutes that govern agency proceedings (e.g., the Atomic Energy Act, the National Environmental Policy Act), causation, and redressability. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 6 (1996). Specifically, the petitioner must demonstrate “a ‘concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision,’ where the injury is ‘to an interest arguably within the zone of interests protected by the governing statute.’”²² In addition, “a petitioner seeking to intervene in a license amendment proceeding must assert an injury-in-fact associated with the *challenged license amendment*, not simply a general objection to the facility.”²³ This, in turn, requires that a petitioner establish “a plausible nexus between the challenged license amendments and [petitioner’s] asserted harm.” *Zion*, LBP-98-27, 48 NRC at 277. Further, in making this showing a petitioner must “indicate *how* the particular license amendments at issue would increase the risk of an offsite release of radioactive fission products.” *Zion*, CLI-99-4, 49 NRC at 189.

Conversely, the proximity presumption, which has generally been applied in proceedings for reactor “construction permits, operating licenses, or significant amendments thereto such as the expansion of the capacity of a spent fuel pool,” relieves a petitioner of the need to satisfy these traditional elements of stand-

²¹ *Turkey Point*, CLI-15-25, 82 NRC at 394 (quoting *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-15-13, 81 NRC 456, 468 (2015), *aff’d*, CLI-15-25, 82 NRC at 407).

²² *Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915 (2009) (quoting *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993)).

²³ *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 188 (1999) (citations omitted), *aff’d* LBP-98-27, 48 NRC 271 (1998), *petition for review denied sub nom. Dienethal v. NRC*, 203 F.3d 52 (D.C. Cir. 2000) (unpublished table decision); *see also Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329-30 (1989) (“Absent situations involving such obvious potential for offsite consequences, a petitioner must allege some specific ‘injury in fact’ that will result from the action taken . . .”).

ing. *St. Lucie*, CLI-89-21, 30 NRC at 329. Rather, the proximity presumption permits a petitioner to establish standing based on proximity to the geographic zone of potential harm from a nuclear facility. More specifically with respect to certain nuclear facility proceedings, a petitioner may use the proximity presumption if the petitioner lives,²⁴ has a significant property interest,²⁵ or otherwise has frequent contacts²⁶ within approximately 50 miles of a reactor.²⁷ A petitioner must specify contacts with the affected area in the petition,²⁸ and the failure to include such crucial information constitutes grounds for denying standing.²⁹

The Commission, however, does not automatically grant standing in every reactor licensing proceeding to a petitioner residing within a 50-mile radius of the facility. The 50-mile proximity presumption does apply to proceedings for the issuance or renewal of a reactor construction permit/operating license under 10 C.F.R. Part 50 or an early site permit/COL under 10 C.F.R. Part 52.³⁰ In other proceedings, however, the proximity presumption is determined on a “case-by-case basis,”³¹ considering the petitioner’s location and “the nature of the proposed action and the significance of the radioactive source.”³² Notably, in license amendment cases the proximity presumption applies “only if the challenged license amendments present an ‘obvious potential for offsite [radiological] consequences,’”³³ which, in turn, depends on the “kind of action at issue, when considered in light of the radioactive sources at the plant.”³⁴

²⁴ See *Calvert Cliffs*, CLI-09-20, 70 NRC at 915-16; *St. Lucie*, CLI-89-21, 30 NRC at 329.

²⁵ See *USEC Inc.* (American Centrifuge Plant), CLI-05-11, 61 NRC 309, 314-15 (2005) (granting standing based on petitioner’s holding title to house near nuclear facility).

²⁶ See *Perry*, CLI-93-21, 38 NRC at 95.

²⁷ This 50-mile presumed zone of potential harm corresponds roughly to the ingestion pathway emergency planning zone applicable to the currently licensed fleet of commercial power reactors. See *Ross*, LBP-12-3, 75 NRC at 189 n.27.

²⁸ See *Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 410 (2007) (stating the Commission requires “fact-specific standing allegations, not conclusory assertions,” such as “general assertions of proximity” to establish the proximity presumption); see also *Peach Bottom*, CLI-05-26, 62 NRC at 581.

²⁹ See *PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 139 (2010); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999).

³⁰ See, e.g., *Calvert Cliffs*, CLI-09-20, 70 NRC at 914-18 (COL proceeding); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), LBP-19-3, 89 NRC 245, 258-59 (2019) (subsequent license renewal proceeding), *appeal dismissed as moot*, CLI-20-3, 91 NRC 133, 136 (2020).

³¹ *Peach Bottom*, CLI-05-26, 62 NRC at 580.

³² *Id.* at 580-81 (quoting *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 116-17 (1995)).

³³ *Zion*, LBP-98-27, 48 NRC at 276 (quoting *St. Lucie*, CLI-89-21, 30 NRC at 330).

³⁴ *Peach Bottom*, CLI-05-26, 62 NRC at 581.

Standing can be shown by an organization such as BREDL by establishing either a cognizable injury to its organizational interests (organizational standing) or harm to the interests of its members (representational standing). *See Ross*, LBP-12-3, 75 NRC at 177. To establish representational standing, an organization must demonstrate that “(1) its members would otherwise have standing to sue in their own right; (2) the interests that the organization seeks to protect are germane to its purpose; and (3) neither the claim asserted nor the relief requested requires an individual member to participate in the organization’s lawsuit.” *Private Fuel Storage*, CLI-99-10, 49 NRC at 323 (citing *Hunt v. Wash. State Apple Advert. Comm’n*, 432 U.S. 333, 343 (1977)). Moreover, in this context, an organization must demonstrate “how at least one of its members may be affected by the licensing action, must identify the member, and must show that the organization is authorized to represent that member.” *International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 250 (2001).

Finally, although a narrow exception may exist for a petitioner who establishes standing in one case to employ that standing determination in another proceeding that is “merely another round in a continuing controversy,”³⁵ a petitioner generally “must make a fresh standing demonstration in *each* proceeding in which intervention is sought because a petitioner’s circumstances may change from one proceeding to the next.”³⁶

With these legal precepts in mind, we turn to the question of whether BREDL has demonstrated standing to intervene in this proceeding.

B. BREDL Standing Analysis

As the basis for its standing, BREDL relies on the proximity presumption as the grounds upon which several of its members claim standing, which provides representational standing for itself based on the standing of those members. *See* BREDL Petition at 4. It has submitted a list of four members of BREDL and Concerned Citizens of Shell Bluff whose interests BREDL asserts it represents in this proceeding. Each of the members has filed a declaration stating that he lives within 50 miles of Vogtle 3. Each member further states that the license amendment “would increase the risk to my health and safety” and he is “concerned about releases of radioactive substances to the air and water, an accident involving the release of radioactive materials, and my ability to protect

³⁵ *Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974).

³⁶ *Bell Bend*, CLI-10-7, 71 NRC at 138 & n.26 (“[T]he Board correctly concluded that [petitioner] could not rely on other boards’ findings of standing in the two prior proceedings concerning the Susquehanna facility.”) (citing *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), CLI-93-4, 37 NRC 156, 162-63 (1993)).

myself and my family if a radioactive accident were to occur.” *E.g.*, Richard L. Colclough, Decl. of Standing ¶3 (May 6, 2020) [hereinafter Colclough Decl.]. BREDL claims that its members have proximity standing by virtue of their residing “well within 25 miles” of Vogtle 3. BREDL Petition at 5.

The NRC Staff does not contest BREDL’s demonstration of standing. *See* Staff Answer at 14-15; Tr. at 63. SNC, however, challenges BREDL’s claim of standing because BREDL “has not established that the change to the minimum gap requirements proposed by the LAR presents an obvious potential for offsite consequences” and BREDL’s “conclusory assertions do not demonstrate or allege an injury caused by the license amendment.” SNC Answer at 30, 32.

We agree with BREDL and the NRC Staff that the proximity presumption applies here. BREDL’s declarants have alleged an increased risk of harm resulting from the license amendment. Each of BREDL’s members states that he considers Vogtle 3 is “inherently dangerous and the proposed amendment would increase the risk to my health and safety.” *E.g.*, Colclough Decl. ¶3. Moreover, in seeking to establish the admissibility of its Contention Two, BREDL makes several specific arguments supporting a plausible or obvious increased potential for offsite consequences resulting from the license amendment, not just from the operation of Vogtle 3. BREDL states that the LAR ignores a “serious structural and seismic risk issue at Vogtle.” BREDL Petition at 15. As explained more fully in section III.B.2 *infra*, BREDL’s Contention Two alleges that the LAR is misleading insofar as it seeks to “accommodate construction as-built localized nonconformances” of a certain wall at Vogtle 3. *Id.* (quoting Seismic Gap Analysis at 3). BREDL claims that the “[nuclear island] is sinking” and therefore “the acceptance criteria of the ITAAC in the combined license are not capable of being met.” *Id.* at 15, 16. As a result of this nonconformance, BREDL argues there is an increased “likelihood of seismic failure and meltdown . . . which would be contrary to providing reasonable assurance of adequate protection of public health and safety.” *Id.*

We recognize there are limits to proximity standing when there are “no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel.” *See Peach Bottom*, CLI-05-26, 62 NRC at 582 (stating that the proposed license transfer did not implicate these concerns). Thus, the Commission has rejected proximity standing for license transfers,³⁷ license amendments associated with shutdown and de-fueled reactors,³⁸ and certain changes to worker-protection requirements.³⁹ Here, however,

³⁷ *See Peach Bottom*, CLI-05-26, 62 NRC at 581.

³⁸ *See Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), LBP-98-27, 48 NRC 271, 276 (1998), *aff’d*, CLI-99-4, 49 NRC at 191-92; *Exelon Generation Co., LLC* (Three Mile Island Nuclear Station, Units 1 and 2), LBP-20-2, 91 NRC 10, 30, 32 (2020).

³⁹ *See St. Lucie*, CLI-89-21, 30 NRC at 329-30.

the challenged LAR requests a modification to the planned design of the physical plant that has been labeled as Tier 1 information of the type the NRC Staff has indicated is “the most significant to safety.” SRP at 14.3-16; *see supra* note 15.

The Commission has stated that “[i]n ruling on claims of ‘proximity standing,’ we decide the appropriate radius on a case-by-case basis.” *Peach Bottom*, CLI-05-26, 62 NRC at 580. In their declarations, BREDL’s members state that they live within 50 miles of the site of Vogtle 3 and provide a residence address, without further elaboration as to the specific distance. *See, e.g.*, Colclough Decl. ¶ 2. In its petition, BREDL states that the individuals “who signed declarations of standing live well within 25 miles of Plant Vogtle; in fact, some are within 5 miles.” BREDL Petition at 5. BREDL further notes that in a case involving an application for a power uprate, representational standing was granted to an organization with members who lived within 15 miles of the plant. *Id.* at 4 (citing *Entergy Nuclear Vermont Yankee and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 553-54 (2004)). Neither SNC nor the Staff has argued that BREDL’s members live beyond BREDL’s stated radius from the Vogtle plant.

And while, as we observed above, decisions regarding standing in prior proceedings relating to a facility are not dispositive for a subsequent proceeding, we note that two 2016 licensing board decisions found BREDL had standing to challenge other SNC license amendment requests for changes to Vogtle 3 design information. One concerned containment internal structural wall thickness requirements and the other involved the hydrogen ignitor subsystem design, both of which implicated Tier 1 information changes.⁴⁰ Neither SNC nor the NRC Staff discussed those cases in their answers, but during the July 2020 oral argument SNC did seek to distinguish them. SNC’s counsel asserted the two cases were based on licensing board determinations concerning a “plausible, credible risk of offsite consequences,” as opposed to being “either speculative or ha[ving] such low probability that they really weren’t real offsite consequences.” Tr. at 49. In contrast, SNC asserts, BREDL here “has failed to even try to connect the offsite consequences it alleges with the particular change in question.” *Id.* SNC claims that Contention Two and the supporting affidavit from its expert Arnold Gundersen allege an injury that “is much more in the nature of a failure of the nuclear island foundation that causes some severe damage to the nuclear island structure itself due to settlement rather than the walls interacting during a safe shutdown earthquake.” Tr. at 49-50. According to SNC, to establish the

⁴⁰ *See Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-16-10, 84 NRC 17, 49 (2016), *aff’d on other grounds*, CLI-17-2, 85 NRC 33, 38 n.23 (2017); *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-16-5, 83 NRC 259, 265 & n.7, 276 (2016).

basis for standing, “they’ve at least got to tie their offsite consequences to the particular change being requested” regarding the minimum distance between the walls of the auxiliary and annex buildings. *Id.* at 50.

As the Staff asserted,⁴¹ the member declarations in this instance, when considered along with BREDL’s pro se petition, show that there are sufficient allegations of increased risk of harm associated with the amendment to demonstrate the basis for its representational standing through the application of the proximity presumption.⁴² Whether the mechanism for triggering that harm, as outlined in BREDL’s contentions, is viable and within the scope of the amendment is a matter that goes to the admissibility of the contentions challenging the amendment. Our decision on standing, however, is not a ruling on either the admissibility or the merits of BREDL’s contentions.⁴³ Thus, our standing ruling does not mean that BREDL, by focusing on settlement of the nuclear island foundation, has proffered an admissible contention. Rather, it means only that BREDL’s assertions have satisfied the requirements governing standing, with the result that we move on to consider the admissibility of its contentions.

III. CONTENTION ADMISSIBILITY

A. Pleading Requirements for an Admissible Contention

To participate as a party in this proceeding, in addition to establishing its standing, *see* section II.B *supra*, BREDL also must proffer at least one contention that meets the Commission’s admissibility requirements found in 10 C.F.R. § 2.309(f)(1). For a proposed contention to be admitted for further litigation, it 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;

⁴¹ *See* Staff Answer at 15; *see also* Tr. at 66.

⁴² *See Vogtle*, LBP-16-5, 83 NRC at 271-74. In this regard, we note that the SNC LAR analysis described the safety significance of the building walls in question. *See supra* note 9 and accompanying text. Moreover, in response to a Board hypothetical question regarding the safety impacts of a wall interaction and breach resulting from an inability to maintain the required gap, SNC counsel indicated that it was not SNC’s position that there would be no safety consequences from such an event. *See* Tr. at 48.

⁴³ *See Vogtle*, LBP-16-5, 83 NRC at 274 & n.78 (citing *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), LBP-03-12, 58 NRC 75, 93 (2003) (concluding that an “obvious potential for offsite consequences . . . is not in itself sufficient to support an admissible 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;

(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

. . . .

10 C.F.R. § 2.309(f)(1)(i)-(vi). These six criteria aim to “focus litigation on concrete issues and result in a clearer and more focused record for decision.” Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2202 (Jan. 14, 2004) [hereinafter 2004 Part 2 Changes]. The petitioner bears the burden to satisfy each of these criteria,⁴⁴ while a failure to comply with any of the requirements constitutes grounds for rejecting a proposed contention.⁴⁵ And with regard to a pro se petitioner such as BREDL, while the Commission has stated that “[a] board may consider the readily apparent legal implications of a *pro se* petitioner's arguments, even if not expressly stated in the petition,” it also has indicated that “[t]his authority is limited in that the petitioner — not the board — must provide the information required to satisfy our contention admissibility standards.” *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-18-4, 87 NRC 89, 96-97 (2018).

In particular regarding the dictates of section 2.309(f)(1)(iii), a proposed contention must be rejected if it raises issues beyond the scope of the proceeding as established by the Commission's hearing notice. See *Public Service Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976). Thus, a proposed contention challenging a

⁴⁴ See *Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-23, 82 NRC 321, 329 (2015) (“[I]t is Petitioners' responsibility, not the Board's, to formulate contentions and to provide 'the necessary information to satisfy the basis requirement' for admission.”) (quoting Statement of Policy on Conduct of Adjudicatory Proceedings, CLI-98-12, 48 NRC 18, 22 (1998)).

⁴⁵ See 2004 Part 2 Changes, 69 Fed. Reg. at 2221; see also *Private Fuel Storage*, CLI-99-10, 49 NRC at 325.

license amendment must confine itself to the “health, safety or environmental issues fairly raised by [the license amendment].”⁴⁶ *Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 624 (1981). Consequently, challenges to the current licensing basis of a plant, rather than to the requested facility modification, are not within the permissible scope of a license amendment proceeding and are instead properly lodged as matters warranting enforcement action pursuant to the process prescribed by 10 C.F.R. § 2.206.⁴⁷

B. BREDL Contentions

1. Contention One

BREDL frames its first contention as follows:⁴⁸ “CONTENTION ONE: License Revocation for Materially False Statements.” BREDL Petition at 9 (emphasis omitted). In asserting that SNC’s Vogtle 3 combined license should be revoked for materially false statements, BREDL claims the following phrase

⁴⁶ In this regard, NRC regulations define the Commission’s scope of review of a license amendment application broadly: “In determining whether an amendment to a license, construction permit, or early site permit will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses, construction permits, or early site permits to the extent applicable and appropriate.” 10 C.F.R. § 50.92(a). As summarized by SNC, the “applicant must satisfy the requirements of 10 [C.F.R.] § 50.90 and demonstrate that the requested amendment meets all applicable regulatory requirements and acceptance criteria and does not otherwise harm the public health and safety or the common defense and security.” SNC Answer at 8-9 (quoting *Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 1), LBP-02-14, 56 NRC 15, 35 (2002)).

⁴⁷ See, e.g., *Seabrook*, CLI-19-7, 90 NRC at 14 (“If [the petitioner] seeks to challenge the ongoing operation of [the facility], it may file a petition seeking enforcement action under 10 C.F.R. § 2.206.”).

⁴⁸ Relative to the preparation of its contentions, BREDL asserts that its “review and analysis [has] been seriously hampered due to the lack of any complete engineering analyses or accurate information provided for review by SNC.” BREDL Petition at 6. Further, to highlight its efforts to try to gain access to such information, BREDL points to its outstanding Freedom of Information Act (FOIA) request seeking information associated with a May 26, 2020 NRC Staff audit report in which the Staff indicated it used non-docketed information obtained from SNC in assessing the SNC LAR. See BREDL Reply at 1-2 & nn.1, 4; Tr. at 24, 73; see also Memorandum from Cayetano Santos, Jr., Project Manager, Vogtle Project Office, Office of Nuclear Reactor Regulation (NRR), to Victor Hall, Chief, NRR Vogtle Project Office at 2 (May 26, 2020) (ADAMS Accession No. ML20141L698). According to BREDL, because it has been unable to gain access to these documents, it “reserve[s] the right to modify this [petition and Arnold Gundersen’s supporting declaration] when the appropriate information is finally placed in ADAMS for public review as required by federal statute,” BREDL Petition at 7, an apparent reference to the opportunity afforded BREDL under the agency’s rules of practice to submit new or amended contentions regarding information not previously available, see 10 C.F.R. § 2.309(c).

in the LAR is not true: “In order to facilitate the construction of the nuclear island and adjacent buildings” *Id.* at 10 (quoting Seismic Gap Analysis at 4) (omitting emphasis added). BREDL also points out that its expert,⁴⁹ Arnold Gundersen, alleges that this is a false justification by SNC because “[t]he construction of the walls and foundations in question were completed at least a half-decade ago, therefore, it is technically impossible to ‘facilitate construction’ on structures that were completed at least five years earlier and that fall under strict seismic regulatory guides.” *Id.* at 11 (quoting Gundersen Decl. at 5). BREDL theorizes that there are only three possible explanations for this perceived inconsistency: “1) Westinghouse knew and did not inform SNC; 2) Both Westinghouse and SNC knew and did not inform NRC in a timely fashion; or 3) Westinghouse, SNC and NRC staff knew and delayed seeking amendment of the license under an expedited schedule in order to limit scrutiny.” *Id.*; *see* Gundersen Decl. at 6. BREDL claims that the true justification for the LAR is “the discovery that walls and the entire foundation of the Auxiliary Building have inexplicably moved, sunk and become distorted.” BREDL Petition at 9.

Contention One does not challenge the LAR itself, but rather the timing and SNC’s underlying motivations for the LAR. Moreover, as a means to address the purported wrongdoing that the LAR reflects, BREDL broadly seeks to revoke SNC’s Vogtle 3 COL, a remedy BREDL itself seemingly acknowledged at the July 2020 oral argument is beyond the scope of the Board’s authority in this proceeding. *See* Tr. at 19 (BREDL’s representative stating “I’ve come to understand that license revocation may be outside of the hand of the Atomic Safety [and] Licensing Board in this matter.”); 10 C.F.R. § 2.309(f)(1)(iii). Indeed, such a claim is more appropriate for a 10 C.F.R. § 2.206 petition.⁵⁰

⁴⁹ We note as well that SNC has challenged Mr. Gundersen as lacking sufficient expertise in seismic and structural issues to serve as an expert witness in support of BREDL’s hearing petition, *see* SNC Answer at 11-12, a claim BREDL vigorously contests, *see* BREDL Reply at 6-8. Given we conclude in this decision that both of BREDL’s proffered contentions are inadmissible, we need not resolve this dispute.

⁵⁰ *See Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-674, 15 NRC 1101, 1103 (1982) (indicating because licensing board lacks jurisdiction to suspend previously issued construction permit, intervenor seeking such relief must file 10 C.F.R. § 2.206 petition). The NRC Staff notes in its answer that it referred BREDL’s petition to the NRC’s 10 C.F.R. § 2.206 coordinator should BREDL choose to pursue a remedy under this separate process. *See* Staff Answer at 21 n.95. BREDL indicated that it was contacted by the 10 C.F.R. § 2.206 coordinator and intends to pursue that separate route. *See* BREDL Reply at 2; Tr. at 26-27.

In addition, the Staff indicated that because BREDL’s claims allege improper conduct on the part of a licensee and by agency employees, it also has forwarded those concerns for consideration under the Staff’s allegations management program and for review by the agency’s Office of the Inspector General. *See* Staff Answer at 18 n.86, 19 n.89. According to BREDL, the allegations

(Continued)

Furthermore, BREDL's Contention One fails to meet other contention admissibility standards under 10 C.F.R. § 2.309(f)(1). As SNC points out, while Mr. Gundersen asserts that SNC has improperly withheld information for a half-decade regarding the wall construction anomaly to facilitate construction of Vogtle 3, he provides no support for his alleged timeline of construction at Vogtle 3. Indeed, SNC argues, BREDL's timeline claim is easily contradicted by publicly-accessible information showing that "SNC has only neared completion of the auxiliary building within the last quarter of 2019 and first quarter of 2020. Accordingly, the identified as-built nonconformance could not have been identified until this construction was complete."⁵¹ BREDL has provided nothing to contradict this statement or to explain why it is inaccurate. Contention One thus also cannot be admitted because it lacks adequate factual or expert opinion support as is required by section 2.309(f)(1)(v).

2. Contention Two

BREDL denotes its second contention as follows: "CONTENTION TWO: Basemat, Foundation and Construction Factors Create Unacceptable Operational Risk to Public Health and Safety." BREDL Petition at 12 (emphasis omitted). And in detailing Contention Two, BREDL asserts:

Construction of Vogtle Unit 3 should be stopped until [SNC]: 1) reevaluates the structural integrity of the entire Nuclear Island, 2) performs a complete root cause analysis of the new stresses on the basemat upon which the Nuclear Island on Vogtle Unit 3 is being constructed, 3) presents the complete analyses and root cause analysis information in public licensing hearings, and 4) an entirely new licensing review and full analysis of the new stress conditions placed on other components on the site that are no longer level as a result of the disproportionate sinking have been concluded and subjected to satisfactory independent engineering review.

Id. at 12-13. Underlying this contention is BREDL's concern that "the so-called seismic gap [is] the result of foundation problems which have plagued the construction of Vogtle 3 and 4 reactors since the very beginning of [the] construction project." *Id.* at 13-14. BREDL also emphasizes that its expert, Mr. Gundersen, claims that the "differential downward deflection forming at the

referral resulted in a June 4, 2020 letter from an NRC allegations program team leader finding "that there was 'no specific indication of wrongdoing' with regard to the timeliness of SNC's reporting to NRC on the stability of the Nuclear Island basemat." BREDL Reply at 2 & n.3.

⁵¹ SNC Answer at 14-15 & nn.58-59 (citing Staff 2019 and 2020 inspection reports indicating portion of auxiliary building that is the subject of February 7, 2020 SNC LAR was under construction in the 2019-2020 timeframe).

center of the Vogtle foundation . . . is called ‘dishing’ or ‘cupping’ and . . . was never anticipated and therefore was not considered in Vogtle’s original design.” *Id.* at 15; *see* Gundersen Decl. at 9. Further, Mr. Gundersen states that although “[t]he “as-built” condition of the wall in question was correct at the time it was built . . . the wall moved after it was constructed because the [nuclear island] is sinking.” Gundersen Decl. at 8. And building on Contention One, BREDL argues that SNC “is attempting to obfuscate the true facts.” BREDL Petition at 14. Specifically, BREDL argues that SNC failed to address the following in the LAR:

1) The foundation of the Seismic Category 1 Nuclear Island has settled “more at the center and less at the perimeter”; 2) A wall has moved closer to the [nuclear island]; 3) That same wall now is not level, and is leaning; 4) If the foundation of the NI has settled, “more at the center and less at the perimeter,” other systems and structures must also have become deformed yet have not been evaluated.

Id. at 15 (quoting Seismic Gap Analysis at 8). Therefore, BREDL maintains that “the acceptance criteria of the ITAAC in the combined license are not capable of being met” and there is an increased “likelihood of seismic failure and meltdown.” *Id.* at 16.

As set forth in the *Federal Register* hearing opportunity notice, this license amendment proceeding is narrowly focused solely on the requested action — a proposed localized reduction in the seismic gap between the Vogtle 3 auxiliary building and the annex building. *See* Vogtle 3 Hearing Notice, 85 Fed. Reg. at 13,945. Yet, BREDL does not raise concerns with this specific action. Instead, BREDL raises claims about the “settlement” of the entire nuclear island and seeks the remedy of stopping construction at Vogtle 3. Neither BREDL’s broad claims nor the broad remedy it seeks is within the scope of this narrow license amendment proceeding, as required by 10 C.F.R. § 2.309(f)(1)(iii).

At the same time, contrary to 10 C.F.R. § 2.309(f)(1)(vi), BREDL does not show a genuine dispute with the LAR on a material issue. As SNC points out, the LAR does not “suggest or indicate that either the [gap] nonconformance or the modification is in response to settlement issues.” SNC Answer at 20. But even if this LAR did ask for a change in accepted differential settlement for Vogtle 3, which it does not, BREDL’s assertions that settlement was not considered in the design of Vogtle 3 are unsupported and do not show a genuine dispute. The UFSAR for Vogtle 3 *does* contain values for total and differential settlement.⁵² The UFSAR acknowledges that differential settlement could impact

⁵² UFSAR Tier 2, at 2.5-173 (ADAMS Accession No. ML19171A055); *see also id.* at 2.5-216, tbl. 2.5-1 (Limits of Acceptable Settlement without Additional Evaluation); Tier 1 Information, (Continued)

the tilt of the nuclear island buildings and describes the limit of acceptable differential settlement.⁵³ And SNC has not sought to alter these settlement findings.

Moreover, with its unsupported statements that “[a] wall has moved closer to the [nuclear island]” and “[t]hat same wall now is not level, and is leaning,” BREDL Petition at 15, BREDL likewise does not show a genuine dispute with the LAR. As explained in section I.B *supra*, the settlement evaluation section of the LAR indicates that the “nuclear island basemat has deflected more in the center and less at the perimeter which would tend to cause the perimeter walls to *lean towards* the center of the nuclear island. Theoretically, this suggests that the nuclear island tends to tilt *away* from the annex building.” Seismic Gap Analysis at 8 (emphasis added). The LAR goes on to say that “the foundation deflection contour of the annex building is uniform in the vicinity of the nuclear island, which does not result in tilt of the perimeter structures towards the nuclear island.” *Id.* BREDL, however, does not acknowledge this contradiction with its assertions or otherwise provide support for its position that the wall is acting in a way contrary to the physics precept described in the LAR.

Additionally, contrary to 10 C.F.R. § 2.309(f)(1)(v), BREDL does not provide a concise statement of the alleged facts or expert opinions that support its position. “Neither mere speculation nor bare conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention.”⁵⁴ While BREDL cites Mr. Gundersen’s statements to bolster its contention, neither BREDL nor Mr. Gundersen referenced any of “the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue [at a hearing],” which is required under section 2.309(f)(1)(v). Mr. Gundersen makes bare assertions like “[u]sing the Generic SASSI bounding analysis and linear interpolation are completely inappropriate and places public health at risk, because both the Generic SASSI bounding analysis and linear interpolation are based upon the mathemat-

at 5.0-3, tbl. 5.0-1 (Site Parameters); WEC, AP1000 [DCD] at 3.8-69 (rev. 19 June 21, 2011) (Tier 2 Chapter 3, Design of Structures, Components, Equipment & Systems) (“The site conditions considered in the evaluation provide reasonable bounds on construction induced stresses in the basemat. Accordingly, the basemat design is adequate for practically all soil sites and it can tolerate major variations in the construction sequence without causing excessive deformations, moments and shears due to settlement over the plant life.”) (ADAMS Accession No. ML11171A431).

⁵³ See UFSAR Tier 2, at 2.5-173. The total and differential settlement values are found in plant-specific Tier 1, Table 5.0-1, and plant-specific Tier 2, Tables 2.0-201 and 2.5-1. See Tier 1 Information, at 5.0-3, tbl. 5.0-1; UFSAR Tier 2, at 2.08, tbl. 2.0-201 (Comparison of AP1000 DCD Site Parameters and Vogtle Electric Generating Plant Units 3 and 4 Site Characteristics) (ADAMS Accession No. 19171A052); *id.* at 2.5-216, tbl. 2.5-1.

⁵⁴ *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-07-3, 65 NRC 237, 253 (2007) (citing *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)).

ical assumption of a level foundation.” Gundersen Decl. at 13. Mr. Gundersen, however, fails to cite parts of the LAR with which he disagrees. Nor does he explain why the results of the SASSI analysis are insufficient to support the LAR’s conclusion that a greater than one-inch gap between the nuclear island and annex building will still be maintained during an SSE event. Similarly, while Mr. Gundersen asserts numerous times that SNC “admits that the Nuclear Island (NI) foundation is sinking disproportionately” or “has known and indeed spent years measuring the disproportional settling of the Nuclear Island,” he fails to cite to any specific instances in which SNC has made such statements, much less that SNC “has known . . . [about these matters for] years.” Gundersen Decl. at 10, 11; *see id.* at 6, 7, 15. Without supporting citations, as required by section 2.309(f)(1)(v), these claims are nothing more than mere speculation.

Finally, to the extent that BREDL is attempting to challenge any of the Vogtle 3 ITAAC when it alleges “the LAR show *prima facie* the acceptance criteria of the ITAAC in the combined license are incapable of being met,” BREDL Petition at 16, its contention is outside the scope of this proceeding. BREDL cites to 10 C.F.R. § 52.103(b) as support for why Contention Two shows a genuine dispute with the licensee. *Id.* Section 52.103(b), however, lists the requirements for requesting a hearing under section 52.103(a) to challenge whether a facility as constructed complies with the acceptance criteria in the COL applicable to that facility. BREDL does not show how its ITAAC challenge is within the scope of this LAR proceeding, which does not fall within the ambit of section 52.103,⁵⁵ or even list which ITAAC it specifically challenges.⁵⁶

In sum, because BREDL fails to meet one or more of the six criteria for contention admissibility, Contention Two cannot be admitted for further litigation in this proceeding.

IV. CONCLUSION

For the reasons we detail above in section II.B, we conclude that BREDL’s

⁵⁵ The contention admissibility standard that requires a petitioner to show a genuine dispute on a material issue of law or fact specifically excludes proceedings under 10 C.F.R. § 52.103. *See* 10 C.F.R. § 2.309(f)(1)(vi). Instead, section 53.103 requires that a petitioner seeking to challenge the acceptance criteria for a COL must establish a *prima facie* case that such criteria have not been, or will not be, met, *see id.* § 53.103(b); *see also id.* § 2.309(f)(1)(vii), a pleading threshold that BREDL clearly has not reached in this instance.

⁵⁶ Additionally, we note that for Vogtle 3, there was an April 13, 2020 deadline for hearing requests posing a challenge associated with any of the Vogtle 3 ITAAC, *see* Commission Order, *Southern Nuclear Operating Co. (Vogtle Electric Generating Plant, Unit 3)*, Docket No. 52-025 (Apr. 9, 2020) at 2 (unpublished), which raises a substantial question about the timeliness of any ITAAC-based challenge by BREDL here.

hearing request in this license amendment proceeding provides sufficient information to establish standing to intervene. BREDL has not, however, set forth an admissible contention because, as we outline in section III.B *supra*, it failed to meet the standards for contention admissibility in 10 C.F.R. § 2.309(f)(1). Accordingly, its hearing request must be denied.

For the foregoing reasons, it is this tenth day of August 2020, ORDERED, that:

1. The May 11, 2020 hearing request of petitioners Blue Ridge Environmental Defense League and its chapter Concerned Citizens of Shell Bluff is *denied* and this proceeding is *terminated*.

2. In accordance with the provisions of 10 C.F.R. § 2.311, as this memorandum and order rules upon an intervention petition, any appeal to the Commission from this memorandum and order must be submitted within 25 days after this issuance is served.

THE ATOMIC SAFETY AND
LICENSING BOARD

G. Paul Bollwerk, III, Chairman
ADMINISTRATIVE JUDGE

Dr. Sue H. Abreu
ADMINISTRATIVE JUDGE

Dr. Gary S. Arnold
ADMINISTRATIVE JUDGE

Rockville, Maryland
August 10, 2020

Additional Views of Bollwerk, Administrative Judge

While I agree fully with the determinations reached by the Board regarding the standing and contention admissibility issues presented in this proceeding by BREDL's hearing petition, because of my concern about the issue of document access raised by BREDL in its petition, *see* note 48 of the Board's decision, I wish to express some additional views.

BREDL asserts that despite entreaties to the NRC Staff, including an FOIA request, it has been unable to gain access to documentary material that SNC provided to the Staff for the Staff's review in determining the sufficiency of the SNC LAR at issue here, including information referenced by the Staff in a May 26, 2020 audit report concerning technical support documentation for the LAR. *See* BREDL Petition at 6-7. According to BREDL, it should have, but has not, been provided with that information and afforded an opportunity to assess its significance and incorporate the material into its challenges to the SNC amendment request. *See id.*; BREDL Reply at 1 n.1, 2.

Given the Commission's "strict by design" standards for contention admissibility and the concomitant expectation placed upon intervenors, *pro se* or otherwise, to provide credible support for the contentions they proffer,¹ petitioner access to relevant information regarding a license application is a matter of concern. And in the case of BREDL's claim for access to additional SNC documents to frame its contentions, two different timeframes seemingly would need to be considered: (1) SNC information that was part of the Staff review process associated with the docketing of the SNC license application request; and (2) SNC material that becomes available following docketing of the application. Agency regulations suggest this differentiation, indicating that upon receipt an application for a licensing action is subject to an initial Staff review to ensure it is "complete and acceptable for docketing." 10 C.F.R. § 2.101(a)(3). Then, upon docketing, the Staff's detailed technical review of the application begins along with the application's receipt and availability, and any appropriate hearing opportunity, being noticed in the *Federal Register*. *See id.* § 2.101(c).

As referenced in the Board's decision, a focus of BREDL's document access concern is six SNC documents listed in the Staff's May 26, 2020 audit report. According to the report, these documents, which were made available for Staff review as non-docketed information via an SNC/WEC electronic reading room, were used by the Staff as part of the post-docketing application review process

¹ *AmerGen Energy Co.* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 118 (2006) (quoting *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001)).

to verify the information and conclusions in the SNC licensing request.² While consistent with recently revised Staff guidelines,³ the Staff's use of that portal to access this information apparently means those applicant documents did not become agency records accessible to BREDL as part of the licensing docket for the SNC application (or seemingly via its FOIA request).⁴ Yet, consistent with agency adjudicatory practice, such applicant documents likely would be subject to disclosure in this proceeding only as discoverable material if a pertinent BREDL contention were to be admitted.⁵

As to the NRC Staff's access to the SNC information the Staff used to make a docketing decision about the SNC application, this seemingly would be shaped by the Staff's guidance regarding its application acceptance/docketing process. Under that guidance, the Staff is to consider whether (1) the application is complete in scope, such that there are no "significant analyses or evaluations missing" from the application; and (2) the information and analyses provided in support of the application evidence any "significant, obvious problems."⁶ Those

² See Memorandum from Cayetano Santos, Jr., Project Manager, NRR Vogtle Project Office, to Victor Hall, Chief, NRR Vogtle Project Office at 2 (May 26, 2020) (ADAMS Accession No. ML20141L698) [hereinafter Staff Audit Report]; *id.*, encl. at 2, tbl. 1 (Regulatory Audit Summary for [LAR]: Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements (LAR-20-001)).

³ See NRR, NRC, Regulatory Audits, NRR Office Instruction LIC-111, at 8, 9 (rev. 1 Oct. 31, 2019) (indicating that in conducting a licensing audit the Staff may use an online portal to access non-docketed information that should not permit the documents to be downloaded or printed so as to become agency records, with any documents reviewed required to be listed in the audit report) (ADAMS Accession No. ML19226A274) [hereinafter LIC-111 Rev. 1].

⁴ While NRC Staff use of non-docketed information in performing a license review audit at a licensee facility is a longstanding practice, Staff guidelines sanctioning the use of remote/portal access to such documents for auditing purposes are relatively recent. Compare NRR, NRC, Regulatory Audits, NRR Office Instruction LIC-111, at 56 (Dec. 29, 2008) (non-docketed licensee information may be reviewed at any time during an audit, but "[i]n general, non-docketed information should not be removed from the audit site.") (ADAMS Accession No. ML082900195), with LIC-111 Rev. 1, at 8, 9 (Oct. 2019 revision discussing protocols for portal access to non-docketed information). As was previously the case with onsite audits, such a portal arrangement has the advantage of reducing agency resource expenditures for implementing security measures to protect nonpublic licensee information from disclosure and, presumably, responding to FOIA requests (such as that lodged by BREDL, see note 48 in the Board's decision) that otherwise would encompass such material if held by the agency. In addition, as apparently was the case in this proceeding, see Staff Audit Report at unnumbered p. 2 (indicating the Staff "conducted an audit from March 10 to April 30, 2020, via the [WEC] electric reading room"), the process allows access to non-docketed licensee information without having to travel to the licensee facility.

⁵ See *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1263 (1982) (indicating discovery on contention's subject matter can be obtained once the contention is admitted for litigation).

⁶ NRR, NRC, Acceptance Review Procedures, NRR Office Instruction LIC-109, app. B, at 9
(Continued)

instructions also indicate that if the scope of the application is incomplete or the information is insufficient, the application must be considered unacceptable such that it should be returned to the applicant or an additional opportunity provided to supplement the application before docketing. *See* Acceptance Review Procedures, app. B, at 9 (Guide for Performing Acceptance Reviews). On the other hand, if the application is found acceptable for docketing, the instructions indicate that determination should be documented in an e-mail or letter stating that the Staff found that the application provides “technical information in sufficient detail to enable the NRC staff to complete its detailed technical review and make an independent assessment regarding the acceptability of the proposed amendment in terms of regulatory requirements and the protection of public health and safety and the environment.” *Id.*, app. C, at C-9 (Guide for Performing Acceptance Reviews: Example Letters). The Staff issued such a letter in this instance.⁷

Additionally, the acceptance review instructions indicate that any information deficiency in an application is to be cured by contacting “the licensee or applicant to communicate the information needed and understand their course of action”; establishing a “date-specific deadline by which the licensee or applicant must submit the information”; and issuing “a letter to the licensee or applicant identifying the information needed and the verbally established deadline.” *Id.* at 6. This guidance indicating that information needed for docketing review should be within the hands of the agency apparently was followed here as well as the SNC LAR, the only applicant document utilized by the Staff for its docketing determination,⁸ was docketed information available to BREDL.

Thus, in contrast to the NRC Staff’s recently revised post-docketing license application review instructions that permit the Staff to utilize non-docketed information accessed via an applicant portal, nothing in the acceptance review instructions appears to authorize the Staff when making a docketing decision to consider applicant information not in the possession of the agency. All this suggests that in preparing a hearing request challenging a license application, a

(rev. 2 Jan. 9, 2017) (ADAMS Accession No. ML16144A521) [hereinafter Acceptance Review Procedures].

⁷ *See* Letter from Cayetano Santos, Project Manager, NRR Vogtle Project Office, to Brian H. Whitley, Director, Regulatory Affairs, SNC (Feb. 21, 2020) (letter embedded in e-mail from Cayetano Santos to Yasmeeen N. Afafef & Brian Whitley (Feb. 21, 2020 8:37 ET)) (ADAMS Accession No. ML20052H043) [hereinafter Staff Docketing Letter].

⁸ According to the NRC Staff, this Staff license acceptance review was based only on the SNC application without reviewing any additional documents, *see* Tr. at 70; *see also* Staff Docketing Letter at unnumbered p. 2 (advising that “[t]he staff has reviewed your application” and concluded it provides sufficient technical information for docketing), including the seismic analyses and settlement survey data cited in the application, *see* section I.B of the Board’s decision. As SNC indicated, those documents were not publicly available information. *See* Tr. at 60.

petitioner such as BREDL, while arguably not entitled to access more applicant information than the Staff had before it in making its docketing determination, also would not be entitled to any less, either by virtue of the information being publicly available in the agency's licensing docket (or otherwise publicly accessible in its ADAMS document management system) or via an appropriate protective order in the case of any docketed non-public information.⁹ *See, e.g.,* Oklo, Inc.; Oklo Power LLC, 85 Fed. Reg. 39,214, 39,214, 39,216-18 (June 30, 2020) (detailing procedures by which potential parties to a hearing on a license application can access public and non-public information relating to the docketed application).

While in this instance the access afforded BREDL to SNC documentary material seemingly was in accord with agency regulatory procedures and the Staff's own review process guidance,¹⁰ for the hearing opportunity afforded "interested persons" by the Atomic Energy Act to remain meaningful, it also is apparent that the Staff must continue to "turn square corners" in ensuring hearing requestors have appropriate access to applicant information provided to the agency for use in the license application review process.¹¹

⁹ It remains true, of course, that following application docketing any additional applicant-submitted information received and docketed by the agency prior to completion of the adjudicatory proceeding generally would be eligible for consideration in the context of a new or amended contention submitted pursuant to 10 C.F.R. § 2.309(c), or as evidentiary hearing support in connection with an admitted contention.

¹⁰ Agency caselaw indicates that a Staff docketing decision, which presumably includes its conclusion about how much applicant information the Staff requires to reach that determination, is one for which the Staff is afforded considerable discretion. *See, e.g., Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), LBP-08-9, 67 NRC 421, 444 & n.138 (2008) (citing *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), LBP-98-26, 48 NRC 232, 242 (1998); *Curators of the University of Missouri*, CLI-95-8, 41 NRC 386, 395-96 (1995); *New England Power Co.* (NEP Units 1 and 2), LBP-78-9, 7 NRC 271, 280-81 (1978)); *Nuclear Management Co., LLC* (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 743 & n.14 (2005) (citing *NEP*, LBP-78-9, 7 NRC at 280)). At the same time, as the Staff's own license application acceptance guidance suggests, *see supra* notes 6-7 and accompanying text, a Staff decision to docket an application that contained no analysis of the legal/technical basis for a licensing request, and thus no documentary basis for interested persons to assess the adequacy of the application, would sorely test the boundaries of such Staff discretion, as presumably would a change in the Staff's docketing process guidance that, through the use of portal technology or otherwise, sought to limit petitioner access to relevant applicant information needed by the Staff to make a docketing determination.

¹¹ *Charlissa C. Smith* (Denial of Senior Reactor Operator License), LBP-13-3, 77 NRC 82, 97 & n.76 (2013) (citing *St. Regis Paper Co. v. United States*, 368 U.S. 208, 229 (1961) (Black, J., dissenting) ("It is no less good morals and good law that the Government should turn square corners in dealing with the people than that the people should turn square corners in dealing with their government.")).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ronald M. Spritzer, Chairman
Nicholas G. Trikouros
Dr. Sekazi K. Mtingwa

In the Matter of

Docket No. 50-443-LA-2
(ASLBP No. 17-953-02-LA-BD01)

NEXTERA ENERGY SEABROOK, LLC
(Seabrook Station, Unit 1)

August 21, 2020

This proceeding arose from a license amendment request (LAR) filed by NextEra Energy Seabrook, LLC (NextEra), regarding the operating license for Seabrook Unit 1, in Seabrook, New Hampshire. The LAR revised the Unit 1 Updated Final Safety Analysis Report to include methods for analyzing the impact of concrete degradation caused by the alkali-silica reaction affecting seismic Category I reinforced concrete structures at Seabrook. C-10 Research & Education Foundation, Inc. (C-10) filed a petition for leave to intervene and a request for a hearing in response to the LAR. The Board found that C-10 has standing to intervene and submitted five admissible contentions, Contentions A, B, C, D, and H, which were reformulated by the Board into one contention. After an evidentiary hearing, the Board found that the license amendment satisfied the reasonable assurance standard and applicable regulatory requirements, but only with the addition of four license conditions. With those conditions, the Board resolved the reformulated contention in favor of NextEra.

ATOMIC ENERGY ACT: LICENSE AMENDMENTS

Pursuant to the Atomic Energy Act, applicants seeking license amendments

must demonstrate that the amended license “provide[s] adequate protection to the health and safety of the public.” Atomic Energy Act § 182, 42 U.S.C. § 2232; *see Union of Concerned Scientists v. NRC*, 824 F.2d 108, 118 (D.C. Cir. 1987); *Carstens v. NRC*, 742 F.2d 1546, 1557 (D.C. Cir. 1984); *Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-22, 82 NRC 310, 316 (2015); *DTE Electric Co.* (Fermi Nuclear Power Plant, Unit 3), CLI-15-4, 81 NRC 221, 231 n.49 (2015).

ATOMIC ENERGY ACT: LICENSE AMENDMENTS

The Commission requires that “a license amendment request must provide sufficient documentation and analysis to show that the licensee has complied with the relevant requirements, thereby demonstrating that the amended license will continue to provide reasonable assurance of adequate protection of public health and safety.” *Palisades*, CLI-15-22, 82 NRC at 316.

ATOMIC ENERGY ACT: LICENSE AMENDMENTS

Although the Commission has not defined “adequate protection,” the phrase is synonymous with “no undue risk.” *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 119 (D.C. Cir. 1987).

ATOMIC ENERGY ACT: SAFETY FINDINGS

OPERATING LICENSE AMENDMENTS: RESPONSIBILITY OF LICENSING BOARD

The Commission stated that the “[r]easonable assurance” [standard] is not quantified as equivalent to a 95% (or any other percent) confidence level but is based on sound technical judgment of the particulars of a case and on compliance with our regulations.” *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 263 (2009); *see AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-07-17, 66 NRC 327, 340 (2007), *aff’d*, CLI-09-7, 69 NRC 235 (2009); *see also N. Anna Envtl. Coal. v. NRC*, 533 F.2d 655, 667-68 (D.C. Cir. 1976).

ATOMIC ENERGY ACT: SAFETY FINDINGS

OPERATING LICENSE AMENDMENTS: RESPONSIBILITY OF LICENSING BOARD

RULES OF PRACTICE: CONTENTIONS (SCOPE)

A licensing board may consider alternative methodologies of compliance if done so to determine if the chosen methodologies are adequate. *See Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-88-13, 27 NRC 509, 548-49, *aff'd in part, vacated in part, and remanded*, ALAB-905, 28 NRC 515 (1988); *see also Palisades*, CLI-15-22, 82 NRC at 317-18.

ATOMIC ENERGY ACT: SAFETY FINDINGS

OPERATING LICENSE AMENDMENTS: RESPONSIBILITY OF LICENSING BOARD

In general, the Commission undertakes a case-by-case approach in making a reasonable assurance determination, considering all relevant facts and circumstances to reach a sound technical judgment that verifies an applicant's compliance with all applicable regulations. *Oyster Creek*, CLI-09-7, 69 NRC at 262 n.143; *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-14, 71 NRC 449, 465-66 (2010).

ATOMIC ENERGY ACT: REQUIREMENTS OF LICENSE

OPERATING LICENSE AMENDMENTS: RESPONSIBILITY OF LICENSING BOARD

In the absence of evidence to the contrary, NRC does not presume that a licensee will violate agency regulations whenever the opportunity arises. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-9, 53 NRC 232, 235 (2001).

EVIDENCE: CREDIBILITY; ADMISSIBILITY (EXPERT TESTIMONY); EXPERT TESTIMONY, EXPERT WITNESS

RULES OF PRACTICE: EXPERT WITNESSES

An expert who does not review every document in a proceeding may nonetheless be qualified to proffer expert testimony since any knowledge gaps based on a failure to review certain documentation goes to the weight of testimony, not admissibility. *Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 422 (5th Cir.

1987); *accord Goodrich Ave., LLC v. Sw. Water Co.*, 891 F. Supp. 2d 1364, 1382 (M.D. Ga. 2012).

LICENSE CONDITIONS

Any license conditions imposed on a license amendment will apply to the initial and renewed operating license periods, if applicable. *See NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-19-7, 90 NRC 1, 11 (2019).

LICENSE CONDITIONS

If a licensing board finds a license amendment should not have been granted, it can revoke the amendment or place conditions on it. *See Seabrook*, CLI-19-7, 90 NRC at 11 (citing *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-06-8, 63 NRC 235, 238 (2006)).

OPERATING LICENSE AMENDMENTS: TECHNICAL SPECIFICATION CHANGES

Under 10 C.F.R. § 50.90, whenever a licensee seeks to amend its license, including technical specifications in the license, it must file an application for amendment that fully describes the changes desired. “In determining whether an amendment to a license, construction permit, or early site permit will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses, construction permits, or early site permits to the extent applicable and appropriate.” 10 C.F.R. § 50.92(a).

OPERATING LICENSE AMENDMENTS: ISSUES FOR CONSIDERATION; RESPONSIBILITY OF LICENSING BOARD

RULES OF PRACTICE: CONTENTIONS (SCOPE)

A licensing board need not address every discrete issue raised by litigants, only those material and within the scope of the proceeding.

QUALITY ASSURANCE/CONTROL: REQUIREMENTS (APPENDIX B)

The pertinent quality assurance requirements of Appendix B to 10 C.F.R. Part 50 apply to all activities that affect the safety-related functions of seismic Category I SSCs at Seabrook. Part 50, Appendix B provides quality assurance

requirements for the design, manufacture, construction, and operation of SSCs that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public. *See* 10 C.F.R. pt. 50, app. B. Section III of Appendix B to 10 C.F.R. Part 50, “Design Control,” requires that the applicable regulatory requirements and 10 C.F.R. § 50.2 defined design basis for those SSCs covered by Appendix B be correctly translated into specifications, drawings, procedures, and instructions. *Id.* § III.

REGULATIONS: GENERAL DESIGN CRITERIA

In addition to satisfying the reasonable assurance standard, a licensee must comply with the applicable NRC General Design Criteria (GDC) for Nuclear Power Plants, specified in 10 C.F.R. Part 50, Appendix A.

REGULATIONS: INTERPRETATION (10 C.F.R. PART 50)

NRC regulations in 10 C.F.R. Part 50 do not require that a license amendment request, or any analysis that supports such request, be submitted for peer review.

RULES OF PRACTICE: BURDEN OF GOING FORWARD

An Intervenor has the initial “burden of going forward,” *Oyster Creek*, CLI-09-7, 69 NRC at 269 (quoting *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 345 (1973)), which requires an intervenor to establish a prima facie case, *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-653, 16 NRC 55, 72 (1982), for claims asserted in the reformulated contention. The admission of a contention, by itself, does not satisfy the “burden of going forward.” *See Oyster Creek*, CLI-09-7, 69 NRC at 268-70. An intervenor must “provid[e] probative evidence or expert testimony.” *Id.* at 269.

RULES OF PRACTICE: BURDEN OF GOING FORWARD; CONTENTION REQUIREMENTS FOR INTERVENTION; CONTENTIONS (SCOPE, NEW INFORMATION); ADMISSIBILITY OF CONTENTIONS; EXPANSION OF CONTENTIONS

Intervenors are not required to prove their case at the contention stage, nor are they required to “provide an exhaustive list of possible bases” at that time. *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 623 (2004); *see Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3),

LBP-12-17, 76 NRC 71, 85 (2012); *Nuclear Innovation North America LLC* (South Texas Project, Units 3 and 4), LBP-11-25, 74 NRC 380, 397 (2011). But an intervenor “‘may not freely change the focus of an admitted contention at will’ to add a host of new issues and objections that could have been raised at the outset.” Licensing Board Order (Ruling on NextEra’s Motion in Limine) (June 7, 2019) at 7 (unpublished) (quoting *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 386 (2002)).

RULES OF PRACTICE: CONTENTIONS (NEW INFORMATION, SCOPE); EXPANSION OF CONTENTIONS

Once admitted, contentions may not be “changed” or impermissibly stretched, unless formally amended. *McGuire/Catawba*, CLI-02-28, 56 NRC at 386. However, an intervenor may proffer additional supporting evidence in support of its admitted contentions without a formal amendment to its contention if the evidence supports an existing argument.

RULES OF PRACTICE: BURDEN OF PROOF

The applicant bears the burden of proof for all matters on which an intervenor has satisfied its “burden of going forward,” requiring the applicant to show by a preponderance of the evidence that it is entitled to the applied-for license. *See* 10 C.F.R. § 2.325; *N. Anna Envtl. Coal.*, 533 F.2d at 667-68. Thus, an applicant must show by a preponderance of the evidence that “[t]here is reasonable assurance . . . that the activities authorized by the operating license can be conducted without endangering the health and safety of the public,” and that all applicable regulations are satisfied. 10 C.F.R. § 50.57(a)(3)(i)-(ii); *see id.* § 50.40(a); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-763, 19 NRC 571, 577-78 (1984); *Oyster Creek*, CLI-09-7, 69 NRC at 263.

RULES OF PRACTICE: BURDEN OF PROOF (STAFF)

For safety-related matters, there is no burden on the Staff, but a Board will consider the Staff’s safety evaluation in reaching its determination. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-03-4, 57 NRC 69, 140-41 (2003). The Staff is required to submit certain documents into evidence. *See* 10 C.F.R. § 2.337(g).

**RULES OF PRACTICE: CONTENTIONS (SCOPE); INITIAL
DECISION; EVIDENCE**

An evidentiary hearing convened in response to an intervenor challenge to a proposed agency licensing action is limited to any admitted contentions. The “reach of a contention necessarily hinges upon its terms *coupled with* its stated bases.” *Pilgrim*, CLI-10-11, 71 NRC at 309 (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988), *aff’d sub nom. Mass. v. NRC*, 924 F.2d 311 (D.C. Cir.), *cert. denied*, 502 U.S. 899 (1991); *McGuire/Catawba*, CLI-02-28, 56 NRC at 379).

**RULES OF PRACTICE: CONTENTIONS (SCOPE); INITIAL
DECISION; EVIDENCE; AUTHORITY OF LICENSING BOARDS TO
REGULATE PROCEEDINGS**

EVIDENCE: MOTIONS TO STRIKE/MOTION IN LIMINE

When an intervenor’s testimony or exhibits are alleged to fall outside the scope of an admitted contention, licensing boards must decide whether the proffered evidence is within the “reasonably inferred bounds” of the admitted contention. *Pilgrim*, CLI-10-11, 71 NRC at 309.

**RULES OF PRACTICE: CONTENTIONS (SCOPE); EVIDENCE;
AUTHORITY OF LICENSING BOARDS TO REGULATE
PROCEEDINGS**

EVIDENCE: MOTIONS TO STRIKE/MOTION IN LIMINE

Licensing boards admit contentions, not bases. Thus, licensing boards do not identify “exhaustive lists of possible bases” but determine whether information offered in evidence, “even if not specifically stated in the original contention and bases[is] relevant [and therefore] within the ‘envelope,’ ‘reach,’ or ‘focus’ of the contention when read with the original bases offered for it.” *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), LBP-04-12, 59 NRC 388, 391 (2004).

**RULES OF PRACTICE: CONTENTIONS (SCOPE); AUTHORITY OF
LICENSING BOARDS TO REGULATE PROCEEDINGS**

EVIDENCE: MOTIONS TO STRIKE/MOTION IN LIMINE

Where a licensing board admitted a reformulated contention based on independently admissible contentions, the bases of the reformulated contention

include the independently admitted contentions, as well as the bases for the independently admitted contentions. *See Catawba*, LBP-04-12, 59 NRC at 391.

RULES OF PRACTICE: EXPERT WITNESSES

EVIDENCE: ADMISSIBILITY (EXPERT TESTIMONY), EXPERT TESTIMONY, EXPERT WITNESS

In making a case-by-case determination of reasonable assurance, a licensing board must weigh the expert testimony and give an expert “due weight” proportionate to his/her expertise. *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-01-9, 53 NRC 239, 250 (2001). Any gaps in an expert’s knowledge go to the weight of the testimony. *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 29 (2004). General expertise on a matter may be useful, even if there are knowledge gaps in specific areas. *Id.* at 31.

RULES OF PRACTICE: EXPERT WITNESSES

EVIDENCE: ADMISSIBILITY (EXPERT TESTIMONY), EXPERT TESTIMONY, EXPERT WITNESS

A board may reject an expert’s assertions if they are based on no more than “a gut feeling” and the expert acknowledges that he “ha[d not] analyzed” relevant documentation. *See Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), LBP-13-13, 78 NRC 246, 301 (2013).

RULES OF PRACTICE: EXPERT WITNESSES

EVIDENCE: ADMISSIBILITY (EXPERT TESTIMONY), EXPERT TESTIMONY, EXPERT WITNESS

If expert testimony is crucial to the outcome of a safety or environmental issue, the expert must “make available . . . sufficient information pertaining to the details of the analysis to permit the correctness of the conclusion to be evaluated.” *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-555, 10 NRC 23, 27 (1979). An expert must make available data used in analyses to support conclusions asserted in the expert’s testimony to enable a licensing board “to make a reasoned judgment on the weight.” *See id.* at 26.

RULES OF PRACTICE: EXPERT WITNESSES

EVIDENCE: ADMISSIBILITY (EXPERT TESTIMONY), EXPERT TESTIMONY, EXPERT WITNESS

An expert may be qualified to testify based on knowledge, skill, experience, training, or education. *See Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-669, 15 NRC 453, 475 (1982); Fed. R. Evid. 702.

RULES OF PRACTICE: EXPERT WITNESSES

EVIDENCE: ADMISSIBILITY (EXPERT TESTIMONY), EXPERT TESTIMONY, EXPERT WITNESS

If not specifically stated in an admitted contention, the expertise of those involved in generating and reviewing a license amendment application, or similar application, is beyond the scope of the proceeding. A licensing board will only consider direct challenges to the qualifications of expert witnesses testifying in the proceeding. A licensing board, however, will not consider challenges to the experts retained by an applicant to develop, and the Staff to review, a license amendment application.

RULES OF PRACTICE: EVIDENCE: MOTIONS TO STRIKE/MOTION IN LIMINE; AUTHORITY OF LICENSING BOARDS TO REGULATE PROCEEDINGS; EVIDENCE

Under 10 C.F.R. § 2.319, a licensing board has the power to “[r]estrict irrelevant, immaterial, unreliable, duplicative or cumulative evidence and/or arguments.” 10 C.F.R. § 2.319(e). Commission precedent indicates that “a licensing board normally has considerable discretion in making evidentiary rulings.” *Catawba*, CLI-04-21, 60 NRC at 27.

RULES OF PRACTICE: EVIDENCE (FEDERAL RULES)

Licensing boards may refer to the Federal Rules of Evidence for guidance. *Geders v. United States*, 425 U.S. 80, 86 (1976); *see Settling Devotional Claimants v. Copyright Royalty Board*, 797 F.3d 1106, 1118 (D.C. Cir. 2015); *see also Angiuoni v. Town of Billerica*, 838 F.3d 34, 40 (1st Cir. 2016) (quoting *United States v. Thuna*, 786 F.2d 437, 444 (1st Cir. 1986)); *United States v. Sebagala*, 256 F.3d 59, 66 (1st Cir. 2001); *Faigin v. Kelly*, 184 F.3d 67, 85 (1st Cir. 1999); Fed. R. Evid. 611(a). But the Federal Rules of Evidence are not binding on licensing boards. *Southern California Edison Co.* (San Onofre

Nuclear Generating Station, Units 2 and 3), ALAB-717, 17 NRC 346, 365 n.32 (1983); 10 C.F.R. § 2.319(d).

RULES OF PRACTICE: EVIDENCE; AUTHORITY OF LICENSING BOARDS TO REGULATE PROCEEDINGS

Licensing boards do not require strict rules of evidence to prevent the presentation of unfair and prejudicial evidence to a jury, *see Old Chief v. United States*, 519 U.S. 172, 188 n.9 (1997); Fed. R. Evid. 403, since, in Subpart L proceedings “[w]ritten prefiled testimony and exhibits are typically submitted well in advance of the evidentiary hearing, and in our most common types of hearings, the licensing boards themselves — not the parties — orally examine the witnesses.” *PSEG Power, LLC, and PSEG Nuclear, LLC* (Early Site Permit Application), LBP-16-4, 83 NRC 187, 210-11 n.171 (2016) (citing 10 C.F.R. § 2.1207).

RULES OF PRACTICE: EVIDENCE (PREFILED WRITTEN TESTIMONY); AUTHORITY OF LICENSING BOARDS TO REGULATE PROCEEDINGS

REGULATIONS: INTERPRETATION (10 C.F.R. § 2.1207(a)(2))

To the degree that the regulations governing this Subpart L proceeding define the scope of rebuttal testimony, the delineation is found in 10 C.F.R. § 2.1207(a)(2), which provides that rebuttal testimony must “be directed to the initial statements and testimony of other participants.” 10 C.F.R. § 2.1207(a)(2). In addition, presiding officers may issue scheduling orders which define the permissible scope of rebuttal testimony for the proceeding at hand. *Id.* § 2.332.

RULES OF PRACTICE: PRECEDENTIAL EFFECT OF BOARD DECISIONS

Prior licensing board orders, at most, provide persuasive authority. *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-13-10, 78 NRC 563, 569 n.42 (2013).

RULES OF PRACTICE: PRECEDENTIAL EFFECT OF BOARD DECISIONS

Licensing board scheduling orders are merely procedural orders that prescribe the rules of a specific proceeding. *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-22, 70 NRC 640, 640 (2009);

Rockwell International Corp. (Rocketdyne Division), LBP-89-27, 30 NRC 265, 266 (1989); *see also* 10 C.F.R. § 2.332(a)-(c). Procedural scheduling orders do not provide binding precedent on future licensing boards in managing the conduct of their proceedings or making evidentiary determinations.

TECHNICAL ISSUE(S) DISCUSSED: AGING MANAGEMENT

The maintenance rule directs licensees to “monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, and components . . . are capable of fulfilling their intended functions.” 10 C.F.R. § 50.65(a)(1).

TECHNICAL ISSUE(S) DISCUSSED: CURRENT LICENSING ISSUES

A licensee must obtain a license amendment pursuant to 10 C.F.R. § 50.90 before implementing a proposed change if the change would “result in a departure from a method of evaluation described in the [final safety analysis report] (as updated) used in establishing the design bases or in the safety analyses.” 10 C.F.R. § 50.59(c)(2)(viii).

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LIST OF ABBREVIATIONS

ACI	American Concrete Institute
ACRS	Advisory Committee on Reactor Safeguards
ASME	American Society of Mechanical Engineers
ASR	Alkali-Silica Reaction
ASTM	American Society of Testing and Materials
C-10	C-10 Research and Education Foundation, Inc.
CEB	Containment Enclosure Building
CI	Cracking Index
CCI	Combined Cracking Index
DRI	Damage Rating Index
EPRI	Electric Power Research Institute
FEA	Finite Element Analysis
FHWA	U.S. Department of Transportation Federal Highway Administration
FSB	Fuel Storage Building
FSAR	Final Safety Analysis Report
FSEL	Ferguson Structural Engineering Laboratory
GDC	General Design Criteria
IStructE	Institution of Structural Engineers
LAR	License Amendment Request
LSTP	Large-Scale Test Program
mm/m	millimeters per meter
MPR	MPR Associates, Inc.
NRC	U.S. Nuclear Regulatory Commission
NRR	NRC Office of Nuclear Reactor Regulation
NSHCD	No Significant Hazards Consideration Determination
NUREG	NRC Technical Report Designation
OBE	Operating Basis Earthquake
PDF	Portable Document Format

POD	Prompt Operability Determination
RAI	Request for Additional Information
RES	NRC Office of Nuclear Regulatory Research
SE	Safety Evaluation
SEM	Structural Evaluation Methodology
SGH	Simpson, Gumpertz, & Heger Inc.
SMP	Structures Monitoring Program
SSCs	Structures, Systems, and Components
SSE	Safe Shutdown Earthquake
UFSAR	Updated Final Safety Analysis Report

INITIAL DECISION

(Ruling on the Reformulated Contention)

I. INTRODUCTION

This proceeding arose from a license amendment request (LAR) filed by NextEra Energy Seabrook, LLC (NextEra),¹ regarding the operating license for Seabrook Unit 1, in Seabrook, New Hampshire. The LAR revised the Unit 1 Updated Final Safety Analysis Report (UFSAR) to include methods for analyzing the impact of concrete degradation caused by the alkali-silica reaction (ASR) affecting seismic Category I reinforced concrete structures at Seabrook.²

On April 10, 2017, C-10 Research & Education Foundation, Inc. (C-10) timely filed a petition seeking a hearing on the LAR.³ In LBP-17-7, this Board held that C-10 established its standing to intervene in this proceeding, and admitted Contentions A, B, C, D, and H, as modified by the Board. Under 10 C.F.R. §§ 2.319(j) and 2.329(c)(1) and pursuant to Commission precedent,⁴ the Board combined Contention D with portions of Contentions A, B, C, and H that

¹ Ex. INT010, Seabrook, License Amendment Request 16-03 — Revise Current Licensing Basis to Adopt a Methodology for the Analysis of Seismic Category I Structures with Concrete Affected by Alkali-Silica Reaction (August 1, 2016) at PDF 1-3 [hereinafter Ex. INT010, Original LAR]. Ex. INT010, Original LAR is a 74-page unnumbered portable document format (PDF) file. For reference clarity, this Board will refer to all Original LAR pages using their PDF page numbers.

We note also that the exhibit number references we use in this proceeding begin with a three-letter party identifier, i.e., NER (for LAR applicant NextEra), NRC (for the NRC Staff), and INT (for intervenor C-10 Research & Education Foundation, Inc (C-10)), followed by the exhibit number, and then followed in some instances by the designator “-R” to indicate that the exhibit was revised after its original submission as a pre-filed exhibit.

² See *id.* at PDF 2. Seismic Category I structures, systems, and components (SSCs) include those necessary to control the release of radioactive material or otherwise mitigate the consequences of an accident. We shall occasionally refer to these seismic Category I structures simply as “Seabrook structures.” See Ex. NRC088, Regulatory Guide (RG) 1.29, Seismic Design Classification for Nuclear Power Plants (July 2016) at 5 [hereinafter Ex. NRC088, RG 1.29].

³ C-10 is a membership organization with more than 700 members. Its name has been shortened from the original, “Citizens within the 10-Mile radius (of Seabrook Station)” to C-10. The organization is a non-profit 501(c)(3) membership organization with the mission to protect public health and the environment surrounding Seabrook Station. C-10 Research and Education Foundation, Inc. Petition for [L]eave to [I]ntervene: Nuclear Regulatory Commission Docket No. 50-443 (Apr. 10, 2017) at 1 [hereinafter C-10 Petition]; [C-10] Response to U.S. NRC Staff’s Ans. to [C-10]’s Petition for Leave to Intervene: Nuclear Regulatory Commission Docket No. 50-443 (May 12, 2017) at 2 [hereinafter C-10’s Reply].

⁴ Section 2.319(j) authorizes a Board to “[h]old conferences before or during a hearing for . . . [the] simplification of contentions,” while 10 C.F.R. § 2.329(c)(1) authorizes a Board to hold a prehearing conference to consider matters including the “[s]implification, clarification, and specification of the

(Continued)

each alleged defects in the LAR's monitoring program, acceptance criteria, and inspection intervals.⁵ The reformulated contention states:

The large-scale test program, undertaken for NextEra at the [Ferguson Structural Engineering Laboratory], has yielded data that are not "representative" of the progression of ASR at Seabrook. As a result, the proposed monitoring, acceptance criteria, and inspection intervals are not adequate.⁶

On March 11, 2019, the NRC Staff (Staff) issued the license amendment to NextEra Energy Seabrook, LLC.⁷ On September 24-27, 2019, the Board conducted an evidentiary hearing on the reformulated contention at the Newburyport City Hall Auditorium in Newburyport, Massachusetts.⁸

This Initial Decision resolves the reformulated contention, which is based on Contentions A, B, C, D, and H. In Part VIII, *infra*, we identify several aspects of the LAR that, if unaltered, would preclude a finding that the license amendment provides reasonable assurance of adequate protection of public health and safety (hereinafter reasonable assurance).⁹ We further conclude, however, *infra* Part IX.A, that the imposition of license conditions on these aspects of the LAR provides reasonable assurance. The license conditions include modifications to conditions imposed by the Staff¹⁰ when it granted the LAR and modifications to the requirements of NextEra's ASR monitoring program. With the inclusion of the Board conditions in the license amendment, we conclude that it satisfies regulatory requirements. We therefore resolve the reformulated contention in favor of NextEra.

issues." See *Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 481-83 (2008) (describing licensing boards' authority to reformulate contentions); see also *Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 552 n.79 (2009).

⁵ LBP-17-7, 86 NRC 59, 127 (2017).

⁶ *Id.* at 90.

⁷ Ex. INT024, NRC Safety Evaluation Related to Amendment No. 159 to Facility Operating License No. NPF-86 (March 11, 2019) at 2 [hereinafter Ex. INT024, Final SE]. For clarity, this Board will reference the PDF page numbers in citations to this exhibit.

⁸ See Tr. at 214-1203.

⁹ See Atomic Energy Act § 182, 42 U.S.C. § 2232. Both the common standards for licenses and construction permits in 10 C.F.R. § 50.40(a), and those specifically for issuance of operating licenses in 10 C.F.R. § 50.57(a), provide that there must be "reasonable assurance" that the activities at issue will not endanger the health and safety of the public. *Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-22, 82 NRC 310, 316 n.44 (2015).

¹⁰ See *infra* Part IX.A.

II. BACKGROUND

A. Discovery and Evaluation of ASR at Seabrook

ASR is one type of alkali-aggregate reaction that can damage and degrade concrete structures.¹¹ The expansion of concrete and cracking from ASR can potentially impact the capacity¹² (i.e., structural properties) of a concrete structure by reducing the material properties (i.e., compressive strength, elastic modulus, and tensile strength)¹³ of the concrete.¹⁴ Concrete expansion caused by ASR can also lead to deformation of the structure itself and cause strains where the expansion is resisted by steel reinforcement or supports, other structures, or adjoining parts of the same structure that are outside the ASR-affected area.¹⁵ Structural deformation caused by ASR can increase the load or demand on the structure, which, in turn, affects overall structural performance.¹⁶

NextEra first identified pattern cracking consistent with ASR at Seabrook in 2009.¹⁷ Cracking was initially identified in the B Electrical Tunnel,¹⁸ and, subsequently, in several other seismic Category I structures at the facility.¹⁹ As a result, NextEra removed multiple concrete cores from the walls in several plant structures to confirm the presence of ASR.²⁰ In August 2010, NextEra completed the petrographic evaluation²¹ of the concrete core samples, which confirmed ASR as the degradation mechanism.²²

The degraded conditions of Seabrook seismic Category I structures were evaluated in the plant's Corrective Action Program via a prompt operability

¹¹ Ex. INT010, Original LAR at PDF 8-9. The reaction is explained in more detail *infra* Part II.A. ASR and many other technical terms are defined in the Glossary, *see infra* Appendix.

¹² Capacity is the ability to withstand applied loads, such as from an earthquake. Ex. NER001, MPR Testimony at 36.

¹³ *Id.* at 39.

¹⁴ *See id.*

¹⁵ Ex. INT010, Original LAR at PDF 23.

¹⁶ *Id.* at PDF 9-10.

¹⁷ *Id.* at PDF 9.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ "Petrographic examination involves microscopic examination of prepared concrete surfaces by a qualified petrographer. The examination assesses the overall quality of concrete, and can determine causes for concrete degradation." Ex. NER001, MPR Testimony at 48.

²² Ex. NER018, MPR-3727, Rev. 1, "Seabrook Station: Impact of Alkali-Silica Reaction on Concrete Structures and Attachments" (Jan. 2014) and NextEra Supplements I-V Thereto (FP100716, Rev. 4) at 12 [hereinafter Ex. NER018, MPR-3727].

determination (POD) in August 2010²³ that later went through several revisions.²⁴ In 2012, NextEra completed an interim evaluation that assessed the structural adequacy of the reinforced concrete structures affected by ASR and the system/component anchorages in the ASR-affected concrete.²⁵ The evaluation found that the affected reinforced concrete structures would remain suitable for continued service for an interim period.²⁶ However, the evaluation noted that additional testing was required to evaluate the full design compliance of the concrete structures.²⁷

On August 1, 2016, NextEra submitted its LAR.²⁸ The LAR revised the Seabrook Unit 1 UFSAR to include methods for analyzing the impact of concrete degradation caused by ASR on seismic Category I reinforced concrete structures.²⁹ The changes also limited allowable ASR expansion and established criteria for monitoring future changes due to ASR expansion and related structural deformation.³⁰ The three key elements of the LAR included the Large-Scale Test Program (LSTP),³¹ the Structures Monitoring Program (SMP), and the Structural Evaluation Methodology (SEM). We will review each of these in turn.

Because the applicable building codes do not include provisions for the analysis of structures affected by ASR,³² NextEra devised its own methodology and concluded that, despite the effect of ASR on the material properties of Seabrook concrete, Seabrook structures “will have strength close to or in excess of that envisaged in the original design or as required by the code.”³³ NextEra based its

²³ Ex. NRC019, Confirmatory Action Letter, Seabrook Station, Unit 1 — Information Related to Concrete Degradation Issues (May 16, 2012) at 2.

²⁴ The initial PODs (Revisions 0 and 1) addressed the B Electrical Tunnel where ASR was first discovered. Five other buildings were identified as part of the extent-of-condition review and the evaluation of core samples taken from these structures. The PODs were updated as new information became available and revised analytical techniques were incorporated. *See* Ex. NRC082, Letter from Paul O. Freeman, NextEra, to NRC, “Seabrook Station Actions for Resolution of Alkali Silica Reaction (ASR) Issues” (May 10, 2012) at 2-3.

²⁵ Ex. INT010, Original LAR at PDF 10.

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.* at PDF 2.

²⁹ *Id.* at PDF 8.

³⁰ *Id.* at PDF 16-17, 30-37; *see also id.* at PDF 16-17.

³¹ The LAR uses the terms “large-scale test programs” and “large-scale test program” interchangeably. *See, e.g., id.* at PDF 15. In addition, some of the exhibits referenced in this order refer to the test program as the large-scale test programs, the FSEL, or the MPR/FSEL, but all refer to the same LSTP performed by FSEL. We will use the phrase LSTP throughout, regardless of how it was originally stated.

³² *Id.* at PDF 11.

³³ *Id.* at PDF 15.

methodology on the LSTP and its review of the existing technical literature.³⁴ The LSTP involved testing concrete specimens constructed by MPR Associates, Inc. (MPR) — a consultant to NextEra — that purportedly reflected the structural characteristics of ASR-affected structures at Seabrook.³⁵ NextEra concluded that the LSTP was a better means to evaluate ASR's impact on structural performance than testing cores taken directly from the Seabrook Plant.³⁶ The Ferguson Structural Engineering Laboratory (FSEL), part of the University of Texas at Austin, performed the tests on the constructed specimens.³⁷

The specimens used in the LSTP had ASR levels more severe than those found at Seabrook, but “the number of available test specimens and nature of the testing prohibited testing out to ASR levels where there was a clear change in ‘limit state’ capacity.”³⁸ Because of the lack of testing data for more advanced levels of ASR, “periodic monitoring of ASR at Seabrook is necessary to ensure that the conclusions of the [LSTP] remain valid and that the level of ASR does not exceed that considered under the test programs.”³⁹ The LAR, therefore, identified methods for monitoring ASR expansion. The SMP as modified by the LAR includes: (1) “periodic measurement of ASR expansion[;]” and (2) “periodic inspections of ASR-affected structures to identify and trend building deformation.”⁴⁰

The SEM evaluates both structural capacity and demands, or loads,⁴¹ placed

³⁴ *Id.* at PDF 10.

³⁵ *Id.* at PDF 15.

³⁶ See Ex. NRC001-R, Staff Testimony at 24 [hereinafter Ex. NRC001-R, Staff Testimony].

³⁷ Ex. INT010, Original LAR at PDF 15.

³⁸ *Id.* at PDF 17. A limit state is a condition of a structure beyond which it no longer fulfills the relevant design criteria. *Id.* at PDF 15.

³⁹ *Id.* at PDF 17.

⁴⁰ *Id.* at PDF 30-31. The SMP performs two functions. First, the program gathers expansion measurements from crack width measurements and extensometer readings at Seabrook for monitoring against specified acceptance criteria based on the LSTP to determine whether ASR-related expansion at Seabrook exceeds levels observed in the LSTP. Second, it gathers crack width and deformation measurements for monitoring against criteria established in the structural evaluations performed under the Structural Evaluation Methodology. Ex. NER001, Testimony of NextEra Witnesses Michael Collins, John Simons, Christopher Bagley, Oguzhan Bayrak, and Edward Carley (“MPR Testimony”) at 59, 111-12, 113 [hereinafter Ex. NER001, MPR Testimony]; Ex. NER007, Seabrook Structures Monitoring Program Manual, Rev. 7 [PROPRIETARY] at 4-1.2 [hereinafter Ex. NER007, Seabrook [SMP] Manual Rev. 7] (non-public). The specific monitoring methods are discussed in more detail *infra* Part VIII.A.

⁴¹ “‘Loads’ are [f]orces or other actions that result from the weight of all building materials, occupants and their possessions, environmental effects, differential movements, and restrained dimensional changes. Permanent loads are loads in which variations over time are rare or of small

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on the structures.⁴² On the capacity side, the SEM uses Seabrook’s existing UFSAR provisions on concrete capacities with the original design concrete specifications, so long as the Expansion Monitoring Limits in the SMP are not exceeded.⁴³ On the demand side, NextEra’s evaluation concluded that ASR expansion in reinforced concrete resulted in a compressive load that should be combined with other loads already included in design calculations.⁴⁴ The LAR, therefore, included an analytical approach to account for the effects of ASR on design basis loads.⁴⁵ The SEM provides a methodology for calculating the ASR loads on a structure, based on in-plane expansion measurements such as crack width, pin-to-pin mechanical, and structural deformation measurements.⁴⁶ NextEra proposed several modifications to the Seabrook UFSAR to account for loads from ASR expansion in design calculations.⁴⁷ Incorporating the loads into the UFSAR and evaluating structures using the appropriate properties for ASR-affected structural members is a change in methodology that requires NRC review and approval.⁴⁸

As part of its SEM, NextEra uses a computational approach called a Finite Element Analysis (FEA) to understand the complex structures at Seabrook.⁴⁹ The FEA is a computational model that includes various elements to “collectively . . . simulate the structural geometry, stiffness, and mass” of the desired structure.⁵⁰ Modelers can add loads (i.e., demands), such as gravity, wind, or ASR, to the FEA to measure structural responses.⁵¹ NextEra’s stated goal in using the FEA is to “determine the structural forces, stresses, and deformations in the structural

magnitude. All other loads are variable loads.” Ex. NER004, Testimony of NextEra Witnesses Said Bolourchi, Glenn Bell, and Matthew Sherman (“SGH Testimony”) at 22 [hereinafter Ex. NER004, SGH Testimony].

⁴² See *id.* at 15-20, 42-43.

⁴³ *Id.* at 17, 19-20; Ex. NER001, MPR Testimony at 60.

⁴⁴ Ex. INT010, Original LAR at PDF 20 tbl.2.

⁴⁵ *Id.* at PDF 16-17, 18-19, 23-30. Seabrook’s original licensing basis includes methods for performing structural evaluations on Seabrook’s Containment Building and certain other structures at the plant to ensure that they fulfill their safety-related functions following a design basis earthquake. Ex. NER001, MPR Testimony at 19.

⁴⁶ Ex. NER004, SGH Testimony, at 15-20, 32, 42-43; see generally Ex. INT022, Simpson Gumpertz & Heger, Methodology for the Analysis of Seismic Category I Structures with Concrete Affected by Alkali-Silica Reaction (June 2018) [hereinafter Ex. INT022, SEM]. Ex. INT022, SEM is a 175-page PDF with multiple pagination forms. For reference clarity, the Board will cite to PDF page numbers.

⁴⁷ See Ex. INT010, Original LAR at PDF 24-30; Ex. NRC007, UFSAR § 3.8.

⁴⁸ See *infra* Parts III.A.2-A.3.

⁴⁹ Ex. NER004, SGH Testimony at 21-22, 39-40.

⁵⁰ *Id.* at 39.

⁵¹ *Id.* at 39-40.

elements when required loadings are applied.”⁵² The FEA provides a methodology for calculating the ASR loads on a structure based on field measurements and structural deformation measurements.⁵³ After computing the total demands from ASR and other factors in the FEA, those demands are compared to the structural capacities (in this case, the capacities calculated using code equations and original material properties) to determine whether the structural integrity is within acceptable limits.⁵⁴

B. C-10’s Petition and the Board’s Ruling on Standing and Contention Admissibility

On February 7, 2017, the NRC published a *Federal Register* notice of opportunity to request a hearing on the LAR.⁵⁵ In that notice, the Staff proposed “to determine that the amendment request involves no significant hazards consideration” under 10 C.F.R. § 50.92(c).⁵⁶ On April 10, 2017, C-10 timely filed a petition seeking a hearing on the LAR submitted by NextEra concerning the operating license for Seabrook.⁵⁷ C-10’s Petition included ten contentions (Contentions A-J),⁵⁸ which outlined its concerns surrounding ASR-induced concrete degradation and its potential impacts on the concrete structures reinforcing the facility.⁵⁹

On May 5, the Staff and NextEra filed answers to the Petition.⁶⁰ NextEra argued that C-10 failed to submit an admissible contention.⁶¹ Although the Staff maintained that none of the original contentions, standing alone, were admissible,⁶² it proposed that a reformulated contention that combined C-10’s Con-

⁵² *Id.* at 39.

⁵³ *Id.* at 19-22, 44.

⁵⁴ *Id.* at 21-22, 39-40.

⁵⁵ Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving Proposed No Significant Hazards Considerations and Containing Sensitive Unclassified Non-Safeguards Information and Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information, 82 Fed. Reg. 9,601, 9,604 (Feb. 7, 2017).

⁵⁶ *Id.*

⁵⁷ C-10 Petition at 1.

⁵⁸ *Id.* at 2-3.

⁵⁹ *Id.*

⁶⁰ NRC Staff’s Ans. to [C-10] Petition for Leave to Intervene (May 5, 2017) [hereinafter Staff Ans. to Petition]; NextEra’s Ans. Opposing [C-10]’s Petition for Leave to Intervene and Hearing Request on [NextEra]’s License Amendment Request 16-03 (May 5, 2017) [hereinafter NextEra Ans. to Petition].

⁶¹ NextEra Ans. to Petition at 16.

⁶² Staff Ans. to Petition at 26.

tentions A, B, C, D, G, and H would be admissible.⁶³ The Staff maintained that C-10's remaining contentions were inadmissible.⁶⁴ C-10 did not object to the admission of the reformulated contention.⁶⁵

In LBP-17-7, this Board admitted five contentions (Contentions A, B, C, D, and H) from the Petition.⁶⁶ The Board found each of those contentions to be "at least partially independently admissible."⁶⁷ The details of each contention are set forth in detail in LBP-17-7,⁶⁸ but because the parties dispute the scope of the issues admitted for hearing, we provide a summary of each admitted contention below.

Contention A stated that "[v]isual inspection, crack width indexing, and extensometer deployment are not sufficient tools for determining the presence and extent of ASR in safety-related structures at Seabrook Station."⁶⁹ The Board concluded that Contention A was "inadmissible to the extent it concerns visual inspections" because the LAR's monitoring program does not depend on visual inspections.⁷⁰ But the Board found Contention A admissible as to the use of a combined cracking index (CCI) to monitor in-plane expansion (parallel to the underlying rebars)⁷¹ and the use of extensometers to measure through-thickness⁷² expansion (perpendicular to the underlying rebars).⁷³

C-10's proposed Contention B stated that "[e]xpansion occurring within a reinforced concrete structure due to [ASR] is not equivalent to a [prestressing] effect. Any mitigation of lost structural capacity, due to reinforcement, is temporary and unpredictable."⁷⁴ According to C-10, NextEra's claim that ASR-impacted concrete held under "restraint" by steel rebar "increases in strength

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ LBP-17-7, 86 NRC 59, 89 (2017), *aff'd*, CLI-18-4, 87 NRC 89 (2018).

⁶⁶ *See* LBP-17-7, 86 NRC at 92-131.

⁶⁷ *Id.* at 126-27.

⁶⁸ *Id.* at 92-137.

⁶⁹ C-10 Petition at 2.

⁷⁰ LBP-17-7, 86 NRC at 95.

⁷¹ Ex. INT010, Original LAR at PDF 16.

⁷² Several terms have been used during this proceeding to discuss through-thickness expansion, such as radial and horizontal expansion. Both terms are synonymous with through-thickness expansion. For clarity, we will use the phrase "through-thickness," although exhibits and witnesses may have used a different phrase.

⁷³ LBP-17-7, 86 NRC at 95; Ex. INT010, Original LAR at PDF 16.

⁷⁴ C-10 Petition at 4 (emphasis omitted). "Prestressing of concrete refers to the approach of applying a compressive load to improve the tensile capacity of the concrete member. . . . Because concrete is much stronger in compression than tension, prestressing can improve in-service performance for certain applications." Ex. NER001, MPR Testimony at 38.

reflects a false understanding of the forces at work.”⁷⁵ C-10 asserted that the concrete may “show a temporary increase in certain measures of strength, but irrevocably will advance toward failure.”⁷⁶ According to C-10, “[t]he danger in misconstruing the effects of ASR, acting within the restraint imposed by reinforcing steel, is that serious degradation . . . may go unnoticed without employing thorough petrographic analysis.”⁷⁷

The Board concluded that C-10’s argument was “sufficient to establish a significant link between the claimed deficiency and the agency’s ultimate determination whether the applicant will adequately protect the health and safety of the public.”⁷⁸ The Board agreed with the Staff, however, that it need not resolve the “theoretical question” whether ASR-induced expansion within a reinforced concrete structure causes an effect that is equivalent to prestressing.⁷⁹ The Board, therefore, restated Contention B to read:

The LAR misconstrues expansion occurring within a reinforced concrete structure due to the Alkali-Silica Reaction because any mitigation of lost structural capacity, due to reinforcement, is temporary and unpredictable.⁸⁰

Contention C repeated Contention B’s demand for thorough petrographic analysis of Seabrook structures, along with the argument that the benefit from ASR expansion in reinforced concrete is only temporary because microcracking will eventually lead to an “autocatalytic collapse of the concrete’s properties.”⁸¹ The Board admitted Contention C because it provided additional expert arguments in support of C-10’s demand for thorough petrographic analysis.⁸²

Contention D, quoting the LAR, emphasized that “[a]pplication of the results of the [LSTP] requires that the test specimens be representative of reinforced concrete at Seabrook Station, and that expansion behavior of concrete at the plant be similar to that observed in the test specimens.”⁸³ Contention D alleged

⁷⁵ *Id.* at 5.

⁷⁶ *Id.* (emphasis omitted).

⁷⁷ *Id.* (emphasis omitted).

⁷⁸ LBP-17-7, 86 NRC at 106.

⁷⁹ *Id.* at 105.

⁸⁰ *Id.* at 107.

⁸¹ C-10 Petition at 8.

⁸² LBP-17-7, 86 NRC at 108-11.

⁸³ C-10 Petition at 9 (quoting Ex. INT019, MPR-4273, Rev. 1, Seabrook Station — Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction (March 2018) (Enclosure 7 to Letter SBK-18072) at vi [hereinafter Ex. INT019, MPR-4273]; Ex. INT021, MPR-4273, MPR-4273, Rev. 1, Seabrook Station — Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction (March 2018) (Enclosure 7 to Letter SBK-18072) at vi [hereinafter Ex. INT021, MPR-4273] (non-public)).

that the LSTP yielded data not truly representative of the “non-linear advancement of ASR over the course of 35-40 years” in Seabrook concrete.⁸⁴ Contention D further emphasized that the LSTP could not be “substituted for the required comprehensive petrographic analysis of in-situ concrete at the Seabrook reactor.”⁸⁵ The Board concluded that if Contention D is correct, reliance on the LSTP to support the proposed monitoring program, acceptance criteria, and inspection intervals undermines the LAR.⁸⁶ The Board, therefore, concluded that Contention D is admissible.⁸⁷

Contention H stated that the monitoring intervals NextEra proposed for Tier 2⁸⁸ and Tier 3⁸⁹ areas were too long and too fixed to measure effectively the ongoing impacts of ASR on seismic Category I structures.⁹⁰ C-10 claimed that there was no real knowledge of the speed of concrete deterioration caused by advancing ASR, i.e., “there [was] no determination as to whether ASR progresses at a steady rate or at an accelerating (or decelerating) rate” and therefore the SMP’s monitoring intervals were not appropriately conservative.⁹¹

Under 10 C.F.R. §§ 2.319(j) and 2.329(c)(1) and pursuant to Commission precedent,⁹² the Board combined Contention D with portions of Contentions A, B, C, and H that each alleged defects in the LAR’s monitoring program, acceptance criteria, and inspection intervals.⁹³ We concluded that “[b]ecause of the interrelated nature of the five admissible contentions, consolidation will promote a more efficient proceeding.”⁹⁴ We therefore reformulated the admissible portions of Contentions A, B, C, D, and H into a single admitted contention:

The large-scale test program, undertaken for NextEra at the FSEL, has yielded data that are not “representative” of the progression of ASR at Seabrook. As a result, the proposed monitoring, acceptance criteria, and inspection intervals are not adequate.⁹⁵

⁸⁴ *Id.* at 10.

⁸⁵ *Id.* at 8.

⁸⁶ LBP-17-7, 86 NRC at 114.

⁸⁷ *Id.* at 121.

⁸⁸ Tier 2 structures are those areas with 0.5 millimeters per meter (mm/m) (0.05%) to 1.0 mm/m (0.1%) of in-plane expansion and are monitored every 30 months. *See* Ex. INT010, Original LAR at PDF 65.

⁸⁹ Tier 3 structures are areas with in-plane expansion measured at 1.0 mm/m (0.1%) or more. These areas are scheduled for inspection every 6 months. *See id.*

⁹⁰ C-10 Petition at 15.

⁹¹ *Id.*

⁹² *See supra* note 4.

⁹³ LBP-17-7, 86 NRC at 127.

⁹⁴ *Id.* at 90.

⁹⁵ *Id.*

On October 31, 2017, NextEra appealed our admission of the reformulated contention, arguing the Board should have denied C-10's hearing request.⁹⁶ Both C-10 and the Staff opposed the appeal.⁹⁷ NextEra challenged the Board's determination regarding the consolidation of the five contentions which the Board found admissible and, finally, the admissibility of the single, reformulated contention.⁹⁸

The Commission affirmed the Board's decision in LBP-17-7 and found that NextEra had not demonstrated an error of law or abuse of discretion concerning the Board's decision to admit the reformulated contention.⁹⁹

C. C-10's Emergency Motion

On February 13, 2019, C-10 filed an emergency petition that requested the Commission exercise its supervisory authority and reverse the Staff's no significant hazards consideration determination (NSHCD) and immediately suspend the license amendment and as well as suspend a separate, related decision to renew the Seabrook operating license.¹⁰⁰ Moreover, C-10 requested that the Commission "take other appropriate actions in this proceeding to ensure adequate consideration and resolution of the seismic risk implications of ongoing and increasing [ASR]-related degradation in the Seabrook containment and other concrete safety structures."¹⁰¹ C-10 argued the Commission should review and reverse the Staff's NSHCD until after the adjudicatory hearing.¹⁰² Further, C-10 asked the Commission to investigate best practices for ASR and provide guidance to the Staff for evaluating ASR-related safety risks.¹⁰³ Both NextEra and the Staff opposed the petition.¹⁰⁴

⁹⁶ NextEra's Notice of Appeal of LBP-17-7 (Oct. 31, 2017); Brief in Support of NextEra's Appeal of LBP-17-7 (Oct. 31, 2017) [hereinafter NextEra's Appeal of LBP-17-7].

⁹⁷ [C-10] Response to NextEra's Appeal of LBP-17-7: Whereby the Atomic Safety and Licensing Board Granted Standing to [C-10] to Intervene in Docket No. 50-443-LA-2 and Admitted Five of Its Contentions (Nov. 22, 2017); NRC Staff Brief in Opposition to NextEra's Appeal of LBP-17-7 (Nov. 27, 2017).

⁹⁸ NextEra's Appeal of LBP-17-7 at 13-30.

⁹⁹ CLI-18-4, 87 NRC at 110.

¹⁰⁰ Emergency Petition by [C-10] for Exercise of Commission's Supervisory Authority to Reverse No Significant Hazards Determination and Immediately Suspend License Amendment and License Renewal Decisions (Feb. 13, 2019) [hereinafter Emergency Petition].

¹⁰¹ *Id.* at 1-2.

¹⁰² *Id.* at 3.

¹⁰³ *Id.* at 4, 16.

¹⁰⁴ NextEra's Ans. Opposing C-10's Emergency Petition (Feb. 25, 2019); NRC Staff's Ans. to C-10's Emergency Petition (Feb. 25, 2019).

On July 25, 2019, the Commission declined to grant C-10's requested relief.¹⁰⁵ The Commission first noted that the petition was procedurally improper since Commission regulations explicitly "contemplate the issuance of an amendment to a reactor license during the pendency of a hearing on the amendment, as long as the NRC has first determined that the amendment involves no significant hazards consideration."¹⁰⁶ The Commission emphasized the distinction between a decision on the license amendment request, which requires reasonable assurance of adequate protection of the health and safety of the public and the common defense and security, and a NSHCD, which only addresses whether a hearing must be held before or after issuance of an amendment.¹⁰⁷ Further, the Commission reasoned that 10 C.F.R. §§ 50.58(b)(6) and 2.1213(f) bar C-10 from requesting a delay of the issuance of the license amendment by the Commission until the Commission reviews the Staff's NSHCD.¹⁰⁸

Accordingly, the Commission declined the request to stay the effectiveness of the renewed license¹⁰⁹ and found no compelling reason to exercise its discretionary authority to immediately suspend the license amendment, finding C-10's "emergency" petition lacked legitimate urgency.¹¹⁰ The Commission observed that C-10 failed to address the possibility that the license amendment could be altered to provide effective redress upon conclusion of the evidentiary hearing.¹¹¹ The Commission noted as well that the Board has the authority to revoke or place conditions on the license amendment if it determines the Staff should not have granted it.¹¹²

D. Plant Tour

Before the evidentiary hearing, the Board determined that it would benefit from a plant tour of Seabrook. The Board's goals for the tour included (1) developing site familiarity and an understanding of the affected concrete structures at the plant; (2) viewing various ASR-affected areas; and (3) observing the Cracking Index (CI) and CCI methodologies as applied to typical ASR-

¹⁰⁵ See CLI-19-7, 90 NRC 1, 2 (2019).

¹⁰⁶ *Id.* at 8 (citing Atomic Energy Act of 1954 § 189a(2)(A), 42 U.S.C. § 2239(a)(2)(A); 10 C.F.R. §§ 50.91(a)(4), 50.92).

¹⁰⁷ *Id.*; see Final Procedures and Standards on No Significant Hazards Considerations; Final Rule, 51 Fed. Reg. 7744, 7749 (Mar. 6, 1986); see also 10 C.F.R. §§ 50.40, 50.92.

¹⁰⁸ CLI-19-7, 90 NRC at 8-9.

¹⁰⁹ *Id.* at 10.

¹¹⁰ See *id.* at 10, 12.

¹¹¹ *Id.* at 10-11.

¹¹² *Id.* at 11 (citing *Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-06-8, 63 NRC 235, 238 (2006)).

monitoring.¹¹³ The Board explained that the purpose of the tour was solely to enable the Board to better understand the evidence that the parties may submit during the evidentiary hearing for this proceeding.¹¹⁴ Therefore, to the extent any party wanted the evidentiary record to reflect any matter observed or discussed during the tour, that party had to make an appropriate evidentiary submission to the Board that reflected such matters.¹¹⁵

On June 21, 2019, the Board, together with representatives from the Staff, NextEra, and C-10, viewed various core-sampling, monitoring, and extensometer locations at Seabrook. These included the Exterior Diesel Generator Building CCI panel and extensometer; the Exterior Fuel Storage Building (FSB) CCI panels and extensometers; the Exterior Containment Enclosure Building (CEB)/Equipment Hatch Missile Shield CCI panels; the Condensate Storage Tank Enclosure exterior CCI panels and extensometers; and the B Electrical Tunnel.¹¹⁶ Subsequently, the Board and the other participants viewed additional CCI panels, extensometers, and coring locations placed in various areas and observed an extensometer model and a core sampling display.

E. Evidentiary Hearing

From September 24-27, 2019, the Board held an evidentiary hearing in Newburyport, Massachusetts, at the Newburyport City Hall Auditorium.¹¹⁷ At the hearing, the Board received statements from counsel, heard testimony from witnesses for the Staff, NextEra, and C-10, and admitted party exhibits into the evidentiary record.¹¹⁸ Subsequently, in an October 29, 2019 issuance, the Board adopted corrections to the hearing transcripts,¹¹⁹ adopted redactions to the transcript of the closed hearing sessions conducted on Wednesday, September 25, 2019, and Friday, September 27, 2019, so as to allow for a publicly available version of those hearing sessions, and adopted the final exhibit list.¹²⁰

On November 21, 2019, the Staff, NextEra, and C-10 submitted proposed findings of fact and conclusions of law.¹²¹ Thereafter, the parties sought a time

¹¹³ See Licensing Board Memorandum (Concerning Plant Tour) (Apr. 29, 2019) at 2 (unpublished).

¹¹⁴ See Licensing Board Memorandum (Confirming Plant Tour) (May 29, 2019) at 1 (unpublished).

¹¹⁵ *Id.* at 1-2.

¹¹⁶ See Joint Proposal Regarding Plant Tour (May 9, 2019) at 2.

¹¹⁷ See Tr. at 214-1203.

¹¹⁸ See Licensing Board Order (Adopting Transcript Corrections, Transcript Redactions, and Final Exhibit List) (Oct. 29, 2019) (unpublished).

¹¹⁹ See *id.* at 2.

¹²⁰ *Id.*

¹²¹ [NextEra]’s Proposed Findings of Fact and Conclusions of Law (Nov. 21, 2019) [hereinafter
(Continued)]

extension to submit responsive proposed findings.¹²² On December 2, 2019, the Board granted the requested extension.¹²³ NextEra filed its Responsive Proposed Findings of Fact and Conclusions of Law on December 13, 2019,¹²⁴ and then filed a corrected version on December 17, 2019.¹²⁵ Subsequently, C-10 moved for leave to submit a response to NextEra's Responsive Proposed Findings of Fact and Conclusions of Law.¹²⁶ The Board denied the motion because "such an additional round of filings would go well beyond the submissions authorized under 10 C.F.R. § 2.1209 and would unnecessarily add to the several hundred pages of proposed findings of fact and conclusions of law already before the Board."¹²⁷

F. Motion to Compel Mineralogical Data

During the evidentiary hearing, a dispute arose as to whether NextEra should produce a document that compared the mineralogy of the Seabrook aggregate and the LSTP test specimen aggregate.¹²⁸ On September 30, 2019, C-10 moved

NextEra's Proposed Findings of Fact and Conclusions of Law]; NRC Staff Proposed Findings of Fact and Conclusions of Law for the Admitted Contention (Nov. 21, 2019) [hereinafter NRC Staff's Proposed Findings of Fact and Conclusions of Law]; [C-10]'s Proposed Findings of Fact and Conclusions of Law (Nov. 21, 2019). C-10 later submitted an Errata to its initial Proposed Findings of Fact and Conclusions of Law. C-10's Errata to Proposed Findings of Fact and Conclusions of Law (Nov. 27, 2019); *see* [Corrected] [C-10]'s Proposed Findings of Fact and Conclusions of Law (Nov. 27, 2019); *see also* [Redacted] [Corrected] [C-10]'s Proposed Findings of Fact and Conclusions of Law (Feb. 12, 2020).

¹²² *See* Unopposed Motion for Extension of Time to Seek Leave to File Responsive Proposed Findings of Fact and Conclusions of Law (Nov. 29, 2019). At the evidentiary hearing, the Board instructed that the parties would need to seek leave to submit any responsive proposed findings. *See* Tr. at 1181 (Spritzer).

¹²³ Licensing Board Order (Granting Time Extension to File Motions for Leave to Submit Responsive Proposed Findings of Fact and Conclusions of Law) (Dec. 2, 2019) at 1 (unpublished). The Board tasked the parties with filing any motion seeking leave to file responsive proposed findings of fact and conclusions of law on or before Friday, December 13, 2019. *Id.* at 2. Additionally, the Board ordered that any motion be accompanied by the responsive proposed findings of fact and conclusions of law. *Id.*

¹²⁴ [NextEra]'s Motion for Leave to File Responsive Proposed Findings of Fact and Conclusions of Law (Dec. 13, 2019).

¹²⁵ [NextEra]'s Corrected Responsive Proposed Findings of Fact and Conclusions of Law (Dec. 17, 2019); *see also* [NextEra]'s Errata to Responsive Proposed Findings of Fact and Conclusions of Law (Dec. 17, 2019).

¹²⁶ [C-10]'s Response to NextEra's Motion for Leave to File Responsive Proposed Findings of Fact and Conclusions of Law (Dec. 18, 2019).

¹²⁷ Licensing Board Order (Granting NextEra's Motion for Leave to File Responsive Proposed Findings of Fact and Conclusions of Law) (Jan. 6, 2020) at 2 (unpublished).

¹²⁸ Tr. at 1080-81.

to compel NextEra to produce “a document or documents containing data regarding the tested mineralogical components of aggregate in Seabrook concrete.”¹²⁹ C-10 maintained that the production of the Seabrook aggregate data was necessary “to make a complete record for the resolution of the dispute between the parties regarding the representativeness of the [LSTP test data].”¹³⁰ C-10 also requested “a reasonable opportunity for Dr. [Victor E.] Saouma[, C-10’s expert] to give a written expert opinion on the comparability of the Seabrook aggregate with the LSTP test specimen aggregate.”¹³¹

NextEra opposed the motion; the Staff did not file a response.¹³² NextEra argued, among other things, that it already produced documents containing mineralogical data as part of its initial disclosures in January 2018.¹³³ In response, the Board issued a Request for Clarification from C-10, inquiring whether the disclosed documents contained the mineralogical data sought.¹³⁴ C-10 submitted a reply stating that NextEra’s initial disclosures did not include the requested mineralogical data, and also requesting leave to file two additional exhibits.¹³⁵ Both NextEra and the Staff opposed the Motion to Submit Additional Exhibits.¹³⁶ On November 25, 2019, the Board granted C-10’s Motion to Compel but denied its Motion to Submit Additional Exhibits.¹³⁷

The Board established a schedule that required NextEra to produce “all documents within its possession, custody, or control not previously produced containing data regarding the tested mineralogical components of aggregate in Seabrook concrete.”¹³⁸ Additionally, the Board provided an opportunity for Dr. Saouma to file “written testimony explaining how the newly produced data affects his evaluation of the comparability of the Seabrook aggregate and the LSTP test

¹²⁹ [C-10]’s Motion to Compel Production of Mineralogy Data and Request for Opportunity to Submit Supplemental Written Testimony Regarding the Data (Sept. 30, 2019) at 1 [hereinafter Motion to Compel].

¹³⁰ *Id.*

¹³¹ *Id.* at 4.

¹³² NextEra’s Ans. Opposing C-10’s Motions to Compel Production of Mineralogical Data and to Submit Additional Post-Hearing Testimony (Oct. 9, 2019).

¹³³ *Id.* at 3-4.

¹³⁴ Licensing Board Memorandum (Request for Clarification) (Oct. 16, 2019) at 2 (unpublished).

¹³⁵ [C-10]’s Response to ASLB Memorandum and Motion to Submit Additional Exhibits Regarding Petrographic Observations and Analyses of ASR at Seabrook (Oct. 28, 2019) at 2, 3-4.

¹³⁶ NextEra’s Ans. Opposing C-10’s Third Motion for Leave to File Supplemental Testimony (Nov. 6, 2019); NRC Staff’s Ans. Opposing C-10’s Motion to Admit Additional Exhibit and Testimony (Nov. 6, 2019).

¹³⁷ Licensing Board Order (Granting C-10’s Motion to Compel Mineralogical Data and Request to Submit Supplemental Written Testimony Concerning the Data; Denying C-10’s Motion to Submit Additional Exhibits) (Nov. 25, 2019) at 4 (unpublished).

¹³⁸ *Id.* at 17.

specimen aggregate.”¹³⁹ Finally, the Board allowed both NextEra and the Staff to file written rebuttal testimony in response to Dr. Saouma’s new written testimony.¹⁴⁰

On December 5, 2019, NextEra produced one document in response to the Board order granting the Motion to Compel.¹⁴¹ The document, titled “Santa Ana Aggregates,”¹⁴² contained “an examination of aggregate samples from a New Mexico quarry (which was not used in Seabrook’s concrete), along with a comparison of that aggregate to Seabrook’s aggregate.”¹⁴³ As permitted by the Board, C-10 filed Dr. Saouma’s written explanation regarding that document.¹⁴⁴ Both NextEra and Staff submitted exhibits in response.¹⁴⁵

Following the submission of the additional exhibits related to the mineralogical data, the Board closed the evidentiary record.¹⁴⁶ On January 31, 2020, the parties filed supplemental proposed findings of fact and conclusions of law, limited to the specific issues raised in Dr. Saouma’s new testimony and the rebuttal testimony submitted by NextEra and the Staff.¹⁴⁷

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ Letter from Paul M. Bessette, NextEra, to Diane Curran, C-10 (Dec. 5, 2019) (ADAMS Accession No. ML19339H135) [hereinafter NextEra Motion to Compel Letter].

¹⁴² See *id.* attach. Santa Ana Aggregates Petrography Report (Jan. 8, 2013) (ADAMS Accession No. ML19339H136) [hereinafter Santa Ana Aggregates Report].

¹⁴³ NextEra Motion to Compel Letter at 1 (emphasis omitted).

¹⁴⁴ Ex. INT051-R, Supplemental Testimony of Victor E. Saouma, Ph.D Regarding Adequacy of Petrographic Documents to Support Mineralogical Comparison Between Seabrook Concrete and LSTP Test Specimens [hereinafter Ex. INT051-R, Dr. Saouma Supp. Testimony]. The Board admitted Ex. INT051-R on January 17, 2020. See Licensing Board Order (Admitting Exhibits, Closing the Record of the September 2019 Evidentiary Hearing, and Providing Additional Instruction for Supplemental Proposed Findings) (Jan. 17, 2020) at 1 (unpublished) [hereinafter Order Closing the Hearing Record].

¹⁴⁵ See Ex. NER077, Testimony of NextEra Witnesses John Simons, Christopher Bagley, Oguzhan Bayrak, Matthew Sherman, and Edward Carley in Response to Exhibit INT051-R [hereinafter Ex. NER077, NextEra Response to Ex. INT051-R]; see also Ex. NRC091, Staff Testimony in Response to Exhibit INT051-R [hereinafter Ex. NRC091, Staff Response to Ex. INT051-R]. The Board admitted both exhibits on January 17, 2020. See Order Closing the Hearing Record at 1.

¹⁴⁶ See Order Closing the Hearing Record at 2.

¹⁴⁷ [NextEra]’s Supplemental Proposed Findings of Fact and Conclusions of Law (Jan. 31, 2020); NRC Staff Supplemental Proposed Findings of Fact and Conclusions of Law (Jan. 31, 2020) [hereinafter NRC Staff’s Supp. Proposed Findings of Fact and Conclusions of Law]; [C-10]’s Supplemental Proposed Findings of Fact and Conclusions of Law (Jan. 31, 2020). C-10 later submitted a redacted version of its Supplemental Proposed Findings of Fact and Conclusions of Law. See Redacted [C-10]’s Supplemental Proposed Findings of Fact and Conclusions of Law (Feb. 12, 2020) [hereinafter C-10’s Redacted Supp. Proposed Findings of Fact and Conclusions of Law].

III. LEGAL STANDARDS

A. Regulatory Framework

1. *Seismic Category I Structures*

Some Seabrook structures, systems, and components (SSCs), including their foundations and supports, are designated as seismic Category I structures¹⁴⁸ because they are designed to withstand the effects of an Operating Basis Earthquake (OBE)¹⁴⁹ and a Safe Shutdown Earthquake (SSE).¹⁵⁰ Seismic Category I SSCs are those necessary to ensure: “(1) the integrity of the reactor coolant pressure boundary; (2) the capability to shut down the reactor and maintain it in a safe shutdown condition; [and] (3) the ability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the guideline exposures”¹⁵¹ required by 10 C.F.R. §§ 50.34(a)(1) and 100.11. The pertinent quality assurance requirements of Appendix B to 10 C.F.R. Part 50 apply to all activities that affect the safety-related functions of seismic Category I SSCs at Seabrook.¹⁵² Appendix S to 10 C.F.R. Part 50 requires that the design for all nuclear power plants allow for certain SSCs to remain functional if SSE ground motion occurs.¹⁵³ These structures are sufficiently isolated and protected from non-seismic Category I structures to safeguard their integrity from design basis events.¹⁵⁴

2. *Updated Final Safety Analysis Report, Section 3.8*

The UFSAR contains design and licensing basis information for a nuclear

¹⁴⁸ “Equipment and components that are not classified as seismic Category I, and whose collapse or failure could result in the loss of safety function of a seismic Category I [SSC], are checked to confirm their structural integrity against collapse or failure due to SSE loadings.” Ex. NRC007, Seabrook Station Updated Final Safety Analysis Report, Chapter 3, Design of Structures, Components, Equipment and Systems § 3.2.1 (Oct. 2017) [hereinafter Ex. NRC007, UFSAR]; *see supra* note 2.

¹⁴⁹ OBE is the vibratory ground motion for which those features of the nuclear power plant necessary for continued operation without undue risk to the health and safety of the public will remain functional. SSE is the maximum earthquake potential for which certain structures, systems, and components, important to safety, are designed to sustain and remain functional. The OBE response spectra are obtained by multiplying the SSE response spectra by one-half. Ex. NRC007, UFSAR §§ 3.7(B).1.1, 3.7(N).

¹⁵⁰ Appendix S to 10 C.F.R. Part 50, “Earthquake Engineering Criteria for Nuclear Power Plants,” requires that all nuclear power plants be designed so that certain SSCs remain functional if the SSE ground motion occurs. 10 C.F.R. pt. 50, app. S.

¹⁵¹ 10 C.F.R. pt. 50, app. S, § III.

¹⁵² *See* Ex. NRC088, RG 1.29 at 2.

¹⁵³ *See* 10 C.F.R. pt. 50, app. S.

¹⁵⁴ Ex. NRC007, UFSAR § 3.2.1.

power facility, including how the facility meets the regulatory requirements for the design and how the facility responds to various design basis accidents and events. Analytical methods of evaluation are a fundamental part of demonstrating how the design meets regulatory requirements and why the facility's response to accidents and incidents is acceptable. In cases where the analytical methodology is an essential part of the conclusion that the facility meets the required design bases, the UFSAR must describe the specific analytical methods, which are then subject to varying levels of NRC review and approval during licensing.¹⁵⁵

Chapter 3 of the Seabrook UFSAR identifies, describes, and discusses the principal architectural and engineering design of those SSCs important to safety.¹⁵⁶ UFSAR section 3.8 includes the requirements for the design of seismic Category I structures at Seabrook.¹⁵⁷ Section 3.8.1 applies to the concrete containment building, and section 3.8.4 applies to other seismic Category I structures.¹⁵⁸ The LAR modified each of these subsections to incorporate the changes related to ASR material effects and loads. Additional LAR-proposed changes to other subsections of the UFSAR were necessary for limits on anchors in concrete walls and slabs affected by ASR, and to allow the use of ANSYS¹⁵⁹ computer software.¹⁶⁰

Section 50.59 of 10 C.F.R. sets forth the circumstances under which a licensee may make changes to its facility as described in its UFSAR,¹⁶¹ make changes in the procedures described in the UFSAR, and conduct tests or experiments not otherwise specified in the UFSAR. The licensee may take such action without obtaining a license amendment if there is no change to the facility's technical

¹⁵⁵ See 10 C.F.R. § 50.71(e).

¹⁵⁶ Ex. NRC007, UFSAR § 3.

¹⁵⁷ *Id.* § 3.8.

¹⁵⁸ *Id.* §§ 3.8.1, 3.8.4.

¹⁵⁹ ANSYS, Inc. is a software company that develops engineering simulations. NextEra used a model developed by ANSYS in simulating the effects of ASR on Seabrook concrete. See Ex. INT010, Original LAR at PDF 26, 30.

¹⁶⁰ The proposed changes to the specific subsections of the Seabrook UFSAR are described in Ex. INT011 and the UFSAR markup pages are provided in Attachment 1 to that exhibit. Ex. INT011, NextEra Energy's Evaluation of the Proposed Change Including Attachment 1 Markup of UFSAR Pages (Enclosure 1 to Letter SBK-L-16071) at PDF 40-70 [hereinafter Ex. INT011, Evaluation of the Proposed Change] (non-public). Ex. INT011, Evaluation of the Proposed Change, is a 70-page PDF with unnumbered pages. For reference clarity, this Board will refer to all pages with their PDF page numbers.

¹⁶¹ Of particular importance to Seabrook, 10 C.F.R. § 50.59(c)(2)(viii) requires a licensee to obtain a license amendment pursuant to 10 C.F.R. § 50.90 before implementing a proposed change if the change would "result in a departure from a method of evaluation described in the FSAR (as updated) used in establishing the design bases or in the safety analyses." See Ex. INT010, Original LAR at PDF 35. This is just the type of change involved in the UFSAR revisions at issue in this proceeding.

specifications¹⁶² and the licensing action does not fall into one of eight specific categories.¹⁶³ Under certain circumstances, however, a licensee must apply for a license amendment and obtain NRC's approval before it can implement any such proposed change.¹⁶⁴

3. *License Amendments*

Under 10 C.F.R. § 50.90, whenever a licensee seeks to amend its license, including technical specifications in the license, it must file an application for amendment that fully describes the changes desired. "In determining whether an amendment to a license, construction permit, or early site permit will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses, construction permits, or early site permits to the extent applicable and appropriate."¹⁶⁵

Accordingly, pursuant to 10 C.F.R. § 50.57(a)(3) and (a)(6), a license amendment must provide:

(3) . . . [R]easonable assurance (i) that the activities authorized by the operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the regulations in this chapter; and . . . [that]

(6) The issuance of the license will not be inimical to the common defense and security or to the health and safety of the public.¹⁶⁶

Similarly, 10 C.F.R. § 50.40, entitled "Common standards," requires that "the Commission be persuaded, *inter alia*, that the applicant will comply with all applicable regulations, that the health and safety of the public will not be endangered, [and] that the issuance of the amendment will not be inimical to the health and safety of the public"¹⁶⁷

¹⁶² See 10 C.F.R. § 50.59(c)(1).

¹⁶³ See *id.* § 50.59(c)(2).

¹⁶⁴ See *id.* §§ 50.59(c)(2), 50.90.

¹⁶⁵ See *id.* § 50.92(a).

¹⁶⁶ See *id.* § 50.57(a)(3), (6); see *General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Unit 2), LBP-89-7, 29 NRC 138, 190-91 (1989); see also *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), LBP-82-116, 16 NRC 1937, 1946 (1982) (citing *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245 (1978)).

¹⁶⁷ 10 C.F.R. § 50.40; see *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 44 (1978); accord *Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1, 2, and 3), ALAB-664, 15 NRC 1, 15-16 ("Prior to license issuance
(Continued)

Pursuant to the Atomic Energy Act, applicants seeking license amendments must demonstrate that the amended license “provide[s] adequate protection to the health and safety of the public.”¹⁶⁸ Specifically, the Commission requires that “a license amendment request must provide sufficient documentation and analysis to show that the licensee has complied with the relevant requirements, thereby demonstrating that the amended license will continue to provide reasonable assurance of adequate protection of public health and safety.”¹⁶⁹ Although the Commission has not defined “adequate protection,” the phrase is synonymous with “no undue risk.”¹⁷⁰

In this proceeding, we are concerned with the effects of ASR on Seabrook’s safety-related structures and structural components. NextEra must demonstrate with reasonable assurance that structures or components in the LAR will remain capable of fulfilling their intended functions under design basis loads and load combinations.¹⁷¹ The Commission stated that the “[r]easonable assurance’ [standard] is not quantified as equivalent to a 95% (or any other percent) confidence level, but is based on sound technical judgment of the particulars of a case and on compliance with our regulations.”¹⁷² In general, the Commission undertakes a case-by-case approach in making a reasonable assurance determination, considering all relevant facts and circumstances to reach a sound technical judgment that verifies an applicant’s compliance with all applicable regulations.¹⁷³

the NRC must first find reasonable assurance that the activities authorized by the amendment can be conducted without endangering the health and safety of the public, and in compliance with Commission regulations.”), *vacated and remanded on other grounds*, CLI-82-26, 16 NRC 880 (1982); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Station, Units 3 and 4), LBP-81-16, 13 NRC 1115, 1120 (1981) (reviewing a proposed license amendment to determine whether it would “endanger the health and safety of the public”).

¹⁶⁸ Atomic Energy Act § 182, 42 U.S.C. § 2232; *see Union of Concerned Scientists v. NRC*, 824 F.2d 108, 118 (D.C. Cir. 1987) (holding “the NRC need not demand that nuclear power plants present no risk of harm” to satisfy the adequate protection standard); *Carstens v. NRC*, 742 F.2d 1546, 1557 (D.C. Cir. 1984); CLI-19-7, 90 NRC at 8; CLI-18-4, 87 NRC at 110; *Palisades*, CLI-15-22, 82 NRC at 316; *DTE Electric Co.* (Fermi Nuclear Power Plant, Unit 3), CLI-15-4, 81 NRC 221, 231 n.49 (2015).

¹⁶⁹ *Palisades*, CLI-15-22, 82 NRC at 316.

¹⁷⁰ *See Union of Concerned Scientists*, 824 F.2d at 119.

¹⁷¹ 10 C.F.R. §§ 50.40(a), 50.57(a)(3)(i)-(ii).

¹⁷² *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 263 (2009); *see AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-07-17, 66 NRC 327, 340 (2007), *aff’d*, CLI-09-7, 69 NRC 235 (2009) (stating the reasonable assurance standard “is not susceptible to formalistic quantification” (i.e., 95% confidence) or mechanistic application); *see also N. Anna Envtl. Coal. v. NRC*, 533 F.2d 655, 667-68 (D.C. Cir. 1976) (rejecting the argument that reasonable assurance requires proof beyond a reasonable doubt and noting that the licensing board equated “reasonable assurance” with “a clear preponderance of the evidence”).

¹⁷³ *Oyster Creek*, CLI-09-7, 69 NRC at 262 n.143; *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-14, 71 NRC 449, 465-66 (2010).

To date, however, no specific NRC guidance, regulatory standard, or nuclear industry guidance exists to address the effects of ASR on nuclear power plants.¹⁷⁴ Moreover, neither of the building codes applicable to Seabrook’s safety-related structures contain methods to address the effects of ASR on the structural properties of seismic Category I structures.¹⁷⁵ Therefore, the Board must evaluate all the evidence within the scope of the reformulated contention, relying in large part on the testimony of qualified experts and the exhibits on which they rely to determine whether the reasonable assurance standard has been met.

In addition to satisfying the reasonable assurance standard, a licensee must comply with the applicable NRC General Design Criteria (GDC) for Nuclear Power Plants, specified in 10 C.F.R. Part 50, Appendix A.¹⁷⁶ Here, the relevant GDCs are GDC 1 (Quality Standards and Records),¹⁷⁷ GDC 2 (Design Bases for Protection Against Natural Phenomena),¹⁷⁸ GDC 4 (Environmental and Missile Design Bases),¹⁷⁹ GDC 16 (Containment Design),¹⁸⁰ and GDC 50 (Containment Design Basis).¹⁸¹ GDC 1, 2, and 4 apply to Seabrook seismic Category I structures, whereas GDC 16 and 50 apply only to containment structures.

GDC 1 requires that “structures, systems, and components [SSCs] important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed.”¹⁸² In addition, GDC 1 states “[w]here generally recognized codes and standards are used, they shall be identified and evaluated to determine their *applicability, adequacy, and sufficiency* and shall be supplemented or modified as necessary to assure a quality product in keeping with the required safety function.”¹⁸³ GDC 1 also requires the implementation of a quality assurance program to assure “that these [SSCs] will satisfactorily perform their safety functions”¹⁸⁴ GDC 2 requires all SSCs to “be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches

¹⁷⁴ See Improved Identification Techniques Against Alkali-Silica Reaction (ASR) Concrete Degradation at Nuclear Power Plants, 84 Fed. Reg. 65023, 65023 (Nov. 26, 2019) (NRC denial of petition for rulemaking to set ASR standards).

¹⁷⁵ See Ex. INT010, Original LAR at PDF 11.

¹⁷⁶ Each GDC is discussed in detail in the UFSAR. See Ex. NRC007, UFSAR § 3.1.

¹⁷⁷ *Id.* § 3.1.1.1.

¹⁷⁸ *Id.* § 3.1.1.2.

¹⁷⁹ *Id.* § 3.1.1.4.

¹⁸⁰ *Id.* § 3.1.2.7.

¹⁸¹ *Id.* § 3.1.5.1.

¹⁸² 10 C.F.R. pt. 50, app. A.

¹⁸³ *Id.* (emphasis added).

¹⁸⁴ *Id.*

without loss of capability to perform their safety functions,”¹⁸⁵ whereas GDC 4 requires all SSCs to “be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents [and] . . . be appropriately protected against dynamic effects, including the effects of missiles, pipe whipping, and discharging fluids”¹⁸⁶

GDC 16 and 50, which apply to containment structures, such as those at Seabrook, require those structures to maintain a “leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded,”¹⁸⁷ and mandate that the internal components of the containment structure “can accommodate . . . the calculated pressure and temperature conditions resulting from any loss-of-coolant accident”¹⁸⁸

Further, 10 C.F.R. Part 50, Appendix B provides quality assurance requirements for the design, manufacture, construction, and operation of SSCs that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.¹⁸⁹ Section III of Appendix B to 10 C.F.R. Part 50, “Design Control,” requires that the applicable regulatory requirements and 10 C.F.R. § 50.2 defined design basis for those SSCs covered by Appendix B be correctly translated into specifications, drawings, procedures, and instructions.¹⁹⁰

B. Legal Standards Governing This Proceeding

1. Burden of Proof

An Intervenor has the initial “burden of going forward,”¹⁹¹ which requires an

¹⁸⁵ *Id.*

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ See 10 C.F.R. pt. 50, app. B.

¹⁹⁰ *Id.* § III.

¹⁹¹ *Oyster Creek*, CLI-09-7, 69 NRC at 269 (quoting *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 345 (1973) (“The ultimate burden of proof on the question of whether the permit or license should be issued is . . . upon the applicant. But where . . . one of the other parties contends that, for a specific reason . . . the permit or license should be denied, that party has the *burden of going forward* with evidence to buttress that contention. Once he has introduced sufficient evidence to establish a *prima facie* case, the burden then shifts to the applicant who, as part of his overall burden of proof, must provide a sufficient rebuttal to satisfy the Board that it should reject the contention as a basis for denial of the permit or license.”)).

intervenor to establish a prima facie case¹⁹² for claims asserted in the reformulated contention. The admission of a contention, by itself, does not satisfy the “burden of going forward.”¹⁹³ An intervenor must “provid[e] probative evidence or expert testimony.”¹⁹⁴

The applicant bears the burden of proof for all matters on which an intervenor has satisfied its “burden of going forward,” requiring the applicant to show by a preponderance of the evidence that it is entitled to the applied-for license.¹⁹⁵ Thus, NextEra must show by a preponderance of the evidence that “[t]here is reasonable assurance . . . that the activities authorized by the operating license can be conducted without endangering the health and safety of the public,” and that all applicable regulations (which in this case would include GDC 1, 2, 4, 16, 50 and Appendix B to 10 C.F.R. Part 50) are satisfied.¹⁹⁶ For safety-related matters, there is no burden on the Staff, but a Board will consider the Staff’s safety evaluation in reaching its determination.¹⁹⁷

In sum, NextEra carries the burden of proof on the issue whether there is reasonable assurance that the operation of Seabrook, as modified by the LAR, will not endanger the health and safety of the public.¹⁹⁸

In making a case-by-case determination of reasonable assurance, a licensing board must weigh the expert testimony and give an expert “due weight” proportionate to his/her expertise.¹⁹⁹ Any gaps in an expert’s knowledge go to the weight of the testimony.²⁰⁰ General expertise on a matter may be useful, even

¹⁹² *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-653, 16 NRC 55, 72 (1982) (“Prima facie evidence must be legally sufficient to establish a fact or case unless disproved.”).

¹⁹³ See *Oyster Creek*, CLI-09-7, 69 NRC at 268-70.

¹⁹⁴ *Id.* at 269.

¹⁹⁵ See 10 C.F.R. § 2.325; *N. Anna Envtl. Coal.*, 533 F.2d at 667-68.

¹⁹⁶ 10 C.F.R. § 50.57(a)(3)(i)-(ii); see also *id.* § 50.40(a); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-763, 19 NRC 571, 577-78 (1984); *Oyster Creek*, CLI-09-7, 69 NRC at 263.

¹⁹⁷ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-03-4, 57 NRC 69, 140-41 (2003) (“[U]nder the Commission’s time-tested licensing and hearing processes, the Staff’s evaluation of an applicant’s proposal — reached as it conducts its independent review of an applicant’s proposal — is considered an integral part of the record that is developed regarding any contentions challenging what an applicant has put forward. Even though the Staff’s position may not prevail at trial, it is presumed that the development and exploration of a contested issue will benefit from the Staff’s analysis and presentation.”). The Staff is required to submit certain documents into evidence. See 10 C.F.R. § 2.337(g).

¹⁹⁸ See *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-283, 2 NRC 11, 17 (1975).

¹⁹⁹ *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-01-9, 53 NRC 239, 250 (2001).

²⁰⁰ *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 29 (2004).

if there are knowledge gaps in specific areas.²⁰¹ A board may reject an expert’s assertions, however, if they are based on no more than “a gut feeling” and the expert acknowledges that he “ha[d not] analyzed” relevant documentation.²⁰² If expert testimony is crucial to the outcome of a safety or environmental issue, the expert must “make available . . . sufficient information pertaining to the details of the analysis to permit the correctness of the conclusion to be evaluated.”²⁰³ In other words, an expert must make available data used in analyses to support conclusions asserted in the expert’s testimony to enable a licensing board “to make a reasoned judgment on the weight.”²⁰⁴

IV. SEABROOK LICENSE AMENDMENT

A. NRC Staff Safety Evaluation

The Staff issued a draft Safety Evaluation (SE) for the LAR on September 28, 2018 and provided it to the Advisory Committee on Reactor Safeguards (ACRS) that same day.²⁰⁵ Based on its review of the LAR and that Staff report, the ACRS concluded that “NextEra ha[d] undertaken substantial and thorough actions to identify, understand, and address [ASR].”²⁰⁶ In addition, the ACRS found that “[t]he LSTP test samples were highly representative of the ASR-affected struc-

²⁰¹ *Id.* at 31 (“Unwarranted and inflexible barriers, such as too great an insistence on ‘specific’ knowledge in selected aspects of the subject, should not disqualify an expert witness who possesses a strong general background and specialized knowledge in the relevant field.”).

²⁰² *See Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), LBP-13-13, 78 NRC 246, 301 (2013).

²⁰³ *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-555, 10 NRC 23, 27 (1979) (“It is not unreasonable, however, to insist that where, as here, the outcome on a clearly defined and substantial safety or environmental issue may hinge upon the acceptance or rejection of an expert conclusion resting in turn upon a performed analysis, the witness make available (either in his prepared testimony or on the stand) sufficient information pertaining to the details of the analysis to permit the correctness of the conclusion to be evaluated.”).

²⁰⁴ *See id.* at 26.

²⁰⁵ Ex. NRC047, Memorandum from James G. Danna, NRC, to Andrea D. Veil, NRC ACRS, “Seabrook Station, Unit No. 1 — Submission of Alkali-Silica Reaction License Amendment Request Draft Safety Evaluation to Support the Advisory Committee on Reactor Safeguards’ Review of Seabrook License Renewal (CAC No. MF8260; EPID L-2016-LLA-0007)” (Sept. 28, 2018). Created by the AEA, the ACRS, among other duties, “reviews and reports on safety studies and applications for construction permits and facility operating licenses[.]” 10 C.F.R. § 1.13.

²⁰⁶ Ex. NRC048, Letter from Michael Corradini, Chairman, ACRS, to Kristine L. Svinicki, Chairman, NRC, “Seabrook Station Unit 1 License Renewal Application: Review of Licensee Program Addressing Alkali-Silica Reaction” (Dec. 14, 2018) at 1.

tures at Seabrook.”²⁰⁷ The ACRS did not provide any recommendations for modifying the proposed ASR monitoring programs in the LAR.²⁰⁸

Thereafter, on March 11, 2019, the Staff issued a final SE to accompany the requested Seabrook operating license amendment, denominated as License Amendment No. 159.²⁰⁹ In the final SE, the Staff concluded that NextEra had “developed a representative test program and that it [was] reasonable to apply the conclusions of the [LSTP] to the structures at Seabrook within the bounds and limits of the test program, regardless of the results of material property testing on ASR-affected concrete cores.”²¹⁰ The Staff, however, noting that “this [was] a first-of-a-kind approach,” imposed a license condition with two components that “require[s] [NextEra] to implement actions to periodically confirm the continued applicability of the [LSTP] conclusions to Seabrook structures.”²¹¹

B. NRC Staff Technical Conclusions

In the final SE accompanying the March 2019 license amendment, the Staff summarized its review of NextEra’s methodology for analyzing structures affected by ASR at Seabrook.²¹² The Staff reviewed NextEra’s documentation of its proposed evaluation method and conducted audits.²¹³ Based on its review, the Staff concluded that NextEra’s proposed method to evaluate seismic Category I structures affected by ASR “is acceptable and provides reasonable assurance that these structures [will] continue to meet the relevant requirements of 10 [C.F.R.] Part 50, Appendix A, GDC 1, 2, 4, 16 (containment only) and 50 (containment only) and 10 [C.F.R.] Part 50, Appendix B.”²¹⁴

The Staff based its conclusion on seven criteria. First, the Staff concluded that NextEra “met the requirements of GDC 1 by including ASR as a design-basis load and demonstrating that Seabrook ASR-affected structures will continue to meet the requirements of [American Concrete Institute (ACI) 318-71] . . . for all design-basis loads and load combinations[.]”²¹⁵ Further, the Staff concurred that ACI 318-71²¹⁶ is the applicable code to be used based on the

²⁰⁷ *Id.* at 3.

²⁰⁸ *Id.* at 2-4.

²⁰⁹ Ex. INT024, Final SE at PDF 2.

²¹⁰ *Id.* at PDF 40.

²¹¹ *Id.*

²¹² *Id.* at PDF 69-70.

²¹³ *Id.* at PDF 69.

²¹⁴ *Id.*

²¹⁵ *Id.* at PDF 69-70.

²¹⁶ There are two “codes of record” applicable to Seabrook. These two codes form part of Sea-
(Continued)

research conducted for the LSTP and due to the additional supplementation and modifications made to account for ASR in ACI 318-71.²¹⁷ Moreover, the Staff concluded that NextEra developed the LSTP in a manner adequately representative of Seabrook structures, and implemented the LSTP in accordance with quality assurance standards.²¹⁸

Second, the Staff concluded that NextEra fulfilled the requirements “of GDC 2 by including ASR as a design-basis load and demonstrating that Seabrook ASR-affected structures will continue to meet the requirements of [ACI 318-71] . . . for all design basis loads and load combinations . . . under normal and accident conditions”²¹⁹ Third, the Staff concluded that GDC 4 is satisfied because ASR-affected structures will continue to comply with GDC 1 and 2, and “because the design-basis loads and load combinations include the dynamic effects associated with missiles, pipe whipping, and discharging fluids.”²²⁰

Fourth, the Staff concluded that NextEra satisfied the requirements of GDC 16 and 50 by demonstrating the containment will continue to meet GDC 1 and 2 “for all design-basis loads and load combinations including ASR under normal and accident conditions.”²²¹ Fifth, the Staff concluded that NextEra satisfied the applicable requirements in 10 C.F.R. Part 50, Appendix B because NextEra (1) implemented the LSTP under the quality assurance requirements, and (2) established a Structures Monitoring Program to monitor future ASR progression against the LSTP “expansion limits and the structure-specific design output threshold monitoring limits[.]”²²² Sixth, the Staff concluded that the proposed method of ASR evaluation “is acceptable subject to the limitation that measured ASR expansion on affected Seabrook structures is within the limits of the [LSTP]”²²³ Finally, the Staff concluded that NextEra’s “implementation of the future confirmatory actions required by the license condition . . . will

brook’s licensing design basis regarding concrete structures. The first, ACI 318-71, applies to seismic Category I structures other than containment, while the second, ASME Code Section III, Division 2, applies to containment. See Ex. NRC001-R, Staff Testimony at 68; Ex. NRC049, American Concrete Institute (ACI) Standard 318-71, Building Code Requirements for Reinforced Concrete (1971) [hereinafter Ex. NRC049, ACI 318-71] (non-public); Ex. NRC050, Section III, Division 2, of the 1975 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for Containment [hereinafter Ex. NRC050, ASME Code] (non-public).

²¹⁷ Ex. INT024, Final SE at PDF 69.

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ *Id.*

²²¹ *Id.*

²²² *Id.* at PDF 69-70.

²²³ *Id.* at PDF 70.

provide assurance of the continued applicability of the [LSTP] conclusions to Seabrook structures.”²²⁴

C. License Condition

In issuing the March 2019 Seabrook operating license amendment, the Staff included a license condition that requires NextEra to take specific actions to ensure the continued applicability of the LSTP to concrete structures affected by ASR at Seabrook.²²⁵ This condition has two components. The first requires periodic assessments of ASR expansion using an approach identified in Appendix B of MPR-4273²²⁶ to confirm that future ASR expansion is comparable to the data observed in the LSTP expansion program.²²⁷ Additionally, in 2025 and 2035, NextEra must “[c]orroborate the concrete modulus-expansion correlation used to calculate pre-instrument through-thickness expansion, as discussed in Report MPR-4153.”²²⁸ NextEra stated that it would evaluate the need for changes if the periodic assessments suggest that the monitoring intervals or any other aspect of the SMP are insufficient.²²⁹ Moreover, the license condition requires that NextEra must address “any adverse findings from the confirmatory actions in the license condition” in accordance with the Corrective Action Program, which is subject to further NRC oversight.²³⁰

Regarding any substantive differences in Seabrook concrete and the concrete used in the LSTP, the Staff found that the license condition provided additional assurance that any variances will not affect public health and safety.²³¹

D. License Renewal

On March 12, 2019, nearly contemporaneously with the Staff issuance of the license amendment, the Staff also approved a twenty-year license renewal for the

²²⁴ *Id.*

²²⁵ *See id.* at PDF 68-69.

²²⁶ Ex. INT019, MPR-4273, app. B; Ex. INT021, MPR-4273, app. B (non-public).

²²⁷ Ex. INT024, Final SE at PDF 68.

²²⁸ *Id.* at PDF 69 (citing Ex. INT018-R, MPR-4153, Revision 3, Seabrook Station-Approach for Determining Through-Thickness Expansion from Alkali-Silica Reaction (Sept. 2017) (Enclosure 4 to Letter SBK-18072) [hereinafter Ex. INT018-R, MPR-4153, Rev. 3]; Ex. INT020, MPR-4153, Revision 3, Seabrook Station-Approach for Determining Through-Thickness Expansion from Alkali-Silica Reaction (Sept. 2017) (Enclosure 6 to Letter SBK-18072) [hereinafter Ex. INT020, MPR-4153, Rev. 3] (non-public)).

²²⁹ Ex. NER001, MPR Testimony at 129; Tr. at 1135-37 (Carley).

²³⁰ Ex. INT024, Final SE at PDF 68; 10 C.F.R. pt. 50, app. B, Criterion XVI.

²³¹ Ex. NRC001-R, Staff Testimony at 51-52.

Seabrook facility.²³² The license amendment applies to the extended operating period granted in the license renewal.²³³ The license renewal is not within the scope of this proceeding.²³⁴

V. SUMMARY OF THE PARTIES' STATEMENTS OF POSITION

A. C-10

On June 10, 2019, C-10 filed its Initial Statement of Position (SOP).²³⁵ In relying on testimony by its expert Dr. Saouma, C-10 disagreed with both the testing and analytical methods conducted by NextEra.²³⁶ C-10 requested that the Board invalidate the LAR and so the associated license amendment and refer the matter to the Commission to determine whether the license renewal should likewise be invalidated.²³⁷ C-10 argued NextEra's ASR analysis is lacking in several main areas, specifically that: (1) NextEra did not use concrete that was representative of Seabrook concrete in the LSTP;²³⁸ (2) NextEra did not use specimen dimensions, loads, and boundary conditions representative of Seabrook;²³⁹ (3) "NextEra failed to explain the impact of the large horizontal crack that occurred before the shear test on results";²⁴⁰ and (4) NextEra relied on faulty assumptions about ASR, such as confusing material strength with structural strength.²⁴¹ C-10 asserted that these issues render NextEra's finite element analysis (FEA)²⁴² unreliable and undermine the adequacy of parameters used in the ASR expansion monitoring program.²⁴³ Moreover, C-10 suggested that NextEra applied an overly simplistic analytical method to the LSTP data that

²³² NextEra Energy Seabrook, LLC; Seabrook Station, Unit No. 1, 84 Fed. Reg. 9563, 9563-64 (Mar. 12, 2019).

²³³ See generally Ex. INT010, Original LAR.

²³⁴ CLI-19-7, 90 NRC at 9; see *infra* Part VII.B.

²³⁵ [C-10] Initial Statement of Position on C-10's Contentions Regarding NextEra's Program for Managing ASR at Seabrook Station Nuclear Power Plant (June 10, 2019) [hereinafter C-10 Initial SOP].

²³⁶ *Id.* at 1-2.

²³⁷ *Id.* at 2, 13-14.

²³⁸ *Id.* at 10.

²³⁹ *Id.*

²⁴⁰ *Id.*

²⁴¹ *Id.* at 11.

²⁴² The FEA is a computational model that includes various elements to "collectively . . . simulate the structural geometry, stiffness, and mass" of the desired structure where one can add loads (i.e., demands), such as gravity, wind, or ASR, to the FEA to measure structural responses. See Ex. NER004, SGH Testimony at 39-40; see *supra* notes 49-54 and accompanying text.

²⁴³ C-10 Initial SOP at 11.

did not account for the complexities of ASR²⁴⁴ and that NextEra failed to seek peer review by ASR experts.²⁴⁵ In sum, C-10 argued NextEra failed to satisfy its burden to show the LAR complies with all applicable legal requirements.²⁴⁶

C-10 filed a Rebuttal SOP on August 23, 2019,²⁴⁷ which included additional rebuttal testimony by Dr. Saouma.²⁴⁸ C-10 emphasized Dr. Saouma is the only expert witness to testify with “extensive scientific and engineering experience in the study of ASR,” and asserted that the Staff and NextEra lacked sufficient expertise and independent peer review by ASR experts.²⁴⁹ As such, C-10 argued, the Board should give the expert testimony of Dr. Saouma greater weight than the other experts.²⁵⁰

B. NextEra

On July 24, 2019, NextEra submitted its SOP,²⁵¹ arguing the LAR provides reasonable assurance and complies with applicable regulations.²⁵² Specifically, NextEra asserted that the LSTP yielded data representative of ASR-affected concrete at Seabrook;²⁵³ the SMP is fully supported, provides reasonable assurance, and complies with applicable regulations;²⁵⁴ and the Structural Evaluation Methodology (SEM) is adequate.²⁵⁵

As a threshold matter, NextEra argued C-10 failed to meet its initial burden of moving forward with sufficient evidence to show a deficiency in the LAR.²⁵⁶

²⁴⁴ *Id.*

²⁴⁵ *Id.* at 12.

²⁴⁶ *Id.* at 12-13.

²⁴⁷ [C-10] Rebuttal Statement of Position on C-10’s Contentions Regarding NextEra’s Program for Managing ASR at Seabrook Station Nuclear Power Plant (Aug. 23, 2019) [hereinafter C-10 Rebuttal SOP].

²⁴⁸ Ex. INT028, Rebuttal Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra’s Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant [hereinafter Ex. INT028, Dr. Saouma Rebuttal Testimony] (non-public). A non-proprietary version of Ex. INT028, Dr. Saouma Rebuttal Testimony, was filed by C-10 on September 11, 2019. *See* Ex. INT032, Rebuttal Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra’s Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant [hereinafter Ex. INT032, Dr. Saouma Rebuttal Testimony].

²⁴⁹ C-10 Rebuttal SOP at 3.

²⁵⁰ *Id.*

²⁵¹ [NextEra]’s Statement of Position (July 24, 2019).

²⁵² *Id.* at 20-28.

²⁵³ *Id.* at 20-24.

²⁵⁴ *Id.* at 24-26.

²⁵⁵ *Id.* at 26-28.

²⁵⁶ *Id.* at 2.

NextEra proffered several supporting arguments: (1) Dr. Saouma “either abandon[ed] or contradict[ed] nearly every argument advanced in the original Petition”; (2) Dr. Saouma focuse[d] on new challenges to the LAR not contemplated in the original Petition; (3) Dr. Saouma failed to identify an issue in the LAR regarding representativeness; (4) C-10 is incorrect in arguing the LAR is not peer reviewed; (5) NextEra’s use of linear elastic code-based analysis is appropriate, and C-10 failed to identify a material deficiency in its application; (6) Dr. Saouma failed to fully review the LAR and its complete technical basis; and (7) C-10 seeks to impose requirements beyond those mandated by the reasonable assurance standard.²⁵⁷ NextEra further argued that C-10 failed to “acknowledge the legal and regulatory standards applicable to the LAR — much less demonstrate how the LAR somehow fails to satisfy those standards.”²⁵⁸

NextEra summarized the qualifications of its experts²⁵⁹ and asserted that substantial information in the record demonstrates reasonable assurance that Seabrook Station will not endanger the health and safety of the public.²⁶⁰ Further, NextEra stated that Seabrook would conduct its authorized activities in compliance with applicable regulations.²⁶¹ Finally, NextEra concluded that the issuance of the LAR is not inimical to the common defense and security.²⁶² In rebuttal of C-10’s critiques,²⁶³ NextEra alleged that while many of C-10’s arguments do not relate to representativeness, those that do result from a disregard of technical documents or a misunderstanding of the programmatic details and/or objectives of the LSTP.²⁶⁴ NextEra concluded by stating its program addressing ASR “is robust, conservative, technically justified, and satisfies the reasonable assurance standard.”²⁶⁵ In sum, NextEra asserted that the Board should resolve the reformulated contention in its favor.²⁶⁶

C. NRC Staff

On July 24, 2019, the Staff submitted its SOP.²⁶⁷ The Staff found that the LSTP provides reasonable assurance that its data is representative and/or bound-

²⁵⁷ *Id.* at 3-4, 5 (emphasis omitted).

²⁵⁸ *Id.* at 4-5 (emphasis omitted).

²⁵⁹ *Id.* at 10-14.

²⁶⁰ *Id.* at 9.

²⁶¹ *Id.*

²⁶² *Id.* (citing 10 C.F.R. §§ 50.92, 50.57(a)(3), (6)).

²⁶³ *Id.* at 5, 31.

²⁶⁴ *Id.* at 31-32.

²⁶⁵ *Id.* at 37.

²⁶⁶ *Id.* at 37-38.

²⁶⁷ NRC Staff Initial Written Statement of Position (July 24, 2019) [hereinafter NRC Staff SOP].

ing of the progression of ASR at Seabrook.²⁶⁸ Further, the Staff found that NextEra appropriately used the LSTP data to develop the ASR expansion monitoring program.²⁶⁹ The Staff maintained that “the Board should uphold the Staff’s determination that NextEra has provided reasonable assurance that, with the license amendment, as conditioned, Seabrook will continue to meet NRC requirements.”²⁷⁰

According to the Staff, it reviewed each component of the LSTP, finding each one to be representative and/or bounding of the concrete at Seabrook.²⁷¹ The Staff further determined that the concrete of the test specimens reasonably reflected the properties of the concrete in Seabrook structures.²⁷² The Staff also found that the Shear Test Program and Reinforcement Anchorage Test Program were representative and/or bounding of Seabrook structures.²⁷³ The Staff concluded that NextEra appropriately used data from the LSTP to develop the Expansion Monitoring Program.²⁷⁴ The Staff concluded that NextEra’s approach to establishing the expansion limits by testing ASR at levels above those found at Seabrook, which resulted in a finding of no reduction in structural capacity, was conservative and appropriate.²⁷⁵

The Staff provided a rebuttal to each of C-10’s arguments. First, the Staff recognized that the concrete aggregate used for the LSTP is not identical.²⁷⁶ Nonetheless, it argued that the concrete used in the LSTP “was sufficiently representative and/or bounding of the concrete at Seabrook such that the results of the LSTP could reasonably be applied to Seabrook.”²⁷⁷ The Staff also noted that the concrete used in the LSTP had similar specifications to Seabrook concrete and used materials similar to the original materials.²⁷⁸ Additionally, the Staff disputed C-10’s argument that a different form of testing should have been done, stating that such an argument is outside the scope of the proceeding as the Staff’s review is limited to a finding of reasonable assurance of the selected

²⁶⁸ *Id.* at 1.

²⁶⁹ *Id.*

²⁷⁰ *Id.* at 2.

²⁷¹ *Id.* at 33.

²⁷² *Id.* at 35 (“For example, the concrete mix design for the specimens was based on specifications used at Seabrook (e.g., compressive strength, coarse aggregate gradation and type, water-to-cement ratio, cement type, aggregate proportions) and, in part, included constituents obtained from sources similar to those used during the construction of the plant.”).

²⁷³ *Id.* at 36-39.

²⁷⁴ *Id.* at 43-45.

²⁷⁵ *Id.* at 43-44.

²⁷⁶ *Id.* at 46.

²⁷⁷ *Id.* (citing Ex. NRC001-R, Staff Testimony at 50-52).

²⁷⁸ *Id.* at 46-47.

methods.²⁷⁹ Further, the Staff argued that C-10 failed to specify how the lack of accelerated expansion tests presents a safety concern.²⁸⁰ The Staff likewise contended that C-10's arguments regarding a lack of representativeness in the LSTP are not persuasive.²⁸¹ The Staff concluded by maintaining that none of the arguments presented by C-10 credibly dispute the Staff's determination that "NextEra has provided reasonable assurance that, with the license amendment, as conditioned, Seabrook will continue to meet NRC requirements."²⁸²

VI. WITNESSES

A. Qualifications of Witnesses

1. C-10's Expert Witness

Dr. Victor E. Saouma testified as the sole expert for C-10. Dr. Saouma has a Ph.D. in Civil Engineering from Cornell University and is a Professor of Civil Engineering at the University of Colorado in Boulder.²⁸³ Dr. Saouma is an experienced ASR researcher with over fifteen years of experience in various ASR disciplines. His research has encompassed material and structural testing, theoretical and computational modeling, experimental dynamics, fracture mechanics, and risk-based numerical assessments of bridges, nuclear containment structures, and dams.²⁸⁴ In addition, Dr. Saouma developed a well-known ASR model, published several books, including one on the numerical modeling of ASR, *Numerical Modeling of Alkali Aggregate Reaction* (CRC Press 2013), and co-authored dozens of peer-reviewed articles on civil engineering topics, including a 2014 article regarding aging management of ASR at Seabrook.²⁸⁵ Dr. Saouma serves on numerous scientific organizations, committees, and panels,

²⁷⁹ *Id.* at 47-48.

²⁸⁰ *Id.* at 48-49.

²⁸¹ *Id.* at 49-51.

²⁸² *Id.* at 48.

²⁸³ Ex. INT003, Curriculum Vitae, Dr. Victor E. Saouma at 1-2.

²⁸⁴ Ex. INT001-R, Pre-filed Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra's Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant — Corrected June 20, 2019 at 1 [hereinafter Ex. INT001-R, Dr. Saouma Pre-Filed Testimony] (non-public); Ex. INT027, Pre-Filed Opening Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra's Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant — Redacted Version Filed June 26, 2019 at 1 [hereinafter Ex. INT027, Dr. Saouma Pre-Filed Testimony].

²⁸⁵ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 1-2; Ex. INT033, Saouma, V.E. and Hariri-Ardebili, M.A. (2014). A proposed aging management program for alkali silica reactions in a nuclear power plant. *Nuclear Engineering and Design* 277, pp. 248-264 (2014) (non-public).

including current Chair of an International Meeting of Laboratories and Experts of Materials, Construction Systems and Structures committee on Diagnosis and Prognosis of ASR affected Structures.²⁸⁶ Dr. Saouma also has conducted research for various government agencies and has prepared a four-volume report on ASR for the NRC.²⁸⁷

2. *NextEra Expert Witnesses*

In support of its positions at the evidentiary hearing, NextEra presented eight witnesses: Michael Collins, the Engineering Site Director for Seabrook;²⁸⁸ John Simons, the General Manager of Projects with MPR;²⁸⁹ Christopher Bagley, a Technical Lead and Project Manager with MPR;²⁹⁰ Dr. Oguzhan Bayrak, a Professor of Civil, Architectural, and Environmental Engineering;²⁹¹ Edward Carley, the current License Renewal Supervisor for Seabrook;²⁹² Dr. Said Bolourchi, a Senior Principal of the Engineering Mechanics and Infrastructure practice of Simpson Gumpertz & Heger Inc. (SGH);²⁹³ Glenn Bell, a Senior Principal and the Quality Assurance officer for SGH;²⁹⁴ and Matthew Sherman, a Senior Principal with SGH.²⁹⁵

Michael Collins is the Engineering Site Director for Seabrook and has more than thirty-eight years of professional experience in the nuclear power industry.²⁹⁶ In addition, Mr. Collins is responsible for the engineering management and technical oversight of ASR-related activities at Seabrook and is knowledgeable about the initial detection of ASR at Seabrook, the development of the LAR, and the execution of the SMP.²⁹⁷

John Simons is the General Manager of Projects with MPR and has more than thirty-two years of professional experience in the nuclear industry.²⁹⁸ Mr.

²⁸⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 30-32.

²⁸⁷ Ex. INT004, Grant Award, Experimental and Numerical Investigation of Alkali Silica Reaction in Nuclear Reactors (2014); Ex. INT005, Experimental and Numerical Investigation of Alkali Silica Reaction in Nuclear Reactors, Grant No. NRC-HQ-60-14-G-0010, Oct. 2014–Dec. 2017 (\$703,197).

²⁸⁸ Ex. NER006, Michael Collins Biography.

²⁸⁹ Ex. NER008, John Simons Curriculum Vitae.

²⁹⁰ Ex. NER009, Christopher Bagley Curriculum Vitae.

²⁹¹ Ex. NER010, Dr. Oguzhan Bayrak Curriculum Vitae.

²⁹² Ex. NER011, Edward Carley Resume.

²⁹³ Ex. NER031, [Dr.] Said Bolourchi Curriculum Vitae.

²⁹⁴ Ex. NER032, Glenn Bell Curriculum Vitae.

²⁹⁵ Ex. NER033, Matthew Sherman Curriculum Vitae.

²⁹⁶ Ex. NER006, Michael Collins Biography; Ex. NER001, MPR Testimony at 1-3.

²⁹⁷ Ex. NER001, MPR Testimony at 3.

²⁹⁸ Ex. NER008, John Simons Curriculum Vitae; Ex. NER001, MPR Testimony at 4.

Simons has first-hand knowledge of NextEra's multi-year program to evaluate ASR at Seabrook, including the development and application of the LSTP into the SMP.²⁹⁹

Christopher Bagley is a Technical Lead and Project Manager at MPR with more than fifteen years of professional experience in the nuclear power industry.³⁰⁰ Mr. Bagley serves as a Supervisory Engineer and has first-hand knowledge of NextEra's program to evaluate ASR at Seabrook.³⁰¹ In addition, he worked on the development and execution of the LSTP, the application of LSTP results to Seabrook, and the methodology for calculating existing ASR expansion.³⁰² Lastly, he prepared reports for the Electric Power Research Institute (EPRI) on addressing ASR in concrete at nuclear plants.³⁰³

Dr. Oguzhan Bayrak is a Licensed Professional Engineer and a professor at the University of Texas–Austin's Cockrell School of Engineering, with more than twenty years of professional experience in structural engineering and over thirteen years of experience related to ASR.³⁰⁴ Dr. Bayrak has specifically focused on the behavior, analysis, and design of reinforced and prestressed concrete structures, the evaluation of structures in distress, and earthquake engineering.³⁰⁵ Dr. Bayrak is an ACI Fellow, a member of the Precast/Prestressed Concrete Institute, and Chair of the Federation Internationale du Béton, also known as the International Federation for Structural Concrete.³⁰⁶

Dr. Bayrak led the LSTP at the FSEL³⁰⁷ and was the principal investigator and research supervisor for all LSTP efforts conducted at FSEL.³⁰⁸ Prior to conducting the LSTP, Dr. Bayrak completed four large-scale test programs with field applications and structural assessments for the Texas Department of Transportation.³⁰⁹

Edward Carley serves as a Nuclear Engineering Supervisor for Seabrook and has more than thirty-eight years of professional experience in the nuclear power industry.³¹⁰ Mr. Carley oversaw NextEra's development and regulatory review

²⁹⁹ Ex. NER001, MPR Testimony at 4-5.

³⁰⁰ Ex. NER009, Christopher Bagley Curriculum Vitae; Ex. NER001, MPR Testimony at 6.

³⁰¹ Ex. NER001, MPR Testimony at 6-7.

³⁰² *Id.* at 7-8; Ex. NER009, Christopher Bagley Curriculum Vitae at 1.

³⁰³ Ex. NER001, MPR Testimony at 7-8.

³⁰⁴ Ex. NER010, Dr. Oguzhan Bayrak Curriculum Vitae; Tr. at 805 (Bayrak).

³⁰⁵ Ex. NER001, MPR Testimony at 9.

³⁰⁶ *Id.* at 8-10.

³⁰⁷ *Id.* at 8-11.

³⁰⁸ *Id.* at 11.

³⁰⁹ *Id.* at 10.

³¹⁰ Ex. NER011, Edward Carley Resume; Ex. NER001, MPR Testimony at 12-13.

of the LAR, including the development of the overall approach to the aging management program for ASR in the SMP.³¹¹

Dr. Said Bolourchi is a Licensed Professional Engineer and a Senior Principal at SGH.³¹² Dr. Bolourchi has more than forty years of professional experience in the nuclear power industry and has experience related to seismic evaluations of nuclear structures, non-linear modeling, and analysis of highly complex structural loading.³¹³ He is the Principal-in-Charge for all SGH projects associated with the evaluation of seismic Category I structures at Seabrook.³¹⁴

Glenn Bell is a Senior Principal at SGH and a Licensed Professional Engineer.³¹⁵ Mr. Bell has more than forty-four years of professional experience in the structural engineering industry.³¹⁶ Previously, Mr. Bell was the CEO of SGH and served on its Board of Directors as Chair.³¹⁷ In addition, he is the President-elect of the Structural Engineering Institute and a Board Trustee of the Institution of Structural Engineers (IStructE).³¹⁸ Lastly, Mr. Bell has first-hand knowledge of the construction of the SEM, supervising the development of ASR load factors for the SEM and the structural analysis for the Containment Building at Seabrook.³¹⁹

Matthew Sherman is a Senior Principal at SGH and a Licensed Professional Engineer.³²⁰ Mr. Sherman has twenty years of professional experience in both the civil and structural engineering industry, with a focus on construction materials, repair and rehabilitation, and testing.³²¹ Mr. Sherman is a Fellow at both the ACI and the International Concrete Repair Institute.³²² He has first-hand knowledge of the development of the SEM and oversaw the fieldwork, testing, and petrographic studies associated with the structural evaluation of Seabrook structures affected by ASR, including the application of structural monitoring parameters and frequency of monitoring included as inputs to the SMP.³²³

³¹¹ Ex. NER001, MPR Testimony at 13.

³¹² Ex. NER031, [Dr.] Said Bolourchi Curriculum Vitae; Ex. NER004, SGH Testimony at 1-5.

³¹³ Ex. NER004, SGH Testimony at 2-5; Tr. at 363-64, 1105 (Bolourchi).

³¹⁴ Ex. NER031, [Dr.] Said Bolourchi Curriculum Vitae.

³¹⁵ Ex. NER032, Glenn Bell Curriculum Vitae; Ex. NER004, SGH Testimony at 5-6.

³¹⁶ Ex. NER032, Glenn Bell Curriculum Vitae; Ex. NER004, SGH Testimony at 5.

³¹⁷ Ex. NER032, Glenn Bell Curriculum Vitae.

³¹⁸ Ex. NER004, SGH Testimony at 6.

³¹⁹ *Id.* at 5.

³²⁰ Ex. NER033, Matthew Sherman Curriculum Vitae; Ex. NER004, SGH Testimony at 7-8.

³²¹ Ex. NER033, Matthew Sherman Curriculum Vitae; Ex. NER004, SGH Testimony at 7.

³²² Ex. NER004, SGH Testimony at 7.

³²³ *Id.* at 8-9.

3. NRC Staff Expert Witnesses

The Staff presented four witnesses: Angela Buford, a Structural Engineer in NRC's Office of Nuclear Reactor Regulation (NRR), Division of Engineering Structural Engineering Branch;³²⁴ Bryce Lehman, a Civil Engineer in NRR;³²⁵ Dr. George Thomas, a Senior Structural Engineer in NRR;³²⁶ and Jacob Philip, a Senior Geotechnical Civil Engineer in NRC's Division of Engineering, Office of Nuclear Regulatory Research (RES).³²⁷

Angela Buford is a Licensed Professional Engineer with over fifteen years of engineering experience.³²⁸ Ms. Buford has worked for the NRC as a structural engineer and technical reviewer in NRR since 2010.³²⁹ Ms. Buford led a team of structural engineers in evaluating ASR at Seabrook in the context of the facility's license renewal.³³⁰ Ms. Buford has also worked on three subsequent license renewal audits that addressed several novel technical issues, including irradiation of concrete and steel structures.³³¹ Additionally, she led an international team of civil and structural engineers in revising the International Generic Aging Lessons Learned report.³³² She has performed numerous briefings on a variety of technical and programmatic topics for congressional staff, the NRC Chairman, the NRC Executive Director for Operations, NRC office directors, the ACRS, NRR division management, the public, and peers.³³³

Bryce Lehman is an NRR civil and structural engineer with fifteen years of structural experience, more than ten of which are in nuclear power.³³⁴ Mr. Lehman has performed "technical, safety, and regulatory compliance reviews of license amendment requests and relief requests related to structures, including reactor containment buildings."³³⁵ Moreover, he has conducted structural reviews of multiple license renewal applications.³³⁶ Previously, as an employee of Structural Repair Group, Mr. Lehman inspected concrete structures such as condominiums and parking garages to identify structural degradation.³³⁷ As a

³²⁴ Ex. NRC002, Statement of Professional Qualifications of Angela Buford.

³²⁵ Ex. NRC003, Statement of Professional Qualifications of Bryce Lehman.

³²⁶ Ex. NRC004, Statement of Professional Qualifications of [Dr.] George Thomas.

³²⁷ Ex. NRC005, Jacob [Philip] Testimony.

³²⁸ Ex. NRC002, Angela Buford Curriculum Vitae; Ex. NRC001-R, Staff Testimony at 1.

³²⁹ Ex. NRC002, Angela Buford Curriculum Vitae.

³³⁰ *Id.*

³³¹ *Id.*

³³² *Id.*

³³³ *Id.*

³³⁴ Ex. NRC003, Bryce Lehman Curriculum Vitae; Ex. NRC001-R, Staff Testimony at 1.

³³⁵ Ex. NRC003, Bryce Lehman Curriculum Vitae.

³³⁶ *Id.*

³³⁷ *Id.*

former Design Engineer for Ralph Whitehead Associates, Inc., Mr. Lehman surveyed and inspected railroad bridges.³³⁸

Dr. George Thomas is a Licensed Professional Engineer and a Senior Structural Engineer in the NRR Division of Engineering.³³⁹ Dr. Thomas has over thirty years of experience as a structural engineer in regulatory work, the private sector, and research.³⁴⁰ Additionally, he has more than twenty-three years of experience in the United States nuclear industry with both NRC and Bechtel Power Corporation.³⁴¹ Dr. Thomas serves as the NRC voting member on the Joint American Society of Mechanical Engineers–American Concrete Institute (ASME-ACI) Code Committee for Concrete Containments.³⁴² In addition, he has made contributions to the NRC’s codes and standards activities, as well as regulatory guidance development related to analysis, design, in-service inspection, and aging management of nuclear safety-related reinforced concrete structures.³⁴³

Jacob Philip is a Licensed Professional Engineer with fifty years of experience and currently is a Senior Geotechnical Engineer in the NRC’s Office of Nuclear Regulatory Research (RES), Division of Engineering, Structural, Geotechnical, and Seismic Engineering Branch.³⁴⁴ Mr. Philip has been with the NRC for almost thirty-nine years and has authored several safety evaluation reports for existing nuclear reactors when he was in NRR.³⁴⁵ For the last seven years, Mr. Philip has developed and managed research on ASR at the NRC and is the project manager for ASR research at the National Institute of Standards and Technology.³⁴⁶

B. Admissibility/Weight of Expert Testimony

In evaluating the various issues in dispute, the Board must assign the appropriate weight to the testimony of each expert witness according to the witness’s

³³⁸ *Id.*

³³⁹ Ex. NRC004, [Dr.] George Thomas Curriculum Vitae; Ex. NRC001-R, Staff Testimony at 1.

³⁴⁰ Ex. NRC004, [Dr.] George Thomas Curriculum Vitae.

³⁴¹ *Id.*

³⁴² *Id.*

³⁴³ *Id.*

³⁴⁴ Ex. NRC006, Statement of Professional Qualifications of Jacob Philip; Ex. NRC005, Jacob [Philip] Testimony at 1.

³⁴⁵ Ex. NRC006, Statement of Professional Qualifications of Jacob Philip.

³⁴⁶ *Id.*

level of expertise.³⁴⁷ The key qualifications of all the main expert witnesses are enumerated above.

During the hearing, the Board heard from one expert witness from C-10; a multitude of expert witnesses from NextEra and its contractors who were involved in planning, executing, and submitting the LAR; and four expert Staff witnesses involved in various aspects of the review and approval of the LAR. At the beginning of the hearing, the Board inquired whether any party objected to the testimony of any expert based on a lack of qualifications. No such objection was raised.³⁴⁸

Nevertheless, in its Proposed Findings submitted after the evidentiary hearing, NextEra challenged the qualifications of C-10's expert witness, Dr. Saouma, and the bases of his opinions.³⁴⁹ NextEra would have the Board find that Dr. Saouma is qualified only to provide expert testimony on the topics of ASR and structural engineering, testing, and analysis, and that he is not qualified to testify on the topics of anchors and reinforcement anchorage, NRC licensing and regulation, knowledge of Seabrook's seismic Category I structures, the LAR and its various components, the NRC's oversight of NextEra's ASR-related activities and review of the LAR, and engineering practice.³⁵⁰

We recognize that Dr. Saouma disavowed any expertise regarding anchors,³⁵¹ but that is of no relevance here because C-10 has not made any claim concerning anchors.³⁵² We also agree that Dr. Saouma is not an expert on NRC regulations, but he was not offered as an expert on the regulations.³⁵³

We reject the remainder of NextEra's objections. In general, an expert may be qualified to testify based on knowledge, skill, experience, training, or edu-

³⁴⁷ See *Catawba*, CLI-04-21, 60 NRC at 31; *Shearon Harris*, LBP-01-9, 53 NRC at 251 (reasoning that licensing boards should give expert testimony "due weight" proportionate to their expertise); see also *Burkhart v. Wash. Metro. Transit Auth.*, 112 F.3d 1207, 1212 (D.C. Cir. 1997) (lack of specialization by an expert witness does not disqualify the expert but goes to the weight of the expert's testimony).

³⁴⁸ Tr. at 260-61.

³⁴⁹ See NextEra's Proposed Findings of Fact and Conclusions of Law at 32.

³⁵⁰ *Id.*

³⁵¹ Tr. at 674 (Saouma) ("I confess full ignorance about anchors."); Tr. at 675 (Saouma) (noting he is not "in a position" to present any testimony to contradict NextEra's evidence regarding the LSTP anchor testing); Tr. at 435 (Bayrak) (noting that Dr. Saouma confirmed reinforcement anchorage was "outside his area of expertise"); Tr. at 266 (Saouma).

³⁵² See generally C-10 Initial SOP; C-10 Rebuttal SOP.

³⁵³ It is the duty of the Board to interpret statutes and regulations, subject to Commission review. Counsel may argue how the law should be interpreted, but in general that is not a proper subject of expert testimony. See *Tennessee Valley Authority* (Clinch River Nuclear Site), LBP-18-4, 88 NRC 55, 67 n.70 (2018).

cation.³⁵⁴ Although Dr. Saouma is not a Licensed Professional Engineer, he is a preeminent researcher in the science of ASR degradation in concrete.³⁵⁵ His testimony³⁵⁶ and list of qualifications and experience³⁵⁷ reveals that he has been a technical consultant on numerous projects related to the management of ASR. We therefore find him qualified to testify regarding sound engineering practice in the management of ASR.³⁵⁸

We are also not persuaded by the argument that Dr. Saouma's review of the extensive documentation in this case was insufficient to allow him to express opinions regarding the impact of ASR on Seabrook structures. "As a general rule, questions relating to the bases and sources of an expert's opinion affect the weight to be assigned that opinion rather than its admissibility and should be left for the [trier of fact's] consideration."³⁵⁹ Dr. Saouma's written testimony explains the documentation he reviewed.³⁶⁰ He also participated in the plant tour where he had the opportunity to observe the ASR-induced degradation of various Seabrook structures, including the Containment Enclosure Building (CEB). This is a sufficient basis for his expert opinions. To the extent NextEra identified specific relevant documentation that Dr. Saouma failed to review, that goes to the weight to be afforded his testimony, not its admissibility.

Although it has not directly challenged the qualifications of any particular NextEra or Staff expert witness, C-10 generally challenged the expertise retained by NextEra to develop, and of the Staff to review, the LAR.³⁶¹ Specifically, C-

³⁵⁴ See *Duke Power Co. (William B. McGuire Nuclear Station, Units 1 and 2)*, ALAB-669, 15 NRC 453, 475 (1982); Fed. R. Evid. 702.

³⁵⁵ See Ex. INT003, Curriculum Vitae, Dr. Victor E. Saouma.

³⁵⁶ See generally Ex. INT001-R, Dr. Saouma Pre-Filed Testimony (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony; Ex. INT028, Dr. Saouma Rebuttal Testimony (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony.

³⁵⁷ See Ex. INT003, Curriculum Vitae, Dr. Victor E. Saouma.

³⁵⁸ See *Meridian Mfg., Inc. v. C&B Mfg., Inc.*, 340 F. Supp. 3d 808, 831 (N.D. Iowa 2018) (holding expert witness qualified to testify as to the obviousness of design and validity of patent claims, despite not being a licensed professional engineer, where expert had associate degree, bachelor of science degree, and master of science degree in mechanical engineering, as well as 38 years of experience in mechanical engineering and industrial design, and was named inventor of subject matter covered by six patents).

³⁵⁹ *Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 422 (5th Cir. 1987); accord *Goodrich Ave., LLC v. Sw. Water Co.*, 891 F. Supp. 2d 1364, 1382 (M.D. Ga. 2012) (holding that even though wood scientist expert witness never personally observed damage to wood floor in warehouse, he was qualified to testify, for purposes of negligence and trespass trial against water company, as to the damage floor had sustained; in forming his opinion, witness was permitted to consult other sources about the condition and nature of the flooring, and any weaknesses in his testimony went to its weight, rather than its admissibility); see *supra* note 200 and accompanying text.

³⁶⁰ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 3-5.

³⁶¹ *Id.* at 5, 7-9, 34-36; Ex. INT032, Dr. Saouma Rebuttal Testimony at 4, 7-8, 10-12.

10 criticized the lack of adequate ASR expertise of those involved in generating and reviewing the LAR.³⁶² Those parties include employees of NextEra itself, as well as the FSEL at the University of Texas, MPR, and SGH.³⁶³ Moreover, C-10 criticized the lack of ASR expertise of those involved in reviewing the LAR, including the Staff and its contractors, and the ACRS.³⁶⁴ C-10 emphasized the importance of seeking the expertise of leading researchers in the absence of established standards for evaluating the hazards posed by ASR.³⁶⁵ Thus, C-10 grounded its criticism in the need to take full advantage of the scientific research that has been performed in studying ASR degradation in concrete.

These C-10 challenges are beyond the scope of this proceeding because no admitted contention makes such a challenge. The sole province of the Board in this decision, particularly after hearing no valid objections to any experts' qualifications,³⁶⁶ is to weigh the expert testimony before us.³⁶⁷ Insofar as C-10 challenged the credentials of testifying experts, any gaps in testimony will go to the weight of expert testimony, not its admissibility.³⁶⁸ We will not, however, consider challenges to the experts retained by NextEra to develop, and the Staff to review, the LAR.

VII. MOTIONS IN LIMINE

In our June 7 and September 20, 2019 orders issued in response to NextEra's first and second Motions in Limine,³⁶⁹ respectively, we stated that we would

³⁶² Ex. INT027, Dr. Saouma Pre-Filed Testimony at 5, 7-9, 36; Ex. INT032, Dr. Saouma Rebuttal Testimony at 4, 7-8, 11-12, 43-44.

³⁶³ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 7-9; Ex. INT032, Dr. Saouma Rebuttal Testimony at 7-8 (explaining his opinion that NextEra witnesses have limited expertise on this issue). NextEra witnesses Michael Collins, John Simons, Christopher Bagley, Dr. Oguzhan Bayrak, and Edward Carley are all MPR employees. *See generally* Ex. NER001, MPR Testimony.

³⁶⁴ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 5, 36; Ex. INT032, Dr. Saouma Rebuttal Testimony at 7-8, 11-12.

³⁶⁵ Ex. INT032, Dr. Saouma Rebuttal Testimony at 7 ("[N]one of NextEra's or the NRC Staff's witnesses ha[ve] demonstrated previous involvement in the specific study of ASR The absence of such scientific expertise throughout the investigation and LAR has severely handicapped the LAR process.").

³⁶⁶ Tr. at 260-61.

³⁶⁷ *See supra* notes 199-204 and accompanying text.

³⁶⁸ *See supra* note 200 and accompanying text.

³⁶⁹ *See* NextEra's Motion in Limine to Exclude Testimony and Exhibits Regarding Structure Deformation Monitoring (Apr. 23, 2019) [hereinafter NextEra MIL 1]; NextEra's Motion in Limine to Strike or Exclude Portions of C-10's Testimony and Exhibits (Sept. 9, 2019) [hereinafter NextEra MIL 2].

defer our ruling on the disputed portions of C-10's pre-filed testimony until we had available the full evidentiary record.³⁷⁰ We now resolve those issues.

In its first Motion in Limine, NextEra argued that the scope of the reformulated contention is limited to the representativeness of the LSTP and certain aspects of the ASR Expansion Monitoring program.³⁷¹ NextEra sought to preemptively exclude all allegedly irrelevant and out of scope materials.³⁷² In its second Motion in Limine, NextEra moved to strike certain portions of C-10's testimony and exhibits deemed "irrelevant, immaterial, unduly cumulative, [and] beyond the scope" of the reformulated contention.³⁷³ NextEra disputed several portions of C-10's testimony, including the topics of steel corrosion, testing to the point of failure/the use of alternative methodologies, license renewal, peer review, mineralogy, scaling/boundary conditions, the structural deformation program, design basis loads/load factors, and improper rebuttal testimony.³⁷⁴ The Staff generally agreed with NextEra's motion.³⁷⁵

In this section, we resolve several of NextEra's objections. The remaining rulings on its Motion in Limine objections are addressed below with the Board's analysis of the specific issue to which the objection pertains.

A. Proper Scope of Rebuttal Testimony

NextEra argued that several sections of Dr. Saouma's rebuttal testimony³⁷⁶ are procedurally improper as they either consist of entirely new arguments,

³⁷⁰ Licensing Board Order (Deferring Ruling on NextEra's Second Motion in Limine) (Sept. 20, 2019) at 2 (unpublished); Licensing Board Order (Ruling on NextEra's Motion in Limine) (June 7, 2019) at 1 (unpublished).

³⁷¹ NextEra MIL 1 at 10.

³⁷² *Id.* at 11.

³⁷³ NextEra MIL 2 at 1.

³⁷⁴ *See generally* NextEra MIL 2.

³⁷⁵ NRC Staff's Ans. to NextEra's Motion in Limine (Sept. 18, 2019) at 1 n.2 [hereinafter Staff Ans. to MIL 2].

³⁷⁶ *See* Ex. INT028, Dr. Saouma Rebuttal Testimony §§ A.2, A.3, A.9, A.10, A.11, A.14, B.3, B.4, B.6, D.1.1, D.1.2, D.3.2, D.4.1, D.4.2, D.6.1, D.7.1, D.7.2, D.7.4, D.8.2, D.8.3, D.9.1, D.9.2, D.9.3, D.9.4 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony §§ A.2, A.3, A.9, A.10, A.11, A.14, B.3, B.4, B.6, D.1.1, D.1.2, D.3.2, D.4.1, D.4.2, D.6.1, D.7.1, D.7.2, D.7.4, D.8.2, D.8.3, D.9.1, D.9.2, D.9.3, D.9.4; Ex. INT029, Summary of Rebuttal Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra's Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant §§ A.2, A.3, A.9, A.10, A.11, A.14, B.3, B.4, B.6 [hereinafter Ex. INT029, Summary of Dr. Saouma Rebuttal Testimony]; Ex. INT030-R, [Supplemental] Rebuttal Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra's Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant (Revised) [hereinafter Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony].

fail to rebut testimony, or impermissibly bolster existing arguments.³⁷⁷ NextEra cited authority purporting to establish the scope of rebuttal testimony in licensing board proceedings, stating rebuttal testimony is limited “to new or surprise material”³⁷⁸ and may “not advance any new affirmative claims or arguments that should have been, but were not, included in the party’s previously filed initial written statement.”³⁷⁹ The Staff agreed with this argument,³⁸⁰ while C-10 did not.³⁸¹ For the reasons discussed below, we agree with C-10 and decline to apply that strict interpretation of rebuttal testimony to Dr. Saouma’s rebuttal testimony, summary of rebuttal testimony, and supplemental rebuttal testimony.³⁸² However, a few sections of those exhibits, as noted below, fail altogether to meet the requirements of rebuttal testimony in 10 C.F.R. § 2.1207(a)(2). Therefore, NextEra’s Motion in Limine with respect to impermissible rebuttal testimony is granted in part, denied in part.

Under 10 C.F.R. § 2.319, a licensing board has the power to “[r]estrict irrelevant, immaterial, unreliable, duplicative or cumulative evidence and/or arguments.”³⁸³ Commission precedent indicates that “a licensing board normally has considerable discretion in making evidentiary rulings.”³⁸⁴ In addition, although licensing boards may refer to the Federal Rules of Evidence for guidance,³⁸⁵ we

³⁷⁷ NextEra MIL 2 at 27-31.

³⁷⁸ *Rockwell International Corp.* (Rocketdyne Division), LBP-89-27, 30 NRC 265, 269 (1989) (permitting rebuttal testimony “only with respect to new or surprise material” included in the opposing party’s testimony).

³⁷⁹ *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-22, 70 NRC 640, 655 (2009) (“Being in the nature of rebuttal, the response, rebuttal testimony, and rebuttal exhibits are not to advance any new affirmative claims or arguments that should have been, but were not, included in the party’s previously filed initial written statement.”).

³⁸⁰ Staff Ans. to MIL 2 at 5.

³⁸¹ [C-10’s] Opposition to NextEra’s Second Motion in Limine (Sept. 19, 2019) at 19-20 [hereinafter C-10 Opp. to MIL 2].

³⁸² Ex. INT028, Dr. Saouma Rebuttal Testimony (non-public); Ex. INT029, Summary of Dr. Saouma Rebuttal Testimony; Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony; Ex. INT032, Dr. Saouma Rebuttal Testimony.

³⁸³ 10 C.F.R. § 2.319(e).

³⁸⁴ *Catawba*, CLI-04-21, 60 NRC at 27.

³⁸⁵ Although we will determine the propriety of Dr. Saouma’s rebuttal testimony within the limits imposed by 10 C.F.R. § 2.1207(a)(2), if we found it necessary to refer to the Federal Rules of Evidence for guidance, Supreme Court precedent supports our holding by recognizing that trial judges have the authority to determine the scope of rebuttal testimony “[w]ithin limits[.]” *Geders v. United States*, 425 U.S. 80, 86 (1976); *id.* at 87 (“If truth and fairness are not to be sacrificed, the judge must exert substantial control over the proceedings.”). Here, we will determine the propriety of Dr. Saouma’s rebuttal testimony within the limits imposed by 10 C.F.R. § 2.1207(a)(2). *See Settling Devotional Claimants v. Copyright Royalty Board*, 797 F.3d 1106, 1118 (D.C. Cir. 2015)

(Continued)

are not bound by them.³⁸⁶ Moreover, licensing boards do not require strict rules of evidence to prevent the presentation of unfair and prejudicial evidence to a jury,³⁸⁷ since, in Subpart L proceedings “[w]ritten prefiled testimony and exhibits are typically submitted well in advance of the evidentiary hearing, and in our most common types of hearings, the licensing boards themselves — not the parties — orally examine the witnesses.”³⁸⁸ Therefore, “the concerns of unfair prejudice and confusion addressed by the Federal Rules of Evidence are rarely at issue when licensing boards rule on the admissibility of evidence in Subpart L proceedings.”³⁸⁹

To the degree that the regulations governing this Subpart L proceeding define the scope of rebuttal testimony, the delineation is found in 10 C.F.R. § 2.1207(a)(2), which provides that rebuttal testimony must “be directed to the initial statements and testimony of other participants.”³⁹⁰ In addition, presiding officers may issue scheduling orders, delineating rules applicable to the proceeding at hand.³⁹¹ We issued several scheduling/case management orders throughout this case but declined to define the scope of rebuttal testimony,³⁹² in accord

(noting an administrative board “has the discretion” to limit rebuttal testimony, but is not required to do so); *see also Angiuni v. Town of Billerica*, 838 F.3d 34, 40 (1st Cir. 2016) (“The wide latitude afforded to trial courts extends to ‘determining whether proposed evidence is proper rebuttal.’” (quoting *United States v. Thuna*, 786 F.2d 437, 444 (1st Cir. 1986))); *United States v. Sebagala*, 256 F.3d 59, 66 (1st Cir. 2001) (stating trial courts are permitted “a wide berth in respect to regulating the scope of rebuttal testimony”); *Faigin v. Kelly*, 184 F.3d 67, 85 (1st Cir. 1999) (“The decision to allow or foreclose rebuttal evidence rests squarely within the informed discretion of the district court.”); Fed. R. Evid. 611(a) (“The court shall exercise reasonable control over the mode and order of interrogating witnesses and presenting evidence so as to . . . make the interrogation and presentation effective for the ascertainment of truth . . .”).

³⁸⁶ *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-717, 17 NRC 346, 365 n.32 (1983); 10 C.F.R. § 2.319(d).

³⁸⁷ *See Old Chief v. United States*, 519 U.S. 172, 188 n.9 (1997); Fed. R. Evid. 403.

³⁸⁸ *PSEG Power, LLC, and PSEG Nuclear, LLC* (Early Site Permit Application), LBP-16-4, 83 NRC 187, 210-11 n.171 (2016) (citing 10 C.F.R. § 2.1207).

³⁸⁹ Licensing Board Order (Ruling on Remaining Evidentiary Objections), *Crow Butte Resources, Inc.* (License Renewal for the In Situ Leach Facility, Crawford, Nebraska), No. 40-8943 (Dec. 6, 2016) at 2 (citing *PSEG Power*, LBP-16-4, 83 NRC at 210-11 n.171) (unpublished).

³⁹⁰ 10 C.F.R. § 2.1207(a)(2).

³⁹¹ *Id.* § 2.332.

³⁹² *See* Order Closing the Hearing Record; Licensing Board Order (Granting C-10’s Motion for Leave to File Supplemental Rebuttal Testimony) (Sept. 16, 2019) (unpublished) [hereinafter Order Granting C-10’s Motion to File Supplemental Rebuttal Testimony]; Licensing Board Memorandum (Regarding Pre-filed Exhibits) (Aug. 27, 2019) (unpublished); Licensing Board Order (Scheduling Pre-Hearing Teleconference and Providing Instructions) (Aug. 12, 2019) (unpublished); Licensing Board Order (Providing Case Management Instructions) (May 23, 2019) (unpublished); Licensing Board Memorandum and Order (Revised Scheduling Order) (Feb. 15, 2018) (unpublished);

(Continued)

with a presiding officer's broad authority to regulate the conduct of proceedings.³⁹³

NextEra cited four licensing board scheduling orders, two of which are unpublished, that purport to support its narrow definition of rebuttal testimony.³⁹⁴ However, those licensing board scheduling orders, which at most provide persuasive authority,³⁹⁵ are merely procedural orders that prescribe the rules for a *specific* proceeding.³⁹⁶ Contrary to NextEra's argument, procedural scheduling orders do not provide binding precedent in managing the conduct of proceedings or making evidentiary determinations. We therefore decline to apply specific statements from past scheduling orders when we did not include such language in the scheduling orders of this proceeding. Rather, we will review each disputed section to determine whether it is responsive to initial testimony, as required by 10 C.F.R. § 2.1207(a)(2).

We find most of Dr. Saouma's rebuttal testimony either explicitly responds to the initial testimony of NextEra or the Staff or it is clear from the subject of the testimony that Dr. Saouma is addressing Staff and/or NextEra initial testimony, in accordance with 10 C.F.R. § 2.1207(a)(2). In section D.6.1 of his rebuttal testimony, although Dr. Saouma does not specify the testimony to which he refers, the Board finds that Dr. Saouma's testimony on relative humidity is responsive to NextEra and Staff testimony (specifically, MPR Q214 and Staff

Licensing Board Order (Initial Scheduling Order) (Nov. 29, 2017) (unpublished); Licensing Board Order (Identifying hearing procedures, requesting information related to scheduling, and deferring deadlines for production of initial disclosures and the hearing file) (Oct. 26, 2017) (unpublished); Licensing Board Order (Scheduling Oral Argument and Providing Instructions) (June 5, 2017) (unpublished).

³⁹³ 10 C.F.R. § 2.319; *Catawba*, CLI-04-21, 60 NRC at 27.

³⁹⁴ NextEra MIL 2 at 8 n.30; *Levy*, LBP-09-22, 70 NRC at 655; *Rockwell*, LBP-89-27, 30 NRC at 269; Licensing Board Order (Revised Scheduling Order), *Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), No. 52-008-ESP (Mar. 1, 2006) at 6 (unpublished); Licensing Board Memorandum and Order (Prehearing Conference Call Summary, Case Management Directives, and Final Scheduling Order), *AmerGen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), No. 50-0219-LR (Apr. 17, 2007) at 5-6 (unpublished).

³⁹⁵ *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-13-10, 78 NRC 563, 569 n.42 (2013) ("Unreviewed board decisions are not binding on future boards They may, however, be cited by future litigants as persuasive authority.").

³⁹⁶ *Levy*, LBP-09-22, 70 NRC at 640 ("This initial scheduling order is designed to ensure proper case management of *this* proceeding" (emphasis added)); *Rockwell*, LBP-89-27, 30 NRC at 266 ("[The Administrative Judge] adopted a schedule for the filings in *this* case and also stated some ground rules that would apply to those filings." (emphasis added)); *see also* 10 C.F.R. § 2.332(a)-(c) (noting that the presiding officers may establish scheduling orders specific to the proceeding based on the circumstances of the case).

Q.36), that questions the saliency of relative humidity.³⁹⁷ In addition, rebuttal testimony sections D.7.1 and D.7.2 respond to initial testimony by Staff and NextEra witnesses that the shear beam test was conducted appropriately, and it is therefore permissible rebuttal testimony.³⁹⁸ With the exception of section B.4, each section of rebuttal testimony cited by NextEra in its table contains a reference to the initial testimony to which Dr. Saouma responds.³⁹⁹ We decline to exclude the rebuttal testimony of sections B.3, D.1.1, D.1.2, D.3.2, D.4.2, D.8.2, D.9.1, D.9.2, D.9.3, and D.9.4 as they are responsive to NextEra or Staff initial testimony in accord with 10 C.F.R. § 2.1207(a)(2).⁴⁰⁰ Rebuttal testimony section B.4, however, generally stated that NextEra should have looked beyond the codes.⁴⁰¹ This section is not responsive to any NextEra or Staff initial testimony but appears to restate a previously proffered argument.⁴⁰² Section B.4 is therefore excluded from the record as not directed to any of that initial testimony and as duplicative.

Finally, several sections of Dr. Saouma's rebuttal testimony offer no clear connection to NextEra or Staff initial testimony and must therefore be excluded as failing to fulfill the requirements of 10 C.F.R. § 2.1207(a)(2). For example, in rebuttal testimony section A.2, Dr. Saouma provides more details on his own professional background. This does not appear to address any testimony challenging Dr. Saouma's qualifications but is an attempt to impermissibly bolster his own testimony.⁴⁰³ Further, rebuttal testimony section A.9, which analogizes ASR to cancer, fails to demonstrate a connection to any NextEra or Staff initial testimony. Section A.9 is thus impermissible rebuttal testimony.⁴⁰⁴

Although we largely denied NextEra's Motion in Limine with regard to Dr. Saouma's rebuttal testimony, we will apply the appropriate evidentiary weight

³⁹⁷ See Ex. INT028, Dr. Saouma Rebuttal Testimony § D.6.1 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony § D.6.1; Ex. NER001, MPR Testimony at 151-52; Ex. NRC001-R, Staff Testimony at 48-50.

³⁹⁸ See Ex. INT028, Dr. Saouma Rebuttal Testimony §§ D.7.1, D.7.2 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony §§ D.7.1, D.7.2; Ex. NER001, MPR Testimony at 142-47; Ex. NRC001-R, Staff Testimony at 55-57.

³⁹⁹ NextEra MIL 2 at 29-31 tbl.

⁴⁰⁰ We recognize no specific citations to initial testimony are included for rebuttal testimony section B.3. *Id.* at 29. However, we find section B.3 responds to initial testimony as it is responsive to Ex. NRC001-R, Staff Testimony at 71-72.

⁴⁰¹ See Ex. INT032, Dr. Saouma Rebuttal Testimony § B.4; Ex. INT029, Summary of Dr. Saouma Rebuttal Testimony § B.4.

⁴⁰² See Ex. INT027, Dr. Saouma Pre-Filed Testimony at 7, 29-34.

⁴⁰³ See Ex. INT032, Dr. Saouma Rebuttal Testimony § A.3.

⁴⁰⁴ *Id.* § A.9.

to that testimony to ensure “that [the] hearing[] w[as] fair and produced [an] adequate record[].”⁴⁰⁵

B. License Renewal

NextEra argued that testimony related to license renewal for the Seabrook facility is beyond the scope of this proceeding.⁴⁰⁶ We agree. As stated by the Commission, the Staff granted that license renewal in a separate proceeding in which C-10 had the opportunity to participate but did not.⁴⁰⁷ NextEra’s Motion in Limine is granted as to any challenge to the license renewal.⁴⁰⁸

C. Evidence from C-10’s Emergency Petition

NextEra seeks to exclude several exhibits C-10 also filed with its Emergency Petition.⁴⁰⁹ Specifically, NextEra seeks to exclude Exhibits INT006,⁴¹⁰ INT007,⁴¹¹ INT008,⁴¹² and INT009⁴¹³ on that basis that “all . . . were rejected by the Commission” as beyond the scope of the proceeding.⁴¹⁴ Further, NextEra argued that Ex. INT007 is “largely duplicative of Dr. Saouma’s Testimony,”

⁴⁰⁵ See *Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 19 (1998); see also *North Anna*, ALAB-555, 10 NRC at 26-27. The Board would also like to emphasize that it provided an opportunity for NextEra and the Staff to respond to C-10’s supplemental rebuttal testimony, and all rebuttal testimony was filed before the hearing, permitting both parties to address those topics during the hearing in response to Board questions. Order Granting C-10’s Motion to File Supplemental Rebuttal Testimony at 4-5.

⁴⁰⁶ NextEra MIL 2 at 12-13.

⁴⁰⁷ CLI-19-7, 90 NRC at 9 n.50. Nor did C-10 meet the requirements for re-opening the license renewal proceeding. *Id.* at 9.

⁴⁰⁸ While the sufficiency of the Seabrook license renewal proceeding is beyond the scope of this proceeding, any modifications or license conditions imposed by this Board will be imposed for the entire period of licensed operation, including under the current licensing term and under the renewed licensing term. See CLI-19-7, 90 NRC at 11 (“[A]ny changes resulting from the review of the LAR will be reflected in the license renewal aging management programs.”).

⁴⁰⁹ NextEra MIL 2 at 12, 13-14.

⁴¹⁰ Ex. INT006, Declaration of Dr. Victor E. Saouma, Ph.D (Feb. 12, 2019).

⁴¹¹ Ex. INT007, Saouma, Review of Selected Documents Pertaining to the Structural Evaluation of Seabrook Nuclear Power Plant (Feb. 12, 2019) [hereinafter Ex. INT007, Dr. Saouma Review of Selected Documents] (non-public). Ex. INT031 is the public version of Ex. INT007. See Ex. INT031, Saouma, Review of Selected Documents Pertaining to the Structural Evaluation of Seabrook Nuclear Power Plant (Feb. 12, 2019) [hereinafter Ex. INT031, Dr. Saouma Review of Selected Documents].

⁴¹² Ex. INT008, Saouma, Review of Selected Documents Pertaining to the Structural Evaluation of Seabrook Nuclear Power Plant (Feb. 12, 2019).

⁴¹³ Ex. INT009, Reply Declaration of Victor E. Saouma, Ph.D (March 1, 2019).

⁴¹⁴ NextEra MIL 2 at 13.

and should be excluded as “unduly repetitious, duplicative, and cumulative.”⁴¹⁵ C-10, for its part, argued that the Commission did not find all of the supporting documentation for the Emergency Petition beyond the scope of the proceeding.⁴¹⁶ Rather, C-10 argued, the Commission made a general observation that some material submitted was beyond the scope of the proceeding.⁴¹⁷

We agree with C-10 and decline to exclude the exhibits from C-10’s Emergency Petition. As an initial matter, we note that the Commission did not explicitly find that each of the above-listed documents contained information beyond the scope of the proceeding.⁴¹⁸ Rather, the Commission noted generally that “C-10’s [emergency] petition raises issues encompassed by its admitted contention, as well as some that are beyond its scope.”⁴¹⁹ Therefore, we are not persuaded by NextEra’s argument that we should exclude these exhibits as beyond the scope of the proceeding.

In addition, we find that Ex. INT007 is not “unduly repetitious, duplicative, or cumulative,”⁴²⁰ and in certain instances, the exhibit provided additional probative testimony useful to the Board. Therefore, we decline to exclude it. The Board was neither prejudiced nor burdened in reviewing Ex. INT007. NextEra’s Motion in Limine seeking to exclude Exhibits INT006, INT007, INT008, and INT009 is denied.⁴²¹

With these NextEra challenges to the contents of the evidentiary record thus resolved, we turn to our resolution of the merits of the reformulated contention.

VIII. FINDINGS OF FACT AND BOARD ANALYSIS OF DISPUTED ISSUES

A. Representativeness of the LSTP

In the discussion below, we consider two questions regarding the LSTP undertaken for NextEra at the FSEL. First, is the data yielded by the study “repre-

⁴¹⁵ *Id.*

⁴¹⁶ C-10 Opp. to MIL 2 at 10.

⁴¹⁷ *Id.*

⁴¹⁸ CLI-19-7, 90 NRC at 6.

⁴¹⁹ *Id.* at 7.

⁴²⁰ NextEra MIL 2 at 13.

⁴²¹ Although some parts of Exhibits INT006, INT007/INT031, INT008, and INT009 may be immaterial, irrelevant, or unduly cumulative, using our judgment to review the materials and cite the relevant testimony is more efficient and fairer than a wholesale exclusion of these exhibits. On a practical note, we hardly relied on these exhibits in reaching our decision. Ex. INT007/INT031 is the only one of these exhibits cited in our Initial Decision for its substantive material and is cited in only 8 of over 1,200 footnotes.

sentative” of the progression of ASR at Seabrook and second, are the proposed monitoring, acceptance criteria, and inspection intervals adequate to address the progression of ASR. We address several representativeness issues in this section, beginning with concrete mineralogy, test specimen scaling, boundary conditions, and conclude with the effect of reinforcement. In addition, before delving into a substantive discussion of each of these issues, we address the outstanding objections from the Motions in Limine.

1. General Findings Related to Representativeness

ASR is “a [worldwide] known concrete pathology [caused by] chemical reactions between amorphous or poorly crystallized silica contained within reactive aggregates and ions from the pore solution of concrete (hydroxyls, alkalis and calcium ions).”⁴²² As a result, ASR “leads to progressive destruction of reactive aggregates and precipitation of reaction products called ‘gels’ whose composition may vary depending on local chemical equilibrium.”⁴²³ Concrete structures affected by ASR “exhibit cracking, displacements, structural deformations, pop-outs and reduction in mechanical performances. Service of structures may be severely affected. Gels are usually supposed to be the main cause of the induced swelling and degradations.”⁴²⁴

The cracking resulting from ASR is described as “map” or “pattern” cracking and is typically accompanied by dark staining adjacent to cracks on the surface of the structure.⁴²⁵ One indicator of ASR in degrading concrete is the presence of alkali-silica gel.⁴²⁶ A visual inspection of the degraded concrete’s cracking pattern may also indicate ASR.⁴²⁷

“Evaluations of structural adequacy are exercises to determine whether the ‘demands’ (i.e., load effects) on a structure or its elements exceed the ‘capacities’ (e.g., strength or stress limits) of the structure or its elements. Methods of determining appropriate demands and capacities are prescribed by specific criteria, standards, and codes.”⁴²⁸

At Seabrook, safety-related structures other than the containment are designed and constructed to comply with the 1971 edition of American Concrete Institute

⁴²² Ex. INT034, S. Poyet et al., “Chemical modelling of Alkali Silica reaction: Influence of the reactive aggregate size distribution” (2006) at 230 [hereinafter Ex. INT034, Poyet et al.] (non-public).

⁴²³ *Id.* (non-public).

⁴²⁴ *Id.* (non-public).

⁴²⁵ Ex. NER018, MPR-3727 at 1.2.2.

⁴²⁶ Ex. INT010, Original LAR at PDF 9, 64-65.

⁴²⁷ *Id.*

⁴²⁸ Ex. NER004, SGH Testimony at 16.

Standard 318, Building Code Requirements for Reinforced Concrete (ACI 318-71).⁴²⁹ The containment structure is designed and constructed to comply with the 1975 edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section III, Division 2, Subsection CC.⁴³⁰ Generally speaking, ASR was not a known issue in concrete until the early 1980s.⁴³¹ “ACI 318-71 and the ASME Code do not include provisions for the analysis of structures affected by ASR.”⁴³²

Therefore, NextEra devised its own methodology to evaluate the effects of ASR on the structural properties of seismic Category I structures at Seabrook. “To support a long-term assessment of the impact of ASR on plant structures and provide a more realistic technical basis for a monitoring program, [MPR — a consultant to NextEra] included a recommendation to perform large-scale testing to obtain more representative data than were available in public literature.”⁴³³ The LSTP is the basis for a large part of NextEra’s methodology.⁴³⁴ The LSTP involved testing large concrete specimens constructed to reflect the structural characteristics of ASR-affected structures at Seabrook.⁴³⁵ NextEra concluded that the LSTP was the best means by which to evaluate the impact of ASR on structural performance, instead of testing cores taken directly from Seabrook structures.⁴³⁶ The FSEL performed the tests on the constructed specimens.⁴³⁷

FSEL conducted tests on the concrete specimens to reflect various levels of ASR cracking and to assess the impact on selected limit states.⁴³⁸ These tests included “all relevant limit states except compression (i.e., flexure and reinforcement anchorage, shear, and anchor bolts and structural attachments to

⁴²⁹ Ex. INT010, Original LAR at PDF 13; *see* Ex. NRC049, ACI 318-71 (non-public).

⁴³⁰ Ex. INT010, Original LAR at PDF 14; *see* Ex. NRC050, ASME Code (non-public).

⁴³¹ Ex. NER019, Bayrak, O., “Structural Implications of ASR; State of the Art” (Feb. 2, 2012) (FP100697) at 19 (“Earnest efforts to establish the implications of ASR with respect to the various limit states of concrete structures (axial, flexural, shear, and anchorage strength among others) did not begin until the early 1980’s.”) [hereinafter Ex. NER019, Bayrak White Paper] (non-public).

⁴³² Ex. INT010, Original LAR at PDF 7; *see also id.* at PDF 11 (“These codes do not include methods to address the effects of ASR on the structural properties used in the design of concrete structures The analyses and testing to assess ASR material effects established a method to incorporate ASR into the Seabrook design basis that is not described in either ACI 318-71 or the ASME Code.”); Ex. INT022, SEM at PDF 12 (“Neither ACI 318-71 nor the ASME code include provisions for the analysis and evaluation of structures affected by ASR.”); Tr. at 946 (Buford).

⁴³³ Ex. NER001, MPR Testimony at 55.

⁴³⁴ Ex. INT010, Original LAR at PDF 15.

⁴³⁵ *Id.*

⁴³⁶ *See* Ex. NRC001-R, Staff Testimony at 24.

⁴³⁷ *Id.*

⁴³⁸ Ex. INT010, Original LAR at PDF 15; *see supra* note 38.

concrete).⁴³⁹ NextEra determined that “[t]he results of the test program demonstrated that none of the assessed limit states are reduced by ASR when ASR expansion levels in plant structures are below those evaluated in the [LSTP].”⁴⁴⁰ As long as ASR expansion levels are below those limits, NextEra concluded Seabrook structures “will have strength close to or in excess of that envisaged in the original design or as required by the code,”⁴⁴¹ despite the effect of ASR on the material properties of Seabrook concrete.

NextEra used LSTP test data to support other conclusions in the LAR. One of these was the effectiveness of the use of CCI to monitor the effects of ASR on the surface of Seabrook structures. The purpose of the ASR Expansion Monitoring Program is to gather crack width and extensometer measurements for monitoring against specified acceptance criteria (i.e., the ASR expansion limits) based on the LSTP to ensure ASR-related expansion at Seabrook does not exceed levels observed in the LSTP.⁴⁴² According to the LAR:

One of the objectives of the test program was to identify effective methods for monitoring ASR. The program concluded that monitoring the in-plane and through-thickness expansion is effective for characterizing the significance of ASR in structures. A [CCI] methodology based on crack width summation was shown to be effective for in-plane expansion monitoring. Snap ring borehole extensometers . . . provided accurate and reliable measurements for monitoring through-thickness expansion.⁴⁴³

“The CCI estimates expansion on a concrete surface using measurements of crack widths along a pre-determined length or grid.”⁴⁴⁴ The CCI is the weighted average of the CI in the two measured in-plane directions (horizontal and vertical) at the concrete surface.⁴⁴⁵ CI and CCI are similar yet distinct terms. CI is “[a] crack width summation technique for quantitatively estimating tensile strains experienced by a reinforced concrete element. The [CI] is the ratio of the sum of crack widths to the length of which the crack summation activity

⁴³⁹ Ex. INT010, Original LAR at PDF 16.

⁴⁴⁰ *Id.*

⁴⁴¹ *Id.* at PDF 15.

⁴⁴² Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 3-1.3, 3-1.7 to -1.8 (non-public).

⁴⁴³ Ex. INT010, Original LAR at PDF 17; *see also* Tr. at 326-27 (Bayrak) (confirming that the CCI methodology was validated in the LSTP).

⁴⁴⁴ Ex. NER022-R, MPR-4262, “Shear and Reinforcement Anchorage Testing of Concrete Affected by Alkali-Silica Reaction,” Vol. I, Rev. 1 (July 2016) & Vol. II, Rev. 0 (Jan. 2016) (FP100994) at 5-2 [hereinafter Ex. NER022-R, MPR-4262] (non-public).

⁴⁴⁵ Ex. NER004, SGH Testimony at 34.

is performed (i.e., the [gauge] length.).”⁴⁴⁶ CCI is “[a] term used at Seabrook Station for a combination of [CI] values in both the horizontal and vertical directions.”⁴⁴⁷

For the LSTP specimens, although the rate of expansion was approximately the same in all three directions until expansion reached XX to XX millimeters per meter (mm/m) (i.e., XX% to XX%), the specimens subsequently exhibited much greater expansion in the through-thickness direction than the in-plane directions.⁴⁴⁸ These observations led MPR to conclude that using the CCI to monitor in-plane expansion sufficiently characterizes ASR development until at least 1.0 mm/m (0.1%) expansion, after which through-thickness monitoring by extensometers is required to monitor further ASR expansion.⁴⁴⁹ NextEra relied on the results of the LSTP to support the installation of extensometers at an in-plane expansion of 1.0 mm/m (0.1%).⁴⁵⁰

Under the LAR, locations with no symptoms of ASR (Tier 1 areas) are generally inspected every five or ten years based on the existing SMP requirements.⁴⁵¹ Inspectors monitor locations with ASR symptoms that have CCI values below 1.0 mm/m (0.1%) in-plane expansion (Tier 2 areas) every two and a half years.⁴⁵² Locations with CCI values of 1.0 mm/m (0.1%) or greater (Tier 3 areas) are monitored for in-plane expansion, through-thickness expansion, and volumetric expansion every six months.⁴⁵³

Acceptance criteria for expansion levels directly incorporate LSTP conclusions.⁴⁵⁴ LAR Table 4 and UFSAR Table 3.8-18 provide the ASR expansion limits (i.e., acceptance criteria) intended to ensure that expansion remains within the parameters validated by the LSTP results for Seabrook structures, i.e., that ASR does not reduce the assessed limit states.⁴⁵⁵ Table 4 includes through-thickness expansion limits for shear, flexure, and reinforcement anchorage, as well as in-plane expansion limits for anchorage.⁴⁵⁶ A CCI measurement of 1.0 mm/m (0.1%) or greater expansion provides the threshold for the installation of

⁴⁴⁶ Ex. NER002, MPR Testimony — Attachment 1 — Glossary at 2 [hereinafter Ex. NER002, MPR Glossary].

⁴⁴⁷ *Id.* at 1.

⁴⁴⁸ Ex. NER001, MPR Testimony at 91.

⁴⁴⁹ Ex. INT019, MPR-4273 at B-4; Ex. INT021, MPR-4273 at B-4 (non-public).

⁴⁵⁰ Ex. NER001, MPR Testimony at 122.

⁴⁵¹ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 2-1.7 to -1.8 (non-public); Ex. NER001, MPR Testimony at 126.

⁴⁵² Ex. INT010, Original LAR at PDF 33 tbl.5.

⁴⁵³ *Id.*

⁴⁵⁴ Ex. NER001, MPR Testimony at 112.

⁴⁵⁵ Ex. INT010, Original LAR at PDF 17, 32 tbl.4.

⁴⁵⁶ *Id.* at PDF 32 tbl.4.

extensometers to determine compliance with the LAR Table 4/UFSAR Table 3.8-18 expansion limits.⁴⁵⁷

NextEra justified the use of extensometers to monitor expansion in the Tier 3 areas based on the LSTP. As the LAR explains:

NextEra is installing extensometers for measuring through-thickness expansion of plant structures. The extensometer is installed in a borehole that is perpendicular to the face of the wall (or slab). The instrument consists of two anchors and a rod. The rod is attached to the anchor installed deep in the borehole and slides through a hole in the anchor installed near the surface. Expansion is monitored by measuring the distance between the end of rod and the reference surface on the anchor near the surface. The extensometer being installed is a snap-ring borehole extensometer. It was selected because it was shown to be accurate and reliable in the [LSTP].⁴⁵⁸

The LSTP results were also used by MPR to evaluate the impact of ASR on the material properties of Seabrook concrete and to determine whether changes to those properties reduce the capacity of Seabrook structures.⁴⁵⁹ The material properties of concrete include compressive strength, tensile strength, and elastic modulus.⁴⁶⁰ Staff witnesses stated that “[t]he compressive strength of a material, including concrete, is its capacity to withstand loads or stresses that tend to compress and reduce its size, as opposed to tensile strength, which is its capacity to withstand loads or stresses that tend to elongate and crack or split the material.”⁴⁶¹ Further, “[t]he elastic modulus is the ratio of stress (force per unit area) to strain (ratio of change in length to the original length) in the elastic range of material behavior.”⁴⁶² In addition, “[t]he elastic range of a material is the range in which the material can be loaded and unloaded without permanent deformation (i.e., an elastic structure deforms when a load is applied and, when the load is removed, it returns to its original state).”⁴⁶³ The Staff defined shear strength as “the ability of a material to resist shear stress, . . . created when two

⁴⁵⁷ *Id.* at PDF 32 tbl.4, 74 tbl.3.8-18.

⁴⁵⁸ *Id.* at PDF 31.

⁴⁵⁹ Ex. INT014, MPR-4288, Rev. 0, “Seabrook Station: Impact of Alkali-Silica Reaction on Structural Design Evaluations (July 2016) (Enclosure 2 to Letter SBK-L-16071) at 9, 11 [hereinafter Ex. INT014, MPR-4288] (non-public); Ex. INT012, MPR-4288, Rev. 0, “Seabrook Station: Impact of Alkali-Silica Reaction on Structural Design Evaluations (July 2016) (Enclosure 2 to Letter SBK-L-16071) at 9, 11 [hereinafter Ex. INT012, MPR-4288].

⁴⁶⁰ Ex. NER001, MPR Testimony at 39.

⁴⁶¹ Ex. NRC001-R, Staff Testimony at 7.

⁴⁶² *Id.*

⁴⁶³ *Id.*

planes of the same object attempt to slide past one another.”⁴⁶⁴ On the other hand, [f]lexural strength (or bending strength) is the ability of a structural member to resist a flexural load (moment), or the member’s ability to resist bending when loaded.”⁴⁶⁵

NextEra described the details of reinforced concrete, stating:

Reinforced concrete is fabricated by placing wet (i.e., fresh) concrete into forms that contain mats of reinforcing bars The concrete mixture is then allowed to cure, such that it is bonded to the steel bars. In general, plain concrete (unreinforced) is relatively strong in compression (i.e., loads that push the concrete together) and relatively weak in tension (i.e., loads that pull the concrete apart). The purpose of using reinforcing bars is to provide tensile capacity. In effect, tensile strength of concrete is not relied upon for many aspects of structural design, because tensile strength of typical concrete mixtures is roughly a tenth of the compressive strength of those mixtures. Reinforced concrete can be viewed as a composite, custom-made, structural material where concrete is used for its superior capacity in compression, and reinforcing steel is used to provide tensile strength, where needed.⁴⁶⁶

Among other things, MPR evaluated the material properties of cores obtained from the LSTP specimens before testing, which “indicated reductions in compressive strength, elastic modulus, and splitting tensile strength with increasing ASR-related expansion.”⁴⁶⁷ When a core is removed from one of the test specimens, however, the confining effect of the steel reinforcement is lost.⁴⁶⁸ MPR relied upon the testing of the reinforced concrete specimens to conclude that evaluations of Seabrook structures should be based on the original material properties of the concrete rather than the degraded material properties identified in the core evaluations. MPR stated:

Design Concrete Material Properties — Published literature identified that ASR reduces unconfined material properties of concrete (compressive strength, elastic modulus, tensile strength), which is consistent with the results obtained in the [LSTP]. However, the [LSTP] results also showed that the reduction in concrete material properties does not harm the structural performance of ASR-affected structures when through-thickness expansion is less than [XX mm/m or] XX%. These results confirm that structural performance of reinforced concrete structures cannot be reasonably re-evaluated for ASR simply by adjusting the ASR-affected

⁴⁶⁴ *Id.*

⁴⁶⁵ *Id.*

⁴⁶⁶ Ex. NER001, MPR Testimony at 34.

⁴⁶⁷ Ex. NER022-R, MPR-4262 at 8-12 (non-public).

⁴⁶⁸ Ex. INT012, MPR-4288 at 6-9.

properties of unconfined concrete and neglecting the self-equilibrating state of stress due to ASR-induced prestress. Based on this observation, structural evaluations of ASR-affected structures at Seabrook Station should conservatively use the material properties specified in the original design specifications.⁴⁶⁹

Similarly, MPR relied upon the LSTP results to justify the use of the equations from ACI 318-71 and the 1975 ASME Code in its structural evaluations.⁴⁷⁰ The capacity of Seabrook structures to withstand the loads (i.e., the demand) on those structures, including the additional load created by ASR, was determined using the code equations, which had been justified by the LSTP.⁴⁷¹

Finally, NextEra relied on a correlation developed in the LSTP to determine the total through-thickness expansion in the Tier 3 locations, the locations with CCI values of 1.0 mm/m (0.1%) or greater.⁴⁷² Installation of extensometers provides a means for monitoring expansion from the time that the instrument is installed.⁴⁷³ For structural evaluations at Seabrook, however, NextEra must be able to determine the total expansion that has occurred in a location affected by ASR from the original construction, which includes both the expansion measured by the extensometer and the expansion before the extensometer installation.⁴⁷⁴ NextEra combined the expansion at such locations measured by the extensometers with “the expansion that occurred up to the time of instrument installation to yield the total through-thickness expansion to a given time.”⁴⁷⁵

To determine the expansion before instrument installation, NextEra tested cores removed from the boreholes that housed the extensometers to measure the current elastic modulus of those core samples.⁴⁷⁶ It then used “an empirical correlation developed in the [LSTP] to correlate concrete elastic modulus

⁴⁶⁹ *Id.* at 2-3; Ex. INT014, MPR-4288 at 2-3 (non-public); *see also* Ex. INT019, MPR-4273 at 5-7 (“Because the [LSTP] specimens were much more representative of Seabrook Station than published literature . . . and the [LSTP] results were highly repeatable, structural evaluations for Seabrook Station can use the [LSTP] conclusion (i.e., no loss of capacity) in lieu of the results from published literature.”).

⁴⁷⁰ Tr. at 582 (Bell) (“The validity of the code equations were amply demonstrated by the very extensive testing of the [LSTP].”).

⁴⁷¹ Tr. at 965 (Bell) (“The finite element analysis does the demand side. It determines the internal forces. The capacity is determined by the code equations, justified by the [LSTP].”); Tr. at 965 (Bolourchi) (“[W]e are saying ASR expansion, it increases the load, the total demand, but it does not decrease the capacity. Therefore, the capacity [calculated using code equations] is verified by [the LSTP].”).

⁴⁷² Ex. INT010, Original LAR at PDF 33 tbl.5.

⁴⁷³ Ex. NER001, MPR Testimony at 18, 117.

⁴⁷⁴ Ex. INT018-R, MPR-4153, Rev. 3 at iv; Ex. INT020, MPR-4153, Rev. 3 at iv (non-public).

⁴⁷⁵ Ex. INT010, Original LAR at PDF 31.

⁴⁷⁶ Ex. INT018-R, MPR-4153, Rev. 3 at 4-1; Ex. INT020, MPR-4153, Rev. 3 at 4-1 (non-public).

measurements with the through-thickness expansion to date.”⁴⁷⁷ According to NextEra, combining past expansion with the future expansion detected by the extensometers provides a total measure of through-thickness expansion in areas affected by ASR.⁴⁷⁸ The accuracy of the correlation is essential to verifying regulatory compliance because total through-thickness expansion is one of the measurements that ensures expansion remains within limits validated by the LSTP results for Seabrook structures.⁴⁷⁹

Thus, the LSTP played a critical role in determining the acceptable limits of ASR expansion for Seabrook structures, the monitoring of those structures to ensure that the limits are not exceeded, and the equations used to calculate the structures’ capacity to withstand the loads placed upon them. The expansion limits and monitoring program, which were based on the results of the LSTP, will be used to determine the regulatory compliance of Seabrook structures through the end of the extended license — that is, for the next thirty years.⁴⁸⁰

Because the LSTP evaluated the effects of ASR on test specimens, not actual Seabrook concrete, the LSTP data is reliable and may be used to support the critical safety-related determinations described above only if the test specimens are representative of Seabrook seismic Category I structures. Application of the LSTP results requires that the test specimens be representative of reinforced concrete at Seabrook.⁴⁸¹

We accept NextEra’s definition of representativeness as “[t]he ability to apply conclusions from one application to inform circumstances in another application. In the context of the reformulated contention, ‘representativeness’ refers to the results from the LSTP and their applicability to reinforced concrete structures at Seabrook Station.”⁴⁸²

To design the test specimens for the LSTP, MPR selected a reference location at Seabrook. The chosen location was a horizontal section of the west wall of

⁴⁷⁷ Ex. INT010, Original LAR at PDF 31; *see also* Ex. INT018-R, MPR-4153, Rev. 3 at iv (“The correlation relates reduction in elastic modulus with measured expansion from beam specimens used during the large-scale ASR structural testing programs and provides a conservative estimate of pre-instrument expansion levels at Seabrook Station.”); Tr. at 1001 (Carley) (“The modulus correlation was developed using only data from the [LSTP].”).

⁴⁷⁸ *See* Ex. INT010, Original LAR at PDF 31-32.

⁴⁷⁹ *Id.* at PDF 17, 32 tbl.4.

⁴⁸⁰ *See supra* Part IV.D.

⁴⁸¹ *See* Ex. NER001, MPR Testimony at 20 (“For th[e] LSTP] approach to be successful, the basis for the knowledge must be sufficiently representative of the object in question to be applicable.”); Ex. INT019, MPR-4273 at 5-7 (“Because the [LSTP] specimens were much more representative of Seabrook Station than published literature . . . and the [LSTP] results were highly repeatable, structural evaluations for Seabrook Station can use the [LSTP] conclusion (i.e., no loss of capacity) in lieu of the results from published literature.”).

⁴⁸² Ex. NER002, MPR Glossary at 3.

the B Electrical Tunnel.⁴⁸³ That tunnel was the first location where ASR was identified at Seabrook.⁴⁸⁴ NextEra concluded it was reasonable to use the B Electrical Tunnel as the reference location because the levels of ASR cracking there are “similar to other areas,” the thickness of the walls (2 feet) is consistent with “most other areas,” and the reinforcement configuration is “typical of most other structures.”⁴⁸⁵

According to MPR, the final design of the test specimens must:

- [B]e representative of the reference location so that the test results can be used to calculate its structural capacity for the given failure modes,
- [U]se materials that are representative of the material of construction of the reference location,
- [B]e sufficiently representative to the other structures at Seabrook Station such that the test results can be applied to those structures using adjustments derived from extensive published data,
- [E]nsure failure in the desired failure mode (out-of-plane shear and reinforcement anchorage, respectively), and
- [A]llow for the rapid development of ASR.⁴⁸⁶

2. Concrete

C-10 argued the composition of the LSTP concrete was not representative of Seabrook concrete.⁴⁸⁷ Concrete is comprised of “(1) coarse and fine aggregates, (gravel and sand, respectively) that provide strength; (2) cement, which functions as a glue that holds the aggregates together; and (3) water for cement hydration, which is the set of chemical reactions that transforms the cement from a dry powder to the ‘glue’ that bonds the concrete constituents together.”⁴⁸⁸

Dr. Saouma testified that NextEra used a different aggregate in the LSTP specimens than that used in Seabrook concrete.⁴⁸⁹ In particular, NextEra used

⁴⁸³ Ex. NER001, MPR Testimony at 76-77.

⁴⁸⁴ *Id.*

⁴⁸⁵ Ex. NER026, MPR-3757, Rev. 4 “Shear and Reinforcement Anchorage Test Specimen Technical Evaluation” (May 2014) at 12 [hereinafter Ex. NER026, MPR-3757] (non-public).

⁴⁸⁶ *Id.* at 16 (non-public).

⁴⁸⁷ C-10 Initial SOP at 10.

⁴⁸⁸ Ex. NER001, MPR Testimony at 34; *see also* Ex. INT031, Dr. Saouma Review of Selected Documents at 3 (“Concrete is a delicate dosage of cement, aggregates (about 3/4” max), sand and water designed to meet specific criteria.”).

⁴⁸⁹ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony (non-public) at 10-11; Ex. INT027, Dr. Saouma Pre-Filed Testimony at 10-11; Tr. at 632 (Saouma).

a blend of highly reactive coarse aggregate and slow reacting coarse aggregate along with sand as opposed to the coarse aggregate present at Seabrook.⁴⁹⁰ Dr. Saouma stated that the LSTP aggregate mixture does not have the same reactivity as Seabrook aggregate.⁴⁹¹ He further testified that “the cracking pattern that you have as the result of sand being the driving force as opposed to the aggregate is quite different.”⁴⁹² In his opinion, the cracking pattern observed in the LSTP specimens is not representative of what would happen at Seabrook.⁴⁹³

a. Motion in Limine

At the outset, we must address NextEra’s claim that testimony concerning concrete mineralogy is beyond the scope of the reformulated contention.⁴⁹⁴ We find that both the physical and chemical properties of concrete (i.e., its mineralogy) are “fairly encompassed by the description of [the admissible contentions] that [C-10] set forth in its petition for hearing.”⁴⁹⁵ The Motion in Limine is denied in this respect.

An evidentiary hearing convened in response to an intervenor challenge to a proposed agency licensing action is limited to any admitted contentions. The “reach of a contention necessarily hinges upon its terms *coupled with* its stated bases.”⁴⁹⁶ Intervenors are not required to prove their case at the contention stage, nor are they required to “provide an exhaustive list of possible bases” at that time.⁴⁹⁷ But an intervenor “may not freely change the focus of an admitted

⁴⁹⁰ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony (non-public) at 10-11; Ex. INT027, Dr. Saouma Pre-Filed Testimony at 10-11; Tr. at 604, 1001-02 (Saouma).

⁴⁹¹ Tr. at 632-33 (Saouma).

⁴⁹² Tr. at 604 (Saouma).

⁴⁹³ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 11 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11.

⁴⁹⁴ NextEra MIL 2 at 16, 17.

⁴⁹⁵ *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 310 (2010).

⁴⁹⁶ *Pilgrim*, CLI-10-11, 71 NRC at 309 (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988), *aff’d sub nom. Mass. v. NRC*, 924 F.2d 311 (D.C. Cir.), *cert. denied*, 502 U.S. 899 (1991); *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 379, 383 (2002)).

⁴⁹⁷ *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 623 (2004); *see also Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), LBP-12-17, 76 NRC 71, 85 (2012) (“[A]s long as the facts relied on by [the Intervenor] fall within the ‘envelope’ of the contention, they are properly before the Board. A petitioner is not required to set forth all of its evidence or to prove its contentions at the admissibility stage.”); *Nuclear Innovation North America LLC* (South Texas Project, Units 3 and 4), LBP-11-25, 74 NRC 380, 397 (2011) (“At the contention admissibility stage

(Continued)

contention at will’ to add a host of new issues and objections that could have been raised at the outset.”⁴⁹⁸ When an intervenor’s testimony or exhibits are alleged to fall outside the scope of an admitted contention, licensing boards must decide whether the proffered evidence is within the “reasonably inferred bounds” of the admitted contention.⁴⁹⁹ Information offered in evidence, “even if not specifically stated in the original contention and bases[, may] be relevant if it falls within the ‘envelope,’ ‘reach,’ or ‘focus’ of the contention when read with the original bases offered for it.”⁵⁰⁰

Contentions A, B, C, D, and H provided the bases of the reformulated contention, and we will therefore look to those contentions and the facts C-10 alleged in support to determine whether specific issues fall within the scope of the reformulated contention.⁵⁰¹

The reformulated contention alleges that the LSTP data fails to represent the progression of ASR at Seabrook adequately and therefore fails to provide an adequate basis for establishing monitoring, inspection criteria, and inspection intervals.⁵⁰² On its face, the reformulated contention is broad enough to cover any failure of the LSTP data to adequately represent the effect of ASR on Seabrook structures, provided that such failure is related to establishing monitoring, inspection criteria, or inspection intervals.

Contention D, one of the bases of the reformulated contention, alleged that the LSTP data fails to represent the progression of ASR at Seabrook adequately.⁵⁰³ As the Commission noted, “[i]n Contention D, C-10 challenges the *overall representative nature* of the data from the [LSTP].”⁵⁰⁴ Quoting the LAR, Contention D emphasized that “[a]pplication of the results of the [LSTP] requires that the test specimens be representative of reinforced concrete at Seabrook Station and that expansion behavior of concrete at the plant be similar to that observed in the test specimens.”⁵⁰⁵ Like the reformulated contention, Contention D implies that the allegedly inadequate test data fails to provide a sufficient basis for establishing any monitoring program or methodology. Therefore, it supports C-10’s

of a proceeding, Intervenor need not marshal their evidence as though preparing for an evidentiary hearing.”).

⁴⁹⁸ Licensing Board Order (Ruling on NextEra’s Motion in Limine) (June 7, 2019) at 7 (unpublished) (quoting *McGuire*, CLI-02-28, 56 NRC at 386).

⁴⁹⁹ *Pilgrim*, CLI-10-11, 71 NRC at 309.

⁵⁰⁰ *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), LBP-04-12, 59 NRC 388, 391 (2004).

⁵⁰¹ See *supra* Part II.B.

⁵⁰² LBP-17-7, 86 NRC at 90.

⁵⁰³ C-10 Petition at 2, 8-11.

⁵⁰⁴ CLI-18-4, 87 NRC at 94.

⁵⁰⁵ C-10 Petition at 9 (quoting Ex. INT019, MPR-4273 at 6-3).

argument that its contentions “express concern about the lack of representativeness of [LSTP] results for purposes of establishing monitoring, inspection criteria, and inspection intervals.”⁵⁰⁶

The Board also admitted Contention A, which directly challenged NextEra’s monitoring program, including its reliance on crack indexing.⁵⁰⁷ As the Board explained, “[b]ecause NextEra will use ‘an empirical correlation developed in the [LSTP]’ to correlate the concrete elastic modulus measurements it obtains from core sample testing with the through-thickness expansion to date, the validity of NextEra’s calculations depends on whether the [LSTP] specimens were representative of Seabrook concrete.”⁵⁰⁸ The Board also observed that the LAR “justifies a monitoring program based on the CCI and snap ring borehole extensometers because those methodologies were found accurate and reliable in the test program. NextEra justifies its crack width methodology on that basis.”⁵⁰⁹ The Board further noted that Contention D “maintains that the test programs’ data are not representative of the progression of ASR at Seabrook.”⁵¹⁰ Thus, “the Board’s ruling on Contention D necessarily implicates the question whether NextEra’s monitoring program will provide an adequate means of assuring that ASR progression at Seabrook remains within acceptable levels.”⁵¹¹

Because the representativeness of the LSTP concrete is at the crux of Contention D, the mineralogy of the concrete, defined as its chemical⁵¹² and physical properties,⁵¹³ is logically enveloped within the basis of that contention and the reformulated contention.⁵¹⁴ Although NextEra argued that it measured representativeness based solely on structural characteristics,⁵¹⁵ we see no such limitation

⁵⁰⁶ [C-10]’s Opposition to NextEra’s Motion in Limine at 6 (May 3, 2019) [hereinafter C-10 Opp. to NextEra MIL 1].

⁵⁰⁷ CLI-18-4, 87 NRC at 100-02; LBP-17-7, 86 NRC at 92-102.

⁵⁰⁸ LBP-17-7, 86 NRC at 100 (citations omitted).

⁵⁰⁹ *Id.* (citation omitted).

⁵¹⁰ *Id.* at 100-01.

⁵¹¹ *Id.* at 101.

⁵¹² Chemical properties refer to the chemical composition and crystalline structure. *See* Ex. NER-077, NextEra Response to Ex. INT051-R at 4. The chemical properties of particular concern to Dr. Saouma are the reactivity of the aggregate and resulting type of gel. *See* Ex. INT051-R, Dr. Saouma Supp. Testimony at 2.

⁵¹³ The physical properties include shape, hardness, strength, and size distribution of aggregate components. *See* Ex. NER077, NextEra Response to Ex. INT051-R at 4.

⁵¹⁴ We discuss the merits of the argument, below, in Part VIII.A.2.d. C-10 argued that the type of aggregate is important in determining representativeness in its original Petition. C-10 Petition at 9 (“NextEra must also systematically evaluate the concrete via petrography and physical testing of cores, and evaluate the expansive capacity of ASR based on ASTM standard tests as promulgated by ASTM Committee C-9 on Concrete and Aggregates[.]”).

⁵¹⁵ NextEra’s Proposed Findings of Fact and Conclusions of Law at 54-55; Ex. NER001, MPR
(Continued)

in the scope of Contention D, the other admitted contentions, or the reformulated contention.⁵¹⁶ We admitted testimony and exhibits indicating that the mineralogy affects the rate of ASR expansion,⁵¹⁷ the timing of ASR reactions,⁵¹⁸ the type of ASR gel,⁵¹⁹ the pattern of ASR cracking,⁵²⁰ and the use of CCI.⁵²¹ Indeed, NextEra acknowledged that the aggregate size impacts structural capacity,⁵²² and that particular chemical characteristics of ASR may affect the expansion rate and cracking pattern.⁵²³ Further, the connection between mineralogy and the use of CCI supports our finding that mineralogy is within the scope.⁵²⁴ Our holding aligns with Commission precedent because the reformulated contention is not being “changed” or impermissibly stretched.⁵²⁵ Rather, C-10 is supporting its existing arguments regarding the lack of concrete representativeness and its implications for NextEra’s reliance on CCI and elastic modulus correlation to monitor expansion.

Nevertheless, NextEra claimed that the reformulated contention is limited to a narrow list of differences between the LSTP specimens and the Seabrook structures: “age; length of time ASR has propagated; exposure to fresh water at various levels; exposure to salt in the water at different levels and concentrations;

Testimony at 21 (“[T]he FSEL testing were structurally representative of concrete used in constructing Seabrook structures.”); *id.* at 135-36; *see also* Ex. INT019, MPR-4273 at 2-6 to -7; Ex. NER077, NextEra Response to Ex. INT051-R at 5-7; Ex. NRC091, Staff Response to Ex. INT051-R at 3 (listing several characteristics NextEra used to determine representativeness).

⁵¹⁶ *See* LBP-17-7, 86 NRC at 113-14 (quoting Ex. INT019, MPR-4273 at 6-3); C-10 Petition at 11 (“[T]he [LSTP] data cannot, in any meaningful way, ‘stand in’ for or ‘represent’ the current state of in-situ concrete at the Seabrook reactor[.]”).

⁵¹⁷ Ex. NER012, The Institution of Structural Engineers, “Structural Effects of Alkali-Silica Reaction” (July 1992) at 10 [hereinafter Ex. NER012, IStructE Structural Effects of [ASR]] (non-public); *see* Ex. NRC091, Staff Response to Ex. INT051-R at 5.

⁵¹⁸ Ex. INT035, T. Katayama, “An Attempt to Estimate Past Expansion of Concrete Based on Petrographic Stage of Alkali-Silica Reaction,” Proc. 39th International Conference on Cement Microscopy, Canada, pp. 217-236 (2017) [hereinafter Ex. INT035, T. Katayama] (non-public).

⁵¹⁹ Tr. at 981-82 (Saouma); Ex. NER012, IStructE Structural Effects of [ASR] at 11 (non-public).

⁵²⁰ Tr. at 981-82, 1001-02, 1082-83 (Saouma); Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 11 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11; *see* Ex. INT040, P. Rivard and G. Ballivy, *Assessment of the Expansion Related to Alkali-Silica Reaction by the Damage Rating Index Method*, 19 Construction and Building Materials 83 (2005) at 89 [hereinafter Ex. INT040, Assessment of ASR Using DRI] (non-public).

⁵²¹ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 11 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11.

⁵²² Ex. NER077, NextEra Response to Ex. INT051-R at 3 (“The size of aggregate and the surface roughness (i.e., angular surfaces from crushing the rocks rather than smooth surfaces) can both affect the aggregate interlock mechanism for developing shear strength (i.e., capacity).”).

⁵²³ *Id.* at 4-6.

⁵²⁴ LBP-17-7, 86 NRC at 95-96.

⁵²⁵ *McGuire/Catawba*, CLI-02-28, 56 NRC at 386.

the effects of heat; and the effects of radiation.”⁵²⁶ While we agree the preceding factors are *some* of the bases of Contention D, it is not an exhaustive list. The sentence in the C-10 Petition from which this list is derived ends with the word “etc.,” confirming that it was not intended to be a complete list of C-10’s concerns, but rather a list of examples.⁵²⁷ In addition, as further elaborated below, each of these bases is a topic encompassed within the “envelope” of concrete mineralogy.

In our ruling on contention admissibility, we found that C-10 had provided sufficient factual support for those listed bases to demonstrate a genuine dispute with the LAR.⁵²⁸ There, we “concluded that Contention D was admissible as to the question of representativeness of the test program.”⁵²⁹ We expressly declined to incorporate the list of bases cited in the Petition into the text of the reformulated contention.⁵³⁰ Rather, we admitted a contention, not its bases.⁵³¹ Therefore, contrary to NextEra’s argument, we did not identify an “exhaustive list of possible bases.”⁵³² As noted, information offered in evidence, “even if not specifically stated in the original contention and bases[, may] be relevant if it falls within the ‘envelope,’ ‘reach,’ or ‘focus’ of the contention when read with the original bases offered for it.”⁵³³

Furthermore, although we reject NextEra’s overly narrow list of exclusive bases of the reformulated contention, concrete mineralogy actually permeates each of those bases. For instance, the mineralogy of the aggregate affects the length of time ASR has propagated, which NextEra acknowledged as one of the originally stated bases of the reformulated contention.⁵³⁴ One of the main reasons Seabrook concrete is susceptible to ASR and initially escaped detection is due to slowly reactive aggregate, which was not captured by a flawed American Society of Testing and Materials (ASTM) reactivity test.⁵³⁵ Therefore, the mineralogy

⁵²⁶ NextEra MIL 2 at 15 (citing CLI-18-4, 87 NRC at 104).

⁵²⁷ C-10 Petition at 11 (“Furthermore, the concrete walls of Seabrook, sitting in a salt marsh on the New Hampshire coast, present far too many variables to allow even a well-performed set of tests (as the [LSTP] tests obviously were) in Texas to reflect their characteristics: their age; the length of time ASR has propagated; the effect of the fresh water at varying levels; the effect of the salt in the water at varying levels of height and concentration; the effects of heat; the effects of radiation on certain vital structures; etc.”).

⁵²⁸ LBP-17-7, 86 NRC at 113.

⁵²⁹ CLI-18-4, 87 NRC at 104.

⁵³⁰ LBP-17-7, 86 NRC at 127.

⁵³¹ 10 C.F.R. § 2.309(a); *see Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), LBP-09-26, 70 NRC 939, 988 (2009).

⁵³² *La. Energy Servs.*, CLI-04-35, 60 NRC at 623.

⁵³³ *Catawba*, LBP-04-12, 59 NRC at 391.

⁵³⁴ NextEra MIL 2 at 15 (citing CLI-18-4, 87 NRC at 104).

⁵³⁵ Tr. at 402 (Bayrak); Ex. NRC001-R, Staff Testimony at 9-10.

of Seabrook concrete, which is slowly reactive, resulted in ASR occurring later on in the plant, affecting the overall length of time ASR has propagated at Seabrook.⁵³⁶

C-10 raised concerns regarding the effect of radiation on the reactivity of Seabrook concrete.⁵³⁷ At its core, the reactivity of ASR depends on concrete mineralogy.⁵³⁸ As acknowledged by all parties, aggregate coarseness has a substantial impact on the rate of ASR expansion.⁵³⁹ In its Petition, C-10 stated that radiation “can potentially accelerate ASR activity or cause ASR to occur with aggregates that are not normally reactive.”⁵⁴⁰ Therefore, reactivity, which is encompassed within the broader concerns of mineralogy, was raised in the Petition and is within the scope of the reformulated contention.

Furthermore, the remaining bases cited in C-10’s Petition generally relate to the effects of heat, water, and humidity on the reactivity of ASR, whose impacts vary depending on the mineralogy.⁵⁴¹ These three subjects permeate many of C-10’s concerns about ASR at Seabrook. While the semantics of C-10’s arguments have progressed, many of Dr. Saouma’s arguments are rooted in these areas.⁵⁴² For example, Dr. Saouma (1) stated NextEra’s use of CCI fails to capture internal relative humidity;⁵⁴³ (2) emphasized humidity and time as key drivers of ASR;⁵⁴⁴ (3) stated salt may corrode steel rebar if it travels through

⁵³⁶ The “length of time ASR has propagated” and “age” of the concrete are both representativeness concerns regarding temporality; thus, this conclusion stretches to two original bases. *See* Ex. INT027, Dr. Saouma Pre-Filed Testimony at 5 (“The kinetics of the [ASR] reaction (that is the rate of expansion) is a function of time, temperature and concrete relative humidity.”).

⁵³⁷ C-10 Petition at 10.

⁵³⁸ Ex. NER012, IStructE Structural Effects of [ASR] at 10-11 (non-public).

⁵³⁹ *See* Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 6, 11 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 6, 11; Ex. NER022-R, MPR-4262 at K-5 (non-public); Ex. NRC001-R, Staff Testimony at 9-10, 50-51, 62; Tr. at 633 (Simons).

⁵⁴⁰ C-10 Petition at 10 (quoting RES, NUREG/CR-7171, A Review of the Effects of Radiation on Microstructure and Properties of Concretes Used in Nuclear Power Plants, at 88-89 (Nov. 2013) (ADAMS Accession No. ML13325B077)).

⁵⁴¹ The bases discussed in this paragraph are “the effect of the fresh water at varying levels; the effect of the salt in the water at varying levels of height and concentration; the effects of heat.” C-10 Petition at 11.

⁵⁴² *See* Ex. INT027, Dr. Saouma Pre-Filed Testimony at 20 (“ASR proceeds more rapidly in hot and moist conditions.” (quoting Ex. INT019, MPR-4273 at 4-8)).

⁵⁴³ Ex. INT032, Dr. Saouma Rebuttal Testimony at 12 (“Relative humidity/temperature is a driver of the ASR reaction (if over 80%) or an impediment (if below 80%). This has an influence on CI readings . . . NextEra does not account for it in the field measurement of the CI or the subsequent finite element analysis.”); *id.* at 21-24; Ex. INT028, Dr. Saouma Rebuttal Testimony at 21-24 (non-public).

⁵⁴⁴ *See* Ex. INT027, Dr. Saouma Pre-Filed Testimony at 5.

ASR cracks;⁵⁴⁵ (4) noted ASR expansions depends on temperature, among other factors;⁵⁴⁶ and (5) suggested water below ground increases the internal relative humidity.⁵⁴⁷ These arguments stem from the Petition even though they are not stated in the same terms, relate to ASR reactivity, and fall under the reach of concerns regarding concrete mineralogy.

We also note that one component of mineralogy, the resulting type of ASR gel, was a topic initially raised by Dr. Paul Brown, the original expert cited in C-10's Petition. Specifically, Dr. Brown criticized NextEra for exhibiting a fundamental misunderstanding of ASR kinetics, stating NextEra failed to consider that the ratio of ASR gel in a structure affects the stress on the surrounding concrete.⁵⁴⁸ Therefore, mineralogy, which determines the viscosity of ASR gel,⁵⁴⁹ was an issue raised at the outset of this proceeding and is within the scope of the reformulated contention.

We therefore deny NextEra's Motion in Limine as it pertains to the physical and chemical properties of concrete.

b. C-10's Prima Facie Case

For the test specimens used in the LSTP, NextEra obtained half of the coarse aggregate from a quarry in Maine and the other half from a quarry in New Mexico.⁵⁵⁰ NextEra intentionally chose highly reactive coarse aggregate from the quarry in New Mexico to accelerate ASR expansion.⁵⁵¹ To justify that choice, NextEra witnesses stated that chemical mineralogy is not critical to representativeness.⁵⁵² It argued that even if an exact replication of Seabrook's concrete were possible, ASR expansion would not occur in a reasonable time frame to

⁵⁴⁵ *Id.* at 22; Ex. INT032, Dr. Saouma Rebuttal Testimony at 36.

⁵⁴⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 5-6, 11-13, 21-22, 33.

⁵⁴⁷ *Id.* at 21-22, 26, 33.

⁵⁴⁸ C-10 Petition at 5 (quoting P.W. Brown, Commentary on Seabrook Station License Amendment Request 16-03 at 3 (Sept. 30, 2016) (ADAMS Accession No. ML16306A248) ("ASR gel is not a compound of fixed composition. It has a variable monovalent cation-to-calcium ratio and a compositionally dependent viscosity. A high ratio produces a gel which is fluid and will accommodate to the pores and voids. As this ratio decreases the gel becomes sufficiently viscous that osmotic effects can place stress on the surrounding concrete. A local source of restraint can, for some period of time, minimize dimensional instability and cracking. However, restraint does not stop the progress of the reaction.")).

⁵⁴⁹ Ex. NER012, IStructE Structural Effects of [ASR] at 11 (non-public).

⁵⁵⁰ Tr. at 633 (Simons).

⁵⁵¹ *Id.*

⁵⁵² Ex. NER001, MPR Testimony at 82-83; Tr. at 642 (Bayrak) ("[W]e're not aiming to model the chemical reaction. This was never an intent.").

gather probative data.⁵⁵³ In accordance with industry practice, the concrete was doped with XXXX XXXX to accelerate the expansion further.⁵⁵⁴ By the time of the testing, the chemical composition of the LSTP concrete differed greatly from the concrete at Seabrook.⁵⁵⁵ NextEra determined that Seabrook concrete components matched “as closely as reasonably achievable.”⁵⁵⁶

In developing the test specimens, NextEra identified characteristics of concrete components deemed critical to structural capacity.⁵⁵⁷ For example, NextEra recognized the size and roughness of coarse aggregate was a crucial component because both can affect the “aggregate interlock mechanism for developing shear strength,” which, in turn, can affect a component’s structural capacity.⁵⁵⁸

Dr. Saouma agreed that there is a “very strong similarity” in the gradation between the aggregates used in the test specimens and the gradation of the Seabrook aggregates.⁵⁵⁹ But Dr. Saouma stated that it is also essential to have a mineralogic comparison of the aggregates.⁵⁶⁰ As noted above, ASR is a chemical reaction that produces an alkali-silicate gel that expands as it absorbs moisture.⁵⁶¹ The expansion exerts stress on the surrounding concrete and results in cracking.⁵⁶² According to Dr. Saouma, “[d]ifferent kinds of reactive aggregates or sand will cause different types of gel. The calcium content of the gel . . . is known to be critical in characterizing the ASR expansion.”⁵⁶³

As C-10 acknowledged, Dr. Saouma did not claim that the chemical characteristics of aggregates and the associated ASR gel are relevant to structural capacity.⁵⁶⁴ But C-10 relied on his testimony to support its claim that the comparative chemical characteristics of the aggregates and gels in Seabrook concrete and LSTP specimens are relevant to (1) NextEra’s program for monitoring ASR development through crack indexing; and (2) its use of the correlation method to determine past expansion.⁵⁶⁵

Dr. Saouma testified that it is necessary to have a comparison of the miner-

⁵⁵³ NextEra’s Proposed Findings of Fact and Conclusions of Law at 54.

⁵⁵⁴ See Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11; Ex. NER022-R, MPR-4262 at 3-2, 4-7, 4-11 (non-public).

⁵⁵⁵ Ex. NER022-R, MPR-4262 at 4-7, 4-11 (non-public).

⁵⁵⁶ See Ex. NRC091, Staff Response to Ex. INT051-R at 3.

⁵⁵⁷ Ex. NER077, NextEra Response to Ex. INT051-R at 3.

⁵⁵⁸ *Id.*

⁵⁵⁹ Tr. at 1074 (Saouma).

⁵⁶⁰ Tr. at 1082-83 (Saouma); Ex. INT051-R, Dr. Saouma Supp. Testimony at 1-2.

⁵⁶¹ See *supra* note 423 and accompanying text.

⁵⁶² Ex. INT010, Original LAR at PDF 9.

⁵⁶³ Ex. INT031, Dr. Saouma Review of Selected Documents at 3.

⁵⁶⁴ C-10’s Redacted Supp. Proposed Findings of Fact and Conclusions of Law at 2.

⁵⁶⁵ *Id.* at 3.

alogy of the aggregate at Seabrook and the mineralogy of the aggregate used in the LSTP “because mineralogy plays an important role in the formation of ASR, in the formation of the gel, in the type of gel, in the nature of the expansion, [and] in the type of cracks that we expect.”⁵⁶⁶ Dr. Saouma testified that reactive sand was the driving force for ASR expansion in the LSTP, whereas at Seabrook, the driving force is the coarse aggregates; therefore, the cracking pattern is likely to be entirely different.⁵⁶⁷ “[S]and will result in a rapid expansion, and aggregates will cause a slower, but larger, future expansion.”⁵⁶⁸ NextEra witness Dr. Bayrak confirmed the presence of highly reactive sand in the LSTP specimens.⁵⁶⁹ In Dr. Saouma’s opinion, because the chemical composition of the concrete in the LSTP specimens differed greatly from the concrete at Seabrook, “one could not use the cracking pattern or the expansion rates to be indicative of what would happen at Seabrook.”⁵⁷⁰ He testified that the differences between LSTP and Seabrook concrete will impact the ability to correlate “crack widths, expansions, combined crack indexing (CCIs), and crack patterns with Seabrook.”⁵⁷¹

Several reports in the record support Dr. Saouma’s opinion. He cited the work of Poyet et al., confirming that “fine aggregates (sand) will yield a faster reaction . . . than coarse ones. However, the coarse aggregates will ultimately yield larger expansion than the one caused by the sand.”⁵⁷² Also, according to the Institution of Structural Engineers (IStructE), the “type, particle size and proportion of silica in the aggregate will influence the rate and severity of the reactivity of the concrete.”⁵⁷³ The IStructE document further explains that:

The characteristics of the alkali-silica gel formed by the [ASR] reaction vary with its chemical composition, temperature, moisture content and pressure. Its consistency can range from that of heavy engine oil to that of polyethylene. Some aggregates, e.g. Danish flints, Beltane opal, generate sufficient quantities of gel for it to exude from cracks. Conversely, in most UK cases of ASR, gel is visible only when cores are petrographically examined.⁵⁷⁴

A study by Tetsuya Katayama concerning concrete expansion also supports Dr.

⁵⁶⁶ Tr. at 1082-83 (Saouma).

⁵⁶⁷ Tr. at 424-26, 604, 981-82, 1001-02 (Saouma).

⁵⁶⁸ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 6.

⁵⁶⁹ Tr. at 985 (Bayrak).

⁵⁷⁰ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11.

⁵⁷¹ *Id.*

⁵⁷² *Id.* (citing Ex. INT034, Poyet et al. at 229 (non-public)).

⁵⁷³ Ex. NER012, IStructE Structural Effects of [ASR] at 10 (non-public).

⁵⁷⁴ *Id.* at 11 (non-public).

Saouma's opinion that variations in mineralogy affect reaction vigor, reaction timing, and crack width.⁵⁷⁵

In addition, Dr. Saouma questioned the representativeness of the LSTP specimens because they "were essentially stored in a greenhouse," under very hot and very humid conditions that are not "conducive to the drying of the [concrete] surface."⁵⁷⁶ By contrast, Seabrook has lower relative humidity, and "[o]n most of the surface dry shrinkage has occurred and the first couple of inches have a lower relative humidity."⁵⁷⁷ The rate of ASR expansion "is a function of time, temperature[,] and concrete relative humidity."⁵⁷⁸ The conditions at Seabrook are quite different from the conditions at the LSTP site in Texas.⁵⁷⁹ In New Hampshire, the temperature is much lower on the surface of a concrete wall, and there is a thermal gradient with much warmer concrete and greater relative humidity inside.⁵⁸⁰ Thus, Dr. Saouma testified that conditions during the LSTP were much more conducive to the formation of ASR cracks at the concrete surface than are conditions at Seabrook.⁵⁸¹ Because of the lower relative humidity at the surface, Seabrook structures may show little or no surface cracking but may have significant interior cracking, where the relative humidity is at or above the 80% threshold necessary for ASR reactivity.⁵⁸²

The relative humidity gradient postulated by Dr. Saouma finds some support in a study of ASR in five dams in the southwestern United States.⁵⁸³ The report, conducted jointly by a private company and the Department of the Interior's Bureau of Reclamation, found that in three of the dams, "[m]ost of the concrete . . . still appears to contain enough moisture to permit expansion from [ASR]."⁵⁸⁴ Yet, "concrete within several inches of exposed surfaces [wa]s sufficiently dry to preclude expansion."⁵⁸⁵

After the evidentiary hearing, NextEra produced the Santa Ana Aggregates document, as directed by the Board in the Order granting C-10's Motion to

⁵⁷⁵ See Ex. INT035, T. Katayama.

⁵⁷⁶ Tr. at 475-76 (Saouma).

⁵⁷⁷ Tr. at 476 (Saouma).

⁵⁷⁸ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 5.

⁵⁷⁹ *Id.* at 20-21.

⁵⁸⁰ *Id.*

⁵⁸¹ Tr. at 490-94 (Saouma).

⁵⁸² *Id.*; Ex. INT007, Dr. Saouma Review of Selected Documents at 8 (non-public); Ex. INT031, Dr. Saouma Review of Selected Documents at 9; Ex. INT028, Dr. Saouma Rebuttal Testimony at 21-25 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 21-25.

⁵⁸³ See Ex. INT037, Stark, D., & De Puy, G. W. (1987). Alkali-silica reaction in five dams in southwestern United States. ACI Special Publication, 100, 1759-1786 (non-public).

⁵⁸⁴ *Id.* at 1761 (non-public).

⁵⁸⁵ *Id.* (non-public).

Compel.⁵⁸⁶ In his supplemental written testimony concerning that document, Dr. Saouma stated that it “lack[ed] a direct mineralogical comparison (both physical and chemical) between the test aggregate (and sand) and the aggregate (and sand) used in [the] Seabrook structures.”⁵⁸⁷ He further explained that he has not “found such a mineralogical comparison in any of the other documents that NextEra has identified as having information about the petrographic characteristics of Seabrook and LSTP test specimen aggregates.”⁵⁸⁸ Moreover, Dr. Saouma stated that the document failed to specify “whether the Santa Ana aggregate was used in the LSTP, or whether it was merely sampled.”⁵⁸⁹ He concluded that “NextEra has not provided enough information to allow a comparison between the mineralogy of Seabrook concrete and LSTP test specimens, and consequently the concrete is not proven to be sufficiently representative.”⁵⁹⁰

Dr. Saouma’s opinion, together with the reports he cited in support of his opinion, are sufficient to meet C-10’s burden to establish a prima facie case that the LSTP concrete is not sufficiently representative of Seabrook concrete to support NextEra’s CCI methodology. The burden of proof on that issue therefore shifts to NextEra.⁵⁹¹

C-10 also argued that the lack of data on the comparative chemical characteristics of the aggregates and gels in Seabrook concrete and LSTP test specimens undermines the reliability of the elastic modulus correlation used to determine past expansion.⁵⁹² As explained above, to determine the ASR-induced expansion before extensometer installation, NextEra uses an empirical correlation developed in the LSTP to correlate elastic modulus measurements with the through-thickness expansion to the date of the installation.⁵⁹³ The accuracy of that correlation is essential to determining total expansion and thus verifying regulatory compliance.⁵⁹⁴ C-10 has not cited any testimony or other evidence, however, sufficient to make a prima facie case on this claim. Dr. Saouma did testify that differences in aggregate chemistry may affect crack width, cracking patterns, and expansion rates.⁵⁹⁵ However, he did not provide any evidence that aggregate chemistry will change the correlation between reduced elastic mod-

⁵⁸⁶ See *supra* Part II.F.

⁵⁸⁷ See Ex. INT051-R, Dr. Saouma Supp. Testimony at 1.

⁵⁸⁸ *Id.* at 2.

⁵⁸⁹ *Id.* at 1.

⁵⁹⁰ *Id.* at 2.

⁵⁹¹ See *supra* Part III.B.1.

⁵⁹² C-10’s Redacted Supp. Proposed Findings of Fact and Conclusions of Law at 3.

⁵⁹³ See *supra* notes 476-479 and accompanying text.

⁵⁹⁴ See *infra* Part VIII.D.

⁵⁹⁵ Tr. at 981-82, 1001-02, 1082-83 (Saouma); Ex. INT032, Dr. Saouma Rebuttal Testimony at 12.

ulus and past expansion. We therefore will not consider further the claim that the comparative chemical characteristics of the aggregates and gels in Seabrook concrete and LSTP test specimens undermine the reliability of the elastic modulus correlation.

c. NextEra and Staff Responses

NextEra expert witness Dr. Bayrak confirmed the use of different aggregate in the LSTP concrete.⁵⁹⁶ NextEra argued, however, that the composition was similar to Seabrook.⁵⁹⁷ The Staff agreed with NextEra and argued the LSTP is sufficiently representative even if the coarse aggregate is not identical.⁵⁹⁸ The Staff reviewed each component of the LSTP, finding each to be representative and/or bounding of the concrete at Seabrook.⁵⁹⁹ The Staff found that the test specimens “reflected the typical characteristics of ASR-affected structures at Seabrook[,]” such as utilizing a similar scale and structural context and similar reinforcement ratios and configurations.⁶⁰⁰ The Staff also determined the concrete of the test specimens reasonably reflected the properties of the concrete in Seabrook structures.⁶⁰¹

NextEra maintained that it provided sufficient information to permit an adequate mineralogical comparison of the LSTP aggregate and the Seabrook aggregate.⁶⁰² Several of the documents it cited, however, while apparently produced during the mandatory disclosure process, were not entered into evidence.⁶⁰³ We may not base our ruling on documents that are not part of the evidentiary record.⁶⁰⁴ But we need not determine whether NextEra produced sufficient information to permit a comparison of the chemical characteristics of the LSTP aggregate and the Seabrook aggregate, because NextEra witnesses acknowledged that “to achieve bounding levels of ASR expansion in a useful timeframe

⁵⁹⁶ Tr. at 985 (Bayrak).

⁵⁹⁷ Tr. at 633-34 (Simons) (stating SGH sent the blend of aggregate to an expert petrographer who confirmed its similarity to the plant).

⁵⁹⁸ NRC Staff SOP at 32-33.

⁵⁹⁹ *Id.* at 33.

⁶⁰⁰ *Id.* at 34.

⁶⁰¹ *Id.* at 35 (“For example, the concrete mix design for the specimens was based on specifications used at Seabrook (e.g., compressive strength, coarse aggregate gradation and type, water-to-cement ratio, cement type, aggregate proportions) and, in part, included constituents obtained from sources similar to those used during the construction of the plant.”).

⁶⁰² See NextEra Motion to Compel Letter at 2; Ex. NER077, NextEra Response to Ex. INT051-R at 7-8.

⁶⁰³ NER077, NextEra Response to Ex. INT051-R at 8 n.29.

⁶⁰⁴ See 10 C.F.R. § 2.713(c) (“An initial decision will . . . be based on the whole record and supported by reliable, probative, and substantial evidence.”).

. . . the LSTP necessarily used a faster-reacting aggregate with similar physical characteristics (i.e., size and surface roughness), but with different chemical characteristics (composition, crystalline structure).”⁶⁰⁵ Thus, it is undisputed that the Seabrook aggregate and the LSTP aggregate differed in their chemical composition and structure. The question we must resolve is whether those acknowledged differences are important in determining representativeness.

NextEra witnesses stated that the acknowledged differences are not important.⁶⁰⁶ They testified that “[t]he LSTP did not include any critical characteristics that pertain to the chemical characteristics of the minerals in the aggregate.”⁶⁰⁷ They agreed with Dr. Saouma on “several key facts . . . including the importance of the crystalline structure of the silica within the aggregate on reactivity, the importance of aggregate chemical characteristics on reaction rate, and the fact that expansion of gel causes cracking.”⁶⁰⁸ NextEra witnesses “also acknowledge[d] that differences in concrete mixture design may result in ASR gel with different chemical and physical attributes,”⁶⁰⁹ and “that differences in concrete mixture design may affect the typical crack pattern.”⁶¹⁰ But they emphasized that “NextEra’s approach is focused on the structural implications of ASR across a wide range of expansion levels” and that “[t]hese structural implications are not significantly affected by the rate of reaction, characteristics of the gel, or the specific pattern of microcracks comprising a given expansion level.”⁶¹¹

The Staff agreed with NextEra that the differences in concrete between Seabrook and the LSTP specimens are not significant for the purposes of determining representativeness.⁶¹² The Staff’s conclusion “that the Seabrook ASR expansion monitoring program is acceptable and provides reasonable assurance that Seabrook structures will continue to meet the NRC’s requirements”⁶¹³ remained unchanged after NextEra produced the Santa Ana Aggregates Report.

d. Findings of Fact and Board Analysis

As noted above, it is undisputed that the Seabrook aggregate and the LSTP aggregate differed in their chemical composition and structure. Although Dr. Saouma’s concerns regarding concrete representativeness do not invalidate the

⁶⁰⁵ Ex. NER077, NextEra Response to Ex. INT051-R at 4 (citations omitted).

⁶⁰⁶ *Id.*

⁶⁰⁷ *Id.*

⁶⁰⁸ *Id.* at 5 (citing Ex. NER001, MPR Testimony at 38-39, 45).

⁶⁰⁹ *Id.* (citing Ex. NER001, MPR Testimony at 82).

⁶¹⁰ *Id.* (citing Tr. at 603 (Simons)).

⁶¹¹ *Id.* (emphasis omitted).

⁶¹² Ex. NRC091, Staff Response to Ex. INT051-R at 3-4.

⁶¹³ *Id.* at 6.

CCI,⁶¹⁴ he has raised significant questions whether the chemical characteristics of the LSTP aggregates and the associated ASR gel were sufficiently representative of Seabrook concrete. In particular, the Board accepts Dr. Saouma's testimony that differences in aggregate chemistry affect crack width, cracking patterns, and expansion rates.⁶¹⁵

The lack of concrete representativeness identified by Dr. Saouma may compromise the reliability of the extensometer threshold for extensometer installation of 1.0 mm/m (0.1%) (the extensometer threshold). Differences in crack width, cracking patterns, and expansion rates imply that monitoring of surface cracking using the CCI may be insufficient to reliably determine when extensometers should be installed to detect significant interior cracking of Seabrook structures. As explained previously, NextEra uses the CCI to monitor the effects of ASR on the surface of Seabrook structures and to determine when to install extensometers to monitor through-thickness expansion.⁶¹⁶ The monitoring methodology is derived from the LSTP.⁶¹⁷ For the LSTP specimens, the rate of expansion was approximately the same in all three directions until expansion reached XX to XX mm/m (XX% to XX%).⁶¹⁸ Thereafter, the LSTP specimens exhibited much greater expansion in the through-thickness direction than the in-plane directions.⁶¹⁹ These observations led NextEra to conclude that using the CCI to monitor in-plane expansion sufficiently characterizes ASR development until at least 1.0 mm/m (0.1%) expansion, after which through-thickness monitoring by extensometers is required to monitor further ASR expansion.⁶²⁰

To ensure that through-thickness expansion will be adequately monitored before the limit is reached, which is critical for the adequate protection of public health and safety, the extensometer threshold must be accurate and reliable.

⁶¹⁴ Tr. at 426 (Saouma).

⁶¹⁵ Tr. at 981-82, 1001-02, 1082-83 (Saouma); Ex. INT032, Dr. Saouma Rebuttal Testimony at 12.

⁶¹⁶ See *supra* notes 448-450 and accompanying text.

⁶¹⁷ See Ex. NER001, MPR Testimony at 91-92, 122.

⁶¹⁸ Ex. NER020, MPR 0326-0062-88, Rev. 2, "Initial Expansion Assessment of ASR-Affected Reinforced Concrete Structures at Seabrook Station" (Mar. 2018) (FP101070, Rev. 1) at 5 [hereinafter Ex. NER020, MPR 0326-0062-88, Rev. 2] (non-public).

⁶¹⁹ *Id.* (non-public). The relationship between the CCI and through-thickness expansion observed in the LSTP specimens is illustrated in figure 4, Ex. NER003, MPR Testimony — Attachment 2 — Proprietary Appendix at 5 fig.4 [hereinafter Ex. NER003, MPR Testimony, Proprietary Appendix] (non-public). NextEra's monitoring program reflects its determination that Seabrook structures will exhibit a cracking pattern equivalent to that shown in figure 4, and that therefore extensometers need not be installed until in-plane expansion reaches 1.0 mm/m (0.1%). A different cracking pattern, however, could be problematical. If the CCI plateaus below 1.0 mm/m (0.1%), the through-thickness expansion rate is faster than shown in figure 4, or both, significant through-thickness expansion may occur before an extensometer is installed.

⁶²⁰ Ex. INT019, MPR-4273 at B-4; Ex. INT021, MPR-4273 at B-4 (non-public).

Because the Board questions whether the LSTP specimens were sufficiently representative of Seabrook concrete,⁶²¹ we also question NextEra's reliance on the LSTP data to justify the 1.0 mm/m (0.1%) extensometer threshold. Absent a reliable threshold, through-thickness expansion near or even above the expansion limit may occur before the 1.0 mm/m (0.1%) extensometer threshold is reached, and therefore before the installation of extensometers. Thus, significant internal cracking may go undetected.⁶²² That would compromise the reliability of NextEra's structural capacity evaluations, which are premised on through-thickness expansion remaining within the limits identified in the LSTP.⁶²³

Therefore, although C-10 agreed that the differing chemical characteristics of the aggregates and the associated ASR gel do not impact structural capacity,⁶²⁴ the Board finds that those differing characteristics create substantial uncertainty as to whether the LSTP specimens were sufficiently representative of Seabrook concrete that they may serve as the basis of the CCI.

In support of CCI, NextEra and Staff witnesses testified that it is a generally accepted approach for measuring the rate of ASR expansion in concrete structures.⁶²⁵ We are concerned, however, with the specific question whether the LSTP specimens are sufficiently representative of Seabrook concrete such that the crack widths, cracking patterns, and expansion rates observed in the test specimens justify the conclusion that significant through-thickness expansion will not occur in Seabrook seismic Category I structures as long as the CCI remains below the 1.0 mm/m (0.1%) extensometer threshold. General statements concerning the widespread acceptance of CCI are of little help in resolving that issue.

The Staff concluded that the LSTP was sufficiently representative of the structures at Seabrook, that interior cracking without surface cracking was not observed during the LSTP, and that the LSTP demonstrated that interior and surface cracking advanced together until surface cracking plateaued.⁶²⁶ To the

⁶²¹ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 8, 9-17 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 8, 9-17; Ex. INT032, Dr. Saouma Rebuttal Testimony at 2.

⁶²² This concern is illustrated in figure B-2, Ex. INT021, MPR-4273 at B-5 fig.B-2 (non-public). The yellow rectangle, entitled "Approaching Expansion Limit Reevaluate Extensometer Threshold," represents possible locations with CCI less than 1.0 mm/m (0.1%) but through-thickness expansion greater than XX mm/m (XX%). *Id.*; Ex. INT019, MPR-4273 at B-5 fig.B-2.

⁶²³ Ex. INT010, Original LAR at PDF 19-20; Ex. NER001, MPR Testimony at 60.

⁶²⁴ C-10's Redacted Supp. Proposed Findings of Fact and Conclusions of Law at 2.

⁶²⁵ Ex. NRC001-R, Staff Testimony at 62 (citing Ex. NER013, U.S. Department of Transportation, Federal Highway Administration (FHWA), "Report on the Diagnosis, Prognosis, and Mitigation of Alkali-Silica Reaction (ASR) in Transportation Structures" (FHWA-HIF-09-004) (Jan. 2010) [hereinafter Ex. NER013, FHWA Report]); *see also* Tr. at 319-20 (Simons), 323-27 (Bayrak), 482-85 (Bayrak).

⁶²⁶ Tr. at 1132-34 (Buford); NRC Staff SOP at 57-62.

extent the Staff relied on those conclusions to justify the 1.0 mm/m (0.1%) extensometer threshold, we are not persuaded. Dr. Saouma has convincingly testified that the acknowledged differences in aggregate chemistry affect crack width, cracking patterns, and expansion rates. For the reasons explained above, those differences cause the Board to question the reliability of the application of the 1.0 mm/m (0.1%) extensometer threshold to Seabrook structures.

Dr. Bayrak testified that more than 200 cores have been taken at Seabrook and there have been “zero occurrence[s] of a delamination crack.”⁶²⁷ We understand that the Staff refers to this evidence when it stated that “field evidence from cores that were removed at Seabrook in support of the installation of extensometers at both above and below ground locations has not shown any indications of structural concern in the concrete interior.”⁶²⁸ But we do not find evidence regarding the lack of an observed delamination crack to date sufficient to justify the 1.0 mm/m (0.1%) extensometer threshold for extensometer installation. Those are different issues. The concern remains that, because LSTP data was not sufficiently representative of Seabrook concrete, through-thickness cracking approaching the expansion limit may occur even though the extensometer threshold has not been reached.

In Appendix B to MPR-4273 (referred to as “Check 3”), MPR recommended a monitoring program to check the reliability of the extensometer threshold, albeit for different reasons than those urged by Dr. Saouma. As MPR explained, “NextEra has installed several extensometers in locations where in-plane expansion is less than 1.0 mm/m [0.1%]. This provides the opportunity to check consistency of expansion behavior over the entire range exhibited at Seabrook Station.”⁶²⁹ The Board understands that these are the “control extensometers” referred to in the SMP.⁶³⁰

MPR noted that “[f]or the [LSTP] specimens, the point at which expansion reoriented primarily in the through-thickness direction varied between specimens,” even though the specimens “were essentially identical.”⁶³¹ MPR recognized that “[d]ata from Seabrook Station may exhibit further variability from differences in configuration (e.g., wall thickness) and confinement (e.g., from

⁶²⁷ Tr. at 1097 (Bayrak). Delamination is “a crack between . . . two reinforcing mats.” Ex. INT027, Dr. Saouma Pre-Filed Testimony at 17 fig.10. We address the issue of delamination cracks *infra* Part VIII.D.

⁶²⁸ Ex. NRC001-R, Staff Testimony at 64.

⁶²⁹ Ex. INT019, MPR-4273 at B-5; Ex. INT021, MPR-4273 at B-5 (non-public).

⁶³⁰ Ex. NER007, Seabrook [SMP] Manual Rev. 7, app. B, tbl.2. See Ex. NER001, MPR testimony at 150 (stating that extensometers were also installed in ten locations with ASR-induced expansion less than 1.0 mm/m (0.1%)).

⁶³¹ Ex. INT019, MPR-4273 at B-5; Ex. INT021, MPR-4273 at B-5 (non-public).

deadweight).”⁶³² The Board finds Check 3 also necessary because Dr. Saouma has identified another potential source of variability that could also affect the reliability of the extensometer threshold — the differences in the chemistry of the LSTP concrete and Seabrook concrete that may affect crack width, cracking patterns, and expansion rates.

The Staff made Check 3 a mandatory condition when it granted the license amendment.⁶³³ Pursuant to Check 3, NextEra will:

[P]erform an engineering evaluation if the periodic expansion check identifies either of the following circumstances:

- Any location with CCI less than [1.0] mm/m [0.1%] exhibits through-thickness expansion approaching the test program limit (i.e., greater than [XX mm/m] XX%). Such an observation would challenge the premise that an extensometer is not needed for locations with a CCI of less than [1.0] mm/m [0.1%]. The engineering evaluation would focus on the suitability of this criterion.
- The general trend of expansion behavior at Seabrook Station significantly departs from the expansion behavior of the [LSTP] specimens. The expected trend at Seabrook Station is that in-plane and through-thickness expansion values will be comparable at lower expansion levels and eventually transition to predominately through-thickness expansion.⁶³⁴

Check 3 will help resolve the Board’s concern that the 1.0 mm/m (0.1%) extensometer threshold may not provide reasonable assurance of adequate protection of public health and safety. Nevertheless, we have identified a significant problem with the schedule for monitoring the control extensometers. Extensometers in Tier 3 areas, those locations where the 1.0 mm/m (0.1%) extensometer threshold has been exceeded, are to be monitored every six months.⁶³⁵ But the extensometers installed where in-plane expansion is less than 1.0 mm/m (0.1%) (i.e., the control extensometers) will only be monitored for through-thickness expansion in 2025 and every ten years thereafter.⁶³⁶ This schedule fails to provide adequate protection of public health and safety. As noted, one purpose of Check 3 is to determine whether the extensometer threshold of 1.0 mm/m (0.1%) will assure that extensometers will be installed before through-thickness

⁶³² Ex. INT019, MPR-4273 at B-5; Ex. INT021, MPR-4273 at B-5 (non-public).

⁶³³ See Ex. INT024, Final SE at PDF 67-69.

⁶³⁴ Ex. INT019, MPR-4273 at B-5 to -6; Ex. INT021, MPR-4273 at B-5 to -6 (non-public).

⁶³⁵ See Ex. INT010, Original LAR at PDF 65.

⁶³⁶ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 3-1.7 to -1.8 (non-public); Ex. NER001, MPR Testimony at 62; Ex. INT019, MPR-4273 at B-5; Ex. INT021, MPR-4273 at B-5 (non-public). NextEra conducts in-plane monitoring of ASR expansion every thirty months for structures with less than 1.0 mm/m (0.1%) of ASR expansion. Ex. INT010, Original LAR at PDF 33 tbl.5.

expansion approaches the expansion limit. As Check 3 explains, the observation of an area with a CCI less than 1.0 mm/m (0.1%) that exhibits through-thickness expansion approaching the expansion limit “would challenge the premise that an extensometer is not needed for locations with a CCI of less than [1.0] mm/m [0.1%].”⁶³⁷ That premise is fundamental to NextEra’s monitoring program, and if it is incorrect, potentially damaging ASR expansion could go undetected for years.

There is no apparent reason why NextEra should not monitor the control extensometers every six months. The burden of doing so is not significant, given that monitoring only requires extensometer removal, measurement, and replacement. NextEra already monitors numerous extensometers in the Tier 3 areas every six months.⁶³⁸ Monitoring the control extensometers every six months should ensure the prompt detection of any observation that would challenge the criterion (i.e., the threshold) for extensometer installation. In the event of such an observation, Check 3 requires NextEra to perform an engineering evaluation focusing on the continued suitability of that criterion.⁶³⁹

The Board therefore modifies Check 3 as follows:

NextEra shall undertake the monitoring required by MPR-4273, Appendix B, Check 3, for control extensometers every six months, rather than in 2025 and every ten years thereafter.

The Board concludes that its modification of the Check 3 monitoring condition is necessary to provide reasonable assurance. With that modification, NextEra’s CCI methodology satisfies the reasonable assurance standard despite the acknowledged differences in the chemical characteristics of the LSTP aggregate and the Seabrook aggregate.

One issue remains regarding the CCI. Dr. Saouma testified that NextEra should have only used crack width indexing in conjunction with advanced petrography.⁶⁴⁰ He relied on the FHWA Guideline, which recommends a combination of crack width indexing and petrography for the preliminary investigative stage of an ASR assessment program and encourages its use during the later detailed study stage.⁶⁴¹ NextEra did perform crack width indexing and petrography during its preliminary investigation.⁶⁴² We agree with NextEra that for the purpose of determining whether surface cracking has reached the threshold

⁶³⁷ Ex. INT019, MPR-4273 at B-5 to -6; Ex. INT021, MPR-4273 at B-5 to -6 (non-public).

⁶³⁸ See Ex. NER007, Seabrook [SMP] Manual Rev. at B-12 to -16 tbl.2 (non-public).

⁶³⁹ Ex. INT019, MPR-4273 at B-4 to -6; Ex. INT021, MPR-4273 at B-4 to -6 (non-public).

⁶⁴⁰ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 20.

⁶⁴¹ *Id.*; see Ex. NER013, FHWA Report at 3-6.

⁶⁴² Ex. NER004, SGH Testimony at 32, 35-36 (citing Ex. NER028, SG&H Report 110594-RPT-02, Rev. 1, “Damage Rating Index and ASR Rating” (Feb. 10, 2012) (FP100702)).

for extensometer threshold, further petrography is not required because NextEra assumes that all cracking at Seabrook is caused by ASR unless proven otherwise.⁶⁴³ We address the separate question whether petrography should be required for cores removed from Seabrook concrete *infra* Part VIII.E.

3. Test Specimen Scaling, Reinforcement, and Size

a. Motion in Limine

We find that discussion regarding the scaling of LSTP test specimens “is fairly encompassed by the description of” the admissible contentions that C-10 outlined in its petition.⁶⁴⁴ Accordingly, NextEra’s second Motion in Limine is denied in this respect.⁶⁴⁵ We find section C.2.2 of Dr. Saouma’s pre-filed testimony,⁶⁴⁶ and all testimony related to prototype scaling, including specimen dimensions, loads, and boundary conditions within the scope of the reformulated contention.⁶⁴⁷

Stated briefly, Dr. Saouma testified that there is a significant problem with the scaling of LSTP test specimens, such that representativeness is jeopardized.⁶⁴⁸ Dr. Saouma stated that “[a] significant problem with the [LSTP] testing is the failure to ensure that the relative dimensions of the concrete beam that was tested were scaled to the prototype (i.e., the Seabrook reactor).”⁶⁴⁹ Consequently, “the corresponding load will not be representative.”⁶⁵⁰ Dr. Saouma testified that the

⁶⁴³ Ex. NER001, MPR Testimony at 151-52.

⁶⁴⁴ *Pilgrim*, CLI-10-11, 71 NRC at 310.

⁶⁴⁵ In NextEra’s second Motion in Limine, it refers to Dr. Saouma’s arguments as those pertaining to “scaled prototype” specimens. See NextEra MIL 2 at 15, 17. However, the specific section of Dr. Saouma’s Pre-Filed Testimony is titled, “Specimen dimensions, loads and boundary conditions.” See Ex. INT027, Dr. Saouma Pre-Filed Testimony § C.2.2. Section C.2.2 of Dr. Saouma’s Pre-Filed Testimony includes § C.2.2.2, which is titled “Boundary Conditions.” *Id.* at 12-13. In this Initial Decision, we address all motion in limine issues relating to boundary conditions in this section and the following section. We address boundary conditions on the merits in the next section.

⁶⁴⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11-13.

⁶⁴⁷ This includes: Ex. INT027, Dr. Saouma Pre-Filed Testimony §§ C.2.2, C.2.2.2; Ex. INT028, Dr. Saouma Rebuttal Testimony §§ D.3.2, D.4.1, D.4.2 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony §§ D.3.2, D.4.1, D.4.2.

⁶⁴⁸ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11-12.

⁶⁴⁹ *Id.* at 11. Dr. Saouma explained that “[b]efore testing a model, one must first determine the largest dimension that can be accommodated in the laboratory (say x inches), and then determine the corresponding one in the prototype (in this case Seabrook) (most likely the thickness of the wall, say y inches). Then one would determine the scaling parameter alpha by taking the ratio of the two (y divided by x). This ratio should be respected in all other dimensional quantities (especially reinforcement location and ratios) for a correctly designed test. And the ratio will in turn govern the location of the reinforcement and the diameter of the reinforcement.” *Id.* at 11-12.

⁶⁵⁰ *Id.* at 12.

LSTP failed to account for boundary conditions.⁶⁵¹ Specifically, he claimed that “[i]n a test, the model must be subjected to the same conditions (support, restraints and load) as the prototype (Seabrook).”⁶⁵² Dr. Saouma also testified that the failure to model both in-plane and out-of-plane shear, in addition to the lack of proper scaling and boundary conditions, renders the LSTP not representative.⁶⁵³

NextEra asserted that Dr. Saouma’s testimony as related to scaled prototype specimens attempts to shift the focus of the reformulated contention to an entirely new set of bases that could have been, but were not, raised at the outset of this proceeding.⁶⁵⁴ It claimed that Dr. Saouma’s concerns regarding scaled prototype specimens were not raised in C-10’s Petition, and as a result, constitute new arguments.⁶⁵⁵

C-10 maintained that Dr. Saouma’s arguments are properly before the Board⁶⁵⁶ and that virtually every aspect of Dr. Saouma’s testimony relates to the question whether the LSTP is representative of the progress of ASR at Seabrook over time.⁶⁵⁷

We first address NextEra’s claims that Dr. Saouma’s arguments are “new” and not part of the original list of bases. As stated above, *supra* Part VIII.A.2.a, we decline to take such a narrow view of the bases of the reformulated contention. Rather than introducing a new series of claims, we find that Dr. Saouma’s explanations clarify issues identified in C-10’s Petition and amplified in its Reply to the Staff.⁶⁵⁸

In its Reply, C-10 queried whether achieving the goal of obtaining representativeness would have been better served had NextEra removed “choice sections from the ASR-affected concrete in the unused Unit 2 at Seabrook Station[.]”⁶⁵⁹ We find this argument sufficient to suggest that C-10 was concerned that the size, dimensions, and boundary conditions of the test specimens did not match Seabrook structures.

Representativeness is the crux of Contention D and, ultimately, of the reformulated contention. As explained in further detail, *supra* Part II.B, these

⁶⁵¹ *Id.* at 12-13.

⁶⁵² *Id.* at 12.

⁶⁵³ *Id.*

⁶⁵⁴ NextEra MIL 2 at 15-17.

⁶⁵⁵ *Id.*

⁶⁵⁶ See C-10 Opp. to MIL 2.

⁶⁵⁷ *Id.* at 11-13.

⁶⁵⁸ See *La. Energy Servs.*, CLI-04-25, 60 NRC at 224 (approving licensing board’s decision to consider information in petitioners’ reply briefs that “legitimately amplified” issues presented in the initial petitions).

⁶⁵⁹ C-10’s Reply at 4.

material disputes challenge the adequacy of the LAR's monitoring program, acceptance criteria, and inspection intervals. NextEra asserted that the reformulated contention is limited to a narrow list of differences between the LSTP and the Seabrook structures.⁶⁶⁰ Although we agree that these factors constitute *some* of the bases that form Contention D, as more fully explained above, they by no means represent an exhaustive list.⁶⁶¹ Accordingly, we find that C-10's testimony on prototype scaling supports its existing arguments regarding the lack of representativeness and its implications for the LSTP.⁶⁶²

In our ruling on contention admissibility, we "concluded that Contention D was admissible as to the question of [the] representativeness of the [LSTP]." ⁶⁶³ NextEra witnesses explained that one of the primary reasons necessitating the use of the LSTP was that "published test results for selected limit states were from specimens that were too small to be considered representative." ⁶⁶⁴ Further, NextEra witnesses stated that the LSTP was conducted to obtain more representative data than was available in public literature.⁶⁶⁵ Because scaling was a key parameter of representativeness, and a primary factor in initially conducting an LSTP, there clearly is a connection between scaling and representativeness.

Dr. Saouma alleged multiple errors in the design of the LSTP.⁶⁶⁶ These errors relate to specimen dimensions, loads, and boundary conditions in the scaled prototype.⁶⁶⁷ We find NextEra's assertion that Dr. Saouma's testimony falls outside the scope of issues unpersuasive.⁶⁶⁸ The issue of prototype specimen scaling is covered within the bases⁶⁶⁹ of Contention D and the reformulated contention.⁶⁷⁰

Therefore, NextEra's Motion in Limine, with regards to prototype scaling, specimen dimensions, loads, and boundary conditions, is denied.

⁶⁶⁰ See NextEra MIL 2 at 2-3. Chief among those, age, and "the length of time ASR has propagated." C-10 Petition at 11.

⁶⁶¹ See *supra* Part VIII.A.2.a.

⁶⁶² See *La. Energy Servs.*, CLI-04-35, 60 NRC at 623.

⁶⁶³ CLI-18-4, 87 NRC at 104 (citing LBP-17-7, 86 NRC at 114).

⁶⁶⁴ Ex. NER001, MPR Testimony at 138 ("A detailed comparison of the test specimens to the reference location is included in [Ex. NER026,] MPR-3757[.]").

⁶⁶⁵ *Id.* at 54-55.

⁶⁶⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11-13.

⁶⁶⁷ *Id.*

⁶⁶⁸ NextEra MIL 2 at 15-17.

⁶⁶⁹ *La. Energy Servs.*, CLI-04-35, 60 NRC at 623 ("Under our contention rule, [petitioners] are not being asked to prove their case, or to provide an exhaustive list of possible bases, but simply to provide sufficient alleged factual or legal bases to support the contention, and to do so at the outset.").

⁶⁷⁰ See LBP-17-7, 86 NRC at 112-21, 125-27.

b. C-10's Prima Facie Case

Dr. Saouma identified the scaling of LSTP test specimens as a “significant problem with [the LSTP]” insofar as it jeopardized representativeness.⁶⁷¹ Specifically, Dr. Saouma stated that a proper scaling “ratio should be respected in all . . . dimensional quantities (especially reinforcement location and ratios)[.]”⁶⁷² If the test specimens are not scaled properly, Dr. Saouma stated, the specimens may exhibit “an erroneous failure mechanism (a beam may fail by bending, or a combination of bending and shear; the degree of which depends on the relative dimensions and location of shear reinforcement). Under these conditions, the corresponding load will not be representative.”⁶⁷³

Dr. Saouma testified that his major concern is the Containment Enclosure Building (CEB).⁶⁷⁴ The CEB is located outside the Containment Building and has a similar geometry.⁶⁷⁵ This structure provides leak protection for the containment and protects it from certain loads.⁶⁷⁶ The UFSAR described the CEB:

The [CEB] is a reinforced concrete . . . cylindrical structure with a hemispherical dome. The inside diameter of the cylinder is 158 feet. The vertical wall varies in thickness from 36 inches to 15 inches; the dome is 15 inches thick. The inside of the dome is 5 [feet] 6 [inches] above the top of the containment dome.⁶⁷⁷

Dr. Saouma testified that the CEB should have been selected as the reference location because it is the “last barrier in case of seismic load,” and therefore it constitutes the “Achilles’ heel of the whole structure.”⁶⁷⁸ He also testified that a seismic load “is more likely to affect the CEB than a tunnel.”⁶⁷⁹

Dr. Saouma further stated that an important difference between the test specimens and the CEB is that the test specimens were “about XX scale (XX-inch depth whereas the wall of a CEB is about 36 inches).”⁶⁸⁰ Although he recognized that this is not unusual in component testing, Dr. Saouma stated that “given the brittle nature of shear failure and associated size effect, the shear strength in

⁶⁷¹ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 11.

⁶⁷² *Id.* at 11-12.

⁶⁷³ *Id.* at 12.

⁶⁷⁴ Tr. at 612-13 (Saouma).

⁶⁷⁵ Ex. NRC007, UFSAR §§ 3.8.1.1, 3.8.4.

⁶⁷⁶ *Id.* § 3.8.1.1.

⁶⁷⁷ *Id.* § 3.8.4.

⁶⁷⁸ Tr. at 1046 (Saouma).

⁶⁷⁹ Tr. at 1047 (Saouma).

⁶⁸⁰ Ex. INT028, Dr. Saouma Rebuttal Testimony at 17 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 17.

the CEB will be lower than the one from the LSTP.”⁶⁸¹ According to a paper cited by Dr. Saouma, the size effect refers to “[t]he reduction in shear stress at shear failure as member depth of beams and slabs not containing stirrups increases[.]”⁶⁸² Dr. Saouma testified that “due to [the] size effect, the strength of a 36[-inch] deep beam ([modeling] the CEB wall) is about 26% lower than . . . a XX[-inch] one.”⁶⁸³ Because the LSTP used XX-inch beams, Dr. Saouma stated, the LSTP may significantly overestimate the strength of a 36-inch deep beam. Thus, the LSTP XX-inch beams would not be sufficiently representative of the below ground section of the CEB wall, which is 36 inches deep.

Dr. Saouma also testified that the reinforcement ratio of the test specimens is not representative of the CEB.⁶⁸⁴ He stated that the reinforcement ratio may “be representative of the [B Electrical Tunnel]. Even so[,] the longitudinal reinforcement [is] higher; XX[%] instead of 0.6[%], but that reinforcement threshold is not at all close to what we have in the CEB where the reinforcement threshold is 0.34[%] in both direction[s].”⁶⁸⁵

Dr. Saouma’s opinions are sufficient to meet C-10’s burden to establish a prima facie case and the burden of proof on this scaling issue therefore shifts to NextEra.

c. NextEra and Staff Responses

NextEra used the B Electrical Tunnel as a reference location, claiming it is representative of other structures and was the location where NextEra first identified ASR.⁶⁸⁶ MPR, NextEra’s expert witnesses clarified, however, that the B Electrical Tunnel is not representative “of the walls of Containment and the lower portions of the CEB, which are triaxially reinforced[.]”⁶⁸⁷

Regarding the test-model scaling issue raised by Dr. Saouma, NextEra witnesses testified that “one of the primary reasons for performing the LSTP was because published test results for selected limit states were from specimens that

⁶⁸¹ Ex. INT032, Dr. Saouma Rebuttal Testimony at 17.

⁶⁸² Ex. INT042, Bentz, E. C. (2005)[.] Empirical modeling of reinforced concrete shear strength size effect for members without stirrups. ACI Structural Journal, 102(2), 232 at 232 [hereinafter Ex. INT042, Bentz] (non-public). Stirrups provide through-thickness or triaxial reinforcement. *See id.*

⁶⁸³ Ex. INT028, Dr. Saouma Rebuttal Testimony at 18 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 18.

⁶⁸⁴ Tr. at 770 (Saouma).

⁶⁸⁵ Tr. at 1046-47 (Saouma).

⁶⁸⁶ Ex. NER001, MPR Testimony at 76-77.

⁶⁸⁷ *Id.* at 77.

were too small to be considered representative.”⁶⁸⁸ NextEra witnesses further testified that “[n]o scaling of the test specimen dimensions were required because the beam dimensions (thickness, reinforcing bar size, reinforcing bar spacing, concrete cover over reinforcing bars) were similar or identical to the reference location at the plant — i.e., the B Electrical Tunnel at Seabrook.”⁶⁸⁹

NextEra witnesses asserted that “[b]ecause the scaling factor between the fabricated LSTP specimens and the B Electrical Tunnel is 1.0 (i.e., no scaling required), proportionate scaling for location of reinforcement and diameter of reinforcement was not necessary. The LSTP specimens used the actual reinforcement bar sizes and the actual reinforcement spacing”⁶⁹⁰

Staff witnesses testified that C-10’s argument regarding scaling is immaterial because the LSTP specimens were almost full-scale compared to the bounding reference location, the B Electrical Tunnel:

The length and width of the test specimens are the actual dimensions at the reference location and the height is that of a representative segment (or slice) of that location The test specimens included two-dimensional reinforcement mats using the same reinforcement size and spacing, one along each longitudinal face, and with no shear reinforcement[,] as in a typical wall at Seabrook.⁶⁹¹

Staff witnesses also stated that “[b]ecause the LSTP supplements (rather than replaces) the design code, results from appropriately representative test specimens may be applied to reinforced concrete structures throughout Seabrook.”⁶⁹²

It is undisputed that the LSTP concrete specimens were representative of the dimensions of the B Electrical Tunnel, the reference location. The more difficult question, however, is whether the tunnel is sufficiently representative or bounding of other Seabrook structures such that the data obtained from the LSTP specimens may appropriately be applied to those other structures.

Witnesses for both the Staff and NextEra “agreed” that it would be “reasonable” to use the B Electrical Tunnel to model ASR because “that was the worst ASR area.”⁶⁹³ The evidentiary record confirms that the tunnel has the highest through-thickness expansion measurements.⁶⁹⁴

In addition, NextEra witnesses testified that the CEB is actually more rein-

⁶⁸⁸ *Id.* at 138.

⁶⁸⁹ *Id.*

⁶⁹⁰ *Id.* at 139.

⁶⁹¹ Ex. NRC001-R, Staff Testimony at 52.

⁶⁹² *Id.* at 53.

⁶⁹³ Tr. at 1047 (Buford).

⁶⁹⁴ Ex. NER007, Seabrook [SMP] Manual Rev. 7, B-14 tbl.2 (providing pre-instrument through-thickness expansion measurements for locations in the B Electrical Tunnel) (non-public).

forced than the B Electrical Tunnel on which the test specimens are based⁶⁹⁵ and that therefore the test specimens are bounding of the CEB. Specifically, the CEB is reinforced in both the in-plane direction and the through-thickness direction in the lower portions.⁶⁹⁶ NextEra witness Mr. Sherman explained that “the lowermost portion of the CEB building where it’s below [ground], where it’s exposed to moisture, where we are seeing the [ASR] has through-[thickness] reinforcement.”⁶⁹⁷ This is in addition to the in-plane reinforcement of the test specimens.⁶⁹⁸

NextEra witness Dr. Bolourchi testified that the below ground area of the CEB has ASR.⁶⁹⁹ He also testified that “all the below [ground] area[s] which . . . show any sign[s] of ASR . . . have through-thickness [reinforcement]. Above[-ground] is 15-inch concrete and there [is] no sign of ASR in there.”⁷⁰⁰ In addition, Dr. Bolourchi testified that the through-thickness reinforcement in the CEB is “one of the highest reinforcement[s] you can get in the through-thickness. Therefore, we are not relying on the concrete alone. We are relying on concrete plus steel. And the steel is not impacted by ASR.”⁷⁰¹

d. Findings of Fact and Board Analysis

We are not persuaded that there is no ASR-induced cracking in above ground areas of Seabrook structures, although this does not defeat a finding of reasonable assurance. One above ground area of the CEB, the wall inside and above the equipment hatch, has sufficient ASR cracking to require monitoring during outages.⁷⁰² Also, Staff witnesses acknowledged that extensometers had been installed in both the above and below ground locations at Seabrook.⁷⁰³ Extensometers are usually installed in Tier 3 areas, those with a CCI measurement above 1.0 mm/m (0.1%).⁷⁰⁴ Thus, ASR has not only been identified in above ground Seabrook structures but at sufficiently high levels to require the installation of extensometers. The areas of the CEB above an elevation of 22 feet do not have the triaxial reinforcement that is present in either the elevations

⁶⁹⁵ Ex. NER001, MPR Testimony at 76-77, 99.

⁶⁹⁶ Tr. at 700-02 (Sherman, Bolourchi).

⁶⁹⁷ Tr. at 701 (Sherman).

⁶⁹⁸ Tr. at 701 (Sherman); Ex. NER001, MPR Testimony at 99.

⁶⁹⁹ Tr. at 954 (Bolourchi).

⁷⁰⁰ Tr. at 1067 (Bolourchi).

⁷⁰¹ Tr. at 1064-65 (Bolourchi).

⁷⁰² Ex. NER007, Seabrook [SMP] Manual Rev. 7 at B-4 to -5 tbl.1 (non-public).

⁷⁰³ See Ex. NRC001-R, Staff Testimony at 64.

⁷⁰⁴ Ex. INT010, Original LAR at PDF 33 tbl.5.

below 22 feet or the below ground areas, and so they may be as susceptible to ASR-induced cracking as other above ground areas of Seabrook structures.⁷⁰⁵

Most of the above ground areas of the CEB do not have the triaxial reinforcement that is present in the below ground areas.⁷⁰⁶ These areas may be as susceptible to the same ASR-induced cracking as other above ground areas of Seabrook structures. Because of the lower relative humidity at the surface, Seabrook structures, including the CEB, may show little or no surface cracking but may have significant interior cracking, where the relative humidity is at or above the 80% threshold necessary for ASR reactivity.⁷⁰⁷

It is true, however, that the areas with the heaviest ASR cracking are generally below ground,⁷⁰⁸ which provides some support for the selection of the B Electrical Tunnel as the reference location. But we must also consider the size effect described by Dr. Saouma.⁷⁰⁹ As was explained above, the size effect causes lower shear strength for larger structures.⁷¹⁰ The critical issue, therefore, is whether the effect of the triaxial reinforcement in increasing shear strength is sufficient to offset the size effect.

Dr. Saouma cited Evan C. Bentz, “Empirical Modeling of Reinforced Concrete Shear Strength Size Effect for Members without Stirrups,” which concluded that “[t]he size effect is real and shows decreasing shear stress at shear failure for larger beams that do not contain stirrups . . . [t]he percentage of reinforcement is important in equations that determine the shear strength of beams without stirrups[.]”⁷¹¹ Thus, the Bentz article concludes that the size effect does not apply to beams with stirrups and that the amount of in-plane reinforcement is important.

The Seabrook CEB wall thickness varies from 36 inches at the base (El. -30 feet) to 27 inches from El. 11 feet to El. 40 feet and 15 inches above El. 40

⁷⁰⁵ Areas around CEB penetrations have additional reinforcement, with some penetrations such as the equipment hatch having triaxial reinforcement. Ex. INT015, Simpson Gumpertz & Heger, Inc., “Evaluation and Design Confirmation of As-Deformed CEB, 150252-CA-02,” Revision 0, July 2016 (Seabrook FP#100985) Enclosure 2 to Letter SBK-L-16153, re: Seabrook Station (Sept. 30, 2016) at 26-29 [hereinafter Ex. INT015, SGH Evaluation and Design Confirmation of As-Deformed CEB].

⁷⁰⁶ *Id.*; Tr. at 701 (Sherman), 1067 (Bolourchi).

⁷⁰⁷ Ex. INT028, Dr. Saouma Rebuttal Testimony at 21-25 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 21-25.

⁷⁰⁸ See Ex. NER007, Seabrook [SMP] Manual Rev. 7 at B-12 to -16 tbl.2 (non-public).

⁷⁰⁹ Ex. INT028, Dr. Saouma Rebuttal Testimony at 17-18 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 17-18.

⁷¹⁰ See *supra* notes 680-683 and accompanying text.

⁷¹¹ Ex. INT042, Bentz at 240 (non-public).

feet.⁷¹² The CEB is 228 feet tall.⁷¹³ Therefore, most of the CEB is approximately 2 feet thick or less, which is XXXX the depth of the test specimens in the LSTP,⁷¹⁴ thus precluding any size effect concerns for a large part of the CEB.

The entire portion of the CEB that is 36 inches in depth includes transverse reinforcement (stirrups) in both the hoop (circumferential) and meridional (longitudinal or vertical) directions,⁷¹⁵ which is a structural geometry that was not addressed in the Bentz article.⁷¹⁶ Also, the in-plane reinforcement of the CEB in the hoop and meridional directions of the 36-inch thick portion of the CEB is greater than the reinforcement of the shear test specimens of the LSTP.⁷¹⁷

At the hearing, NextEra witness Dr. Bayrak testified that “size effect is a factor well known in the shear community.”⁷¹⁸ However, he also testified that this is accounted for in ACI 318-71 because “that version of the code mandates the use of a minimum quantity of transverse, through-thickness reinforcement in cases where the shear stress exceeds one-half of the concrete contribution to shear strength expression. The use of transverse reinforcement mitigates what’s known as [the] size effect.”⁷¹⁹ Dr. Saouma agreed with this, although he stated that “[the increase of shear strength from the reinforcement] is coming at a price of additional stresses which were not accounted for in the design process.”⁷²⁰

Given the transverse reinforcement, which mitigates the size effect, the higher in-plane reinforcement of the 36-inch thick portion of the CEB, the small size of the 36-inch segment, and the fact that the wall thickness of a large majority of the CEB is 15 inches (which is much less than the wall thickness of the LSTP test specimens), the Board finds, based on a preponderance of the evidence, that the size effect will not reduce the shear response of the CEB structure relative to the LSTP test specimens.

With respect to Dr. Saouma’s concern regarding the XX% reinforcement of some test specimens,⁷²¹ NextEra witnesses testified that while “[t]he LSTP specimens used the actual reinforcement bar sizes and the actual reinforcement spacing[,]” there was one exception for the “spacing of the longitudinal rein-

⁷¹² Ex. INT015, SGH Evaluation and Design Confirmation of As-Deformed CEB at 26-29.

⁷¹³ *Id.* at 26.

⁷¹⁴ *Id.* at 26-29; *see* Ex. INT019, MPR-4273 at 3-2 tbl.3-1; Ex. INT021, MPR-4273 at 3-2 tbl.3-1 (non-public).

⁷¹⁵ Ex. INT015, SGH Evaluation and Design Confirmation of As-Deformed CEB at 26-28.

⁷¹⁶ *See* Ex. INT042, Bentz at 240 (non-public).

⁷¹⁷ Ex. INT015, SGH Evaluation and Design Confirmation of As-Deformed CEB at 26-28; Ex. INT019, MPR-4273 at 3-2 tbl.3-1; Ex. INT021, MPR-4273 at 3-2 tbl.3-1 (non-public).

⁷¹⁸ Tr. at 624 (Bayrak).

⁷¹⁹ Tr. at 625-26 (Bayrak).

⁷²⁰ Tr. at 629 (Saouma).

⁷²¹ Tr. at 1046-47 (Saouma).

forcement in the shear specimens, which used additional rebar in the longitudinal direction to ensure a shear failure[.]”⁷²² NextEra witnesses further testified that the “use of additional longitudinal reinforcing bars in the shear test specimens provided additional flexural capacity, and therefore ensured that failure during load testing would be in shear rather than flexure.”⁷²³ MPR-3757 addresses the use of the longitudinal and perpendicular reinforcement spacing for the shear test specimens.⁷²⁴

Similarly, Staff witnesses testified that the LSTP was not a model test; rather:

[I]t was a full-scale load test, consistent with the test methodology on which the ACI 318-71 empirical code equations for structural capacity (for strength limit states such as flexure and shear) were developed, created to determine the impact of ASR on structural capacity for specific limit states. The individual tests were designed to ensure that the failure mode of each test specimen supports the limit state of interest in that test. The purpose of the tests was . . . to validate the applicability and/or limitations of the ACI 318-71 code equations for estimating structural capacity for critical limit states for ASR-affected reinforced concrete structures at Seabrook.⁷²⁵

We find the scaling, reinforcement, and size of the specimens in the LSTP reasonable and sufficient to provide reasonable assurance of adequate protection of public health and safety.

4. Boundary Conditions

a. Motion in Limine

NextEra argued that Dr. Saouma’s testimony regarding dimensions and boundary conditions introduces new challenges to the execution of the LSTP and deficiencies in the LAR that were not advanced in the original Petition.⁷²⁶ Specifically, NextEra seeks to exclude section C.2.2.2 from Dr. Saouma’s pre-filed testimony, as well as sections D.4.1 and D.4.2 from Dr. Saouma’s rebuttal testimony, claiming that he raised new arguments that could have been raised at the outset and are unrelated to the reformulated contention.⁷²⁷ For the same reasons addressed earlier, *supra* Part VIII.A.3.a, the Board denies the Motion in Limine in this respect and holds section C.2.2.2 of Dr. Saouma’s pre-filed

⁷²² Ex. NER001, MPR Testimony at 139.

⁷²³ *Id.* at 139-40.

⁷²⁴ See Ex. NER026, MPR-3757 § 3.2.3 (non-public).

⁷²⁵ Ex. NRC001-R, Staff Testimony at 53-54.

⁷²⁶ NextEra MIL 2 at 17-18.

⁷²⁷ *Id.*

testimony and sections D.4.1 and D.4.2 of Dr. Saouma's rebuttal testimony are within the scope of this proceeding.⁷²⁸

b. C-10's Prima Facie Case

Dr. Saouma suggested that NextEra made errors in the design of the LSTP regarding the specimen boundary conditions.⁷²⁹ Specifically, he stated that "[i]n a test, the model must be subjected to the same conditions (support, restraints and load) as the prototype (Seabrook)."⁷³⁰ He further stated that "the [LSTP] tests modeled only the [out-of-plane] shear and not the in-plane [and that] . . . [o]ut-of-plane results may not be directly applicable to in-plane."⁷³¹ Dr. Saouma also stated that axial forces from in-situ boundary conditions can negate the prestressing effect observed in ASR-affected reinforced concrete and that the "prestressing [effect] may be dwarfed by . . . axial loads [from gravity] and . . . cannot be relied upon."⁷³² Thus, he testified that as a result of these deficiencies "the [LSTP] cannot be seen as a representative model of the prototype (Seabrook)."⁷³³

Dr. Saouma's testimony provides a plausible analysis to support his opinion. C-10 has therefore satisfied its burden to present a prima facie case.

c. NextEra and Staff Responses

Regarding boundary conditions, NextEra witnesses testified that "the test setups for the Shear and Reinforcement Anchorage Test Programs used a point loading arrangement."⁷³⁴ NextEra witnesses acknowledged that "[t]his loading is different than the conditions for some structures at Seabrook, which have uniform loading due to hydrostatic loading from the exterior of the structure, the weight of the structure, and the global application of potential loads (e.g.,

⁷²⁸ Ex. INT027, Dr. Saouma Pre-Filed Testimony § C.2.2.2 generally critiqued the boundary conditions used in the LSTP, whereas Ex. INT032, Dr. Saouma Rebuttal Testimony § D.4.1 stated that the lack of testing for in-plane shear is a concern, and § D.4.2 developed the argument that the lack of in-plane shear testing is a concern by stating the CEB will be affected by in-plane shear forces during a seismic excitation.

⁷²⁹ Ex. INT027, Dr. Saouma Pre-Filed Testimony § C.2.2.2.

⁷³⁰ *Id.* at 12.

⁷³¹ *Id.*

⁷³² *Id.* at 13.

⁷³³ *Id.*

⁷³⁴ Ex. NER001, MPR Testimony at 74 (citing Ex. NER015, MPR-3848, Rev. 0 "Seabrook Station, Approach for Shear and Reinforcement Anchorage Testing of Concrete Affected by Alkali-Silica Reaction" (Apr. 2013) (FP100818) § 4.3 [hereinafter Ex. NER015, MPR-3848] (non-public)).

seismic).’’⁷³⁵ Thus, “[t]he test setups were not aimed at replicating boundary conditions (i.e., load or deformation compatibility) at Seabrook. Rather, the test setups were adopted since they are industry standard tests for studying shear behavior and reinforcement anchorage.’’⁷³⁶

NextEra witnesses stated that “[r]eplication of the in-situ conditions would have been excessively complex and is ultimately unnecessary for reasonable assurance. Considering the variety of loading and boundary conditions present at Seabrook, it is not practical or even possible to replicate every location.’’⁷³⁷ As NextEra witness Dr. Bayrak put it, “having to focus on replicating all aspects of everything at every location would result in building another nuclear power plant.’’⁷³⁸

Dr. Bayrak further emphasized that “ACI 318-71 expressions do not aim to replicate the boundary conditions for the myriad structures in which the design expressions [(i.e., design equations)] are used. Instead, ACI 318-71 presents design expressions that can uniformly be applied to concrete structures.’’⁷³⁹ Following the approach of ACI 318-71, “the LSTP used the most severe loading and boundary conditions for the limit states of interest and were consistent with the approaches used to develop the ACI Code equations of interest, which provide the design basis for the plant.’’⁷⁴⁰

NextEra witnesses testified:

The test configuration (simply supported beam with point loading) is typical for testing used to develop empirical ACI code expressions. The experimental design is for separate effects testing and deliberately omitted additional forces (e.g., axial forces) that might impact the results, which is consistent with industry practices for shear testing. For Seabrook, additional forces due to building configuration or other loads (e.g., seismic) are accounted for in the SEM and did not need to be simulated in the load tests.⁷⁴¹

With respect to Dr. Saouma’s concern regarding the tests not modeling in-plane shear, NextEra witnesses further testified:

Out-of-plane shear is perpendicular to the plane of a wall (e.g., a force pushing

⁷³⁵ *Id.*

⁷³⁶ *Id.*

⁷³⁷ *Id.* at 74-75.

⁷³⁸ Tr. at 428-29 (Bayrak).

⁷³⁹ Ex. NER001, MPR Testimony at 75 (citing Ex. NER015, MPR-3848 § 4.3 (non-public)).

⁷⁴⁰ *Id.*

⁷⁴¹ *Id.* at 98 (citing Ex. NER015, MPR-3848 § 4.3 (non-public); Ex. NRC051, Report of ACI-ASCE (American Society of Civil Engineers) Committee 326, “Shear and Diagonal Tension” (1962) (non-public)).

on the wall surface). In-plane shear occurs in the plane of a wall (e.g., a force pushing down from the top of the wall). In the context of Seabrook, out-of-plane shear is not resisted by reinforcement, whereas in-plane shear is.⁷⁴²

According to NextEra, it “demonstrated through review of published literature that one-way shear with reinforcement was not a concern for Seabrook . . . [h]ence, there was no need to evaluate in-plane shear as part of the LSTP.”⁷⁴³

Staff witnesses agreed that “the LSTP did not test for the in-plane shear mode because the out-of-plane shear failure is bounding” of in-plane shear.⁷⁴⁴ Staff witnesses, like those of NextEra, judged the out-of-plane shear failure mode “to be more critical than [the] in-plane shear mode.”⁷⁴⁵ Staff witnesses noted that under the ACI 318-71 code the “nominal permissible out-of-plane shear stress in concrete is . . . $2\sqrt{f'_c}$ ” which contrasts with the greater “allowable total shear stress of $10\sqrt{f'_c}$ for in-plane shear[,] . . . [w]here f'_c is the specified minimum concrete compressive strength[.]”⁷⁴⁶

For C-10’s part, Dr. Saouma testified that “[t]he fact that the ACI 318-71 code allows 10 times the square root of the compressive strength for [in-plane] shear, as opposed to only two times for [out-of-plane], is irrelevant.”⁷⁴⁷ He further testified that:

[T]he relative loss in strength will be equal to the square root of the fraction of the loss because the 2 and the 10 cancel out[.]. For instance, if the original compressive strength is 100 (never mind the units), and due to ASR the compressive drops to 70, the loss in shear strength for both in-plane and [out-of-plane] will be equal to the square root of 70 divided by 100 (0.83).⁷⁴⁸

Therefore, he stated that “the concrete deterioration of the in-plane shear should be accounted for . . . [because] the analysis of the container is not accounting for this loss.”⁷⁴⁹

⁷⁴² *Id.* at 140.

⁷⁴³ *Id.* (citing Ex. NER018, MPR-3727 at 6-8 tbl.6-4; Ex. NER019, Bayrak White Paper at 12 tbl.4 (non-public)); Ex. NRC075, Dean J. Deschenes et al., “ASR/DEF-Damaged Bent Caps: Shear Tests and Field Implications,” Technical Report No. 12-8XXIA006 summarizing work conducted for the Texas Department of Transportation at Ferguson Structural Engineering Laboratory, The University of Texas at Austin (August 2009) § 7.2.2 [hereinafter Ex. NRC075, Deschenes, et al.].

⁷⁴⁴ NRC Staff SOP at 51 (citing Ex. NRC001-R, Staff Testimony at 53-55).

⁷⁴⁵ Ex. NRC001-R, Staff Testimony at 54-55.

⁷⁴⁶ *Id.* (citing Ex. NRC049, ACI 318-71 §§ 11.4.1, 11.16.5 (non-public)).

⁷⁴⁷ Ex. INT032, Dr. Saouma Rebuttal Testimony at 18.

⁷⁴⁸ *Id.* (emphasis omitted).

⁷⁴⁹ *Id.*

In other testimony, however, Dr. Saouma appeared to recognize the greater importance of out-of-plane shear:

Ultimately, the major concern about the reduced shear strengths is due to the lateral load. There is not really a major concern about the safety of the structure due to the gravity load, the vertical load. It assumes there will be a lateral load due to seismic activity. This is where the problem occurred. Because to resist a lateral load is the shear strength of the concrete.⁷⁵⁰

NextEra witnesses testified that NextEra:

[D]id consider axial compression during planning of these tests. The ACI [318-71] shear design methodology recognizes that axial compression improves the shear strength of reinforced concrete, and conversely, axial tension weakens the shear strength of reinforced concrete. In this context, it is important to recognize two facts: (1) There is no reason to believe that the beneficial effects of axial compression to shear strength would be any different for ASR-affected concrete, particularly in view of the publicly available test data, and (2) restraint provided by the actual structural configurations present at Seabrook introduces axial restraint (i.e., compression) forces that would benefit shear strength, thus making the testing conservative (because the test setup did not have the benefit of being part of a larger structure that provides restraint). This effect is taken into account by the structural analysis methodology. Accordingly, it would not have been appropriate to also include axial compression forces in the experimental program.⁷⁵¹

Staff witnesses testified that they agreed that NextEra did not need to test for axial forces caused by deadweight, explaining that “these axial forces are compressive and have a beneficial effect on structural capacity in flexure and shear for in-situ structures such as those at Seabrook.”⁷⁵²

d. Findings of Fact and Board Analysis

The Board agrees with NextEra that the variety of loading and boundary conditions present at Seabrook makes it impractical to replicate every location of concern. The Board also agrees with NextEra that the ACI 318-71 design equations do not aim to replicate the boundary conditions for each of the large number of structures to which they are applied. Instead, ACI 318-71 can be uniformly applied to concrete structures even though there may be variations within the specific configuration of structural components.

⁷⁵⁰ Tr. at 361 (Saouma).

⁷⁵¹ Ex. NER001, MPR Testimony at 141-42.

⁷⁵² Ex. NRC001-R, Staff Testimony at 55.

The Board concludes that NextEra has met its burden to show by a preponderance of the evidence that the LSTP was sufficiently representative of the boundary conditions of Seabrook structures. It was reasonable for the LSTP to focus on out-of-plane shear because out-of-plane shear failure is bounding of in-plane shear failure, and the test configuration provides a conservative evaluation of the structural capacity of Seabrook. We also conclude that NextEra did not need to test for axial forces due to deadweight because those forces have a beneficial effect on structural capacity in flexure and shear. Therefore, it was conservative to exclude those forces from the test program.⁷⁵³

5. Effect of Reinforcement (Use of Original Material Properties)

It is undisputed that ASR degrades the material properties of concrete, including compressive strength, elastic modulus, and tensile strength.⁷⁵⁴ “Because concrete material properties are used as direct inputs to Code equations for determining structural capacity, a decrease in concrete material properties implies a corresponding decrease in calculated structural capacity.”⁷⁵⁵ Relying on the LSTP, however, NextEra concluded that “in reinforced concrete, the presence of reinforcing bars and the consequent ‘chemical prestressing effect’ causes the structural performance of ASR-affected reinforced concrete to depart from what would be calculated using the ASR-affected material properties as inputs to the code expressions.”⁷⁵⁶ NextEra decided it could use the original, non-degraded material properties as inputs to the code equations for determining structural capacity when ASR-induced expansion is within the limits of the LSTP.⁷⁵⁷ C-10 challenged this determination.⁷⁵⁸

⁷⁵³ Although not part of the LSTP, the specific configuration and boundary conditions of each Seabrook structure affected by ASR and its foundation are included in the SEM and are thus accounted for in the calculation of the structural demand for each structure. The methodology used to calculate structural demand is outside the scope of the proceeding. *See infra* Part VIII.F.1; *see supra* note 741 and accompanying text.

⁷⁵⁴ Ex. INT027, Dr. Saouma Pre-Filed Testimony, at 6; Ex. INT031, Dr. Saouma Review of Selected Documents at 12-14; Ex. NER001, MPR Testimony at 39 (“ASR can produce cracking in concrete, and eventually causes degradation of its material properties-compressive strength, elastic modulus, tensile strength, etc.-as measured from typical tests conducted on cylinders or cores.”); Ex. NRC001-R, Staff Testimony at 7 (“[ASR] cracking degrades the mechanical material properties of the affected concrete.”).

⁷⁵⁵ Ex. NER001, MPR Testimony at 39-40 (citing Ex. NRC049, ACI 318-71 § 11.4 (non-public)).

⁷⁵⁶ *Id.* at 41.

⁷⁵⁷ *Id.* at 60.

⁷⁵⁸ *See infra* Part VIII.A.5.b.

a. *Motion in Limine*

NextEra moved to exclude testimony on the use of original material properties claiming these arguments are new and beyond the scope of the reformulated contention.⁷⁵⁹ We deny NextEra's motion in this regard. In Contention B, one of the bases of the reformulated contention, C-10 challenged NextEra's reliance on the beneficial effect of the confinement provided by reinforcement and the resulting chemical prestressing effect. Contention B, as admitted by the Board, alleges that "[t]he LAR misconstrues expansion occurring within a reinforced concrete structure due to the [ASR] because any mitigation of lost structural capacity, due to reinforcement, is temporary and unpredictable."⁷⁶⁰ In support of Contention B, C-10 directly disputed the LAR's claim that, although ASR reduces the material properties of concrete, this "does not necessarily result in a corresponding decrease in capacity of a reinforced concrete structure [because] ASR-induced expansion in reinforced concrete has a prestressing effect that mitigates the loss of structural capacity that would be assumed based on the change in material properties."⁷⁶¹

If C-10 is correct, then NextEra's structural evaluations, which assume un-degraded material properties because of the beneficial effect of reinforcement as long as ASR remains within the expansion limits,⁷⁶² would be based on an incorrect assumption derived from the LSTP. According to NextEra witnesses, the LSTP confirmed that the original code capacities and standard methods of computing stiffness could be used in structural analyses and evaluations on the capacity side of the finite element analysis (FEA).⁷⁶³ Because NextEra used a conclusion from the LSTP to determine which material properties to use in the FEA to assess capacity, C-10's testimony challenging the use of original material properties is within the scope of the proceeding. If the LSTP is found not

⁷⁵⁹ NextEra MIL 2 at 21-24.

⁷⁶⁰ LBP-17-7, 86 NRC at 107.

⁷⁶¹ Ex. INT010, Original LAR at PDF 10; C-10 Petition at 4-5; *see also* Ex. NER001, MPR Testimony at 38 ("Prestressing of concrete refers to the approach of applying a compressive load to improve the tensile capacity of the concrete member. When the concrete member is in service, if tensile loads are applied, the compressive prestress (i.e., pre-compression) must be completely overcome before a portion of the member is exposed to net tension, at which point cracking may ensue. Because concrete is much stronger in compression than tension, prestressing can improve in-service performance for certain applications.").

⁷⁶² *See* Ex. INT014, MPR-4288 at 2-3 (non-public); Ex. INT012, MPR-4288 at 2-3.

⁷⁶³ Ex. NER004, SGH Testimony at 17-18 ("We evaluated the LSTP information regarding stiffness and capacity in much the same way that we evaluated other academic literature and testing programs. We considered these conclusions (i.e., that stiffness and capacity are not impacted by ASR within the limits of testing) in developing the baseline assumption in the SEM that existing code capacities and standard methods of computing stiffness can be used in structural analyses and evaluations."). The FEA is explained *supra* Part II.A.

to be sufficiently representative, that would call into question any conclusions stemming from the LSTP, such as the use of the original material properties to determine structural capacity. And if the use of original material properties caused NextEra to overestimate the capacity of Seabrook seismic Category I structures, its support for the LAR would be undermined. Therefore, NextEra's Motion in Limine is denied regarding the use of original material properties.

b. C-10's Prima Facie Case

Dr. Saouma stated that "ASR will reduce the tensile strength and the elastic modulus of concrete . . . by as much as 60%. As to the compressive strength, it has long been assumed that it is not affected by ASR; however there is recent evidence to the contrary"⁷⁶⁴ He also stated that "[t]he concrete material is degraded by ASR (by virtue of its correlation to the tensile strength)[.]"⁷⁶⁵ He further testified that the elastic modulus is reduced by the deteriorated nature of the existing concrete.⁷⁶⁶ Dr. Saouma also testified that ASR undoubtedly affects the elastic modulus, which will "result in larger displacements, and in turn [an] increased likelihood of cracking[.]"⁷⁶⁷ He also stated that "ASR will reduce the tensile and shear strength of concrete while increasing [its] propensity [for] larger deformation[s]. This in turn increases the likelihood of cracking and reduces the ability of a structure to resist [a] lateral seismic load."⁷⁶⁸

Although Dr. Saouma stated that "[c]oncrete shear strength will decrease rather than increase because of ASR," he acknowledged that "[r]einforced concrete . . . will not have a decrease in shear strength because of [the] prestressing effect[.]"⁷⁶⁹ Dr. Saouma stated that the reduction in concrete shear strength due to ASR "is a universal material characteristic that can be used inside a finite element program's constitutive relation (a) to relate stress to strain; and (b) to define a yield surface or failure load."⁷⁷⁰ Dr. Saouma recognized the need to take into account the effect of confinement on the degraded material proper-

⁷⁶⁴ Ex. INT031, Dr. Saouma Review of Selected Documents at 13 (citations omitted).

⁷⁶⁵ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 26.

⁷⁶⁶ *Id.* at 25 ("[T]he elastic modulus should have been reduced, and this in turn will reduce the stiffness of the [nuclear containment vessel structure]. Indeed [Ex. NRC049, ACI 318-71 § 19.2.2.1 (non-public)] has an approximate equation for the elastic modulus in terms of the compressive strength. However, this cannot be valid for a deteriorated concrete as it is outside the assumptions of the ACI equation."); Tr. at 950 (Saouma).

⁷⁶⁷ Ex. INT031, Dr. Saouma Review of Selected Documents at 15; *see* Tr. at 314-15 (Saouma).

⁷⁶⁸ Ex. INT031, Dr. Saouma Review of Selected Documents at 14.

⁷⁶⁹ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 17.

⁷⁷⁰ *Id.* In an FEA, constitutive relation(s) are used for the prediction of specific physical phenomena in a finite element method or other numerical analysis, such as the response of a material to an applied force.

ties.⁷⁷¹ Still, he testified that this should be done as part of the FEA,⁷⁷² and he cited examples where researchers were able to capture “increasing strengths as a result of chemical [prestressing] of ASR.”⁷⁷³

Dr. Saouma’s rebuttal testimony, which responded to NextEra’s claim that the chemical prestressing effect is fundamentally beneficial, explained that “[w]hile MPR state[d] that ‘the beneficial effects of confinement are recognized in the structural engineering community,’ its potentially adverse effects are also recognized[.]”⁷⁷⁴ He explained that “[t]he real possibility of excessive steel stresses resulting in premature fracture or yielding was also reported Indeed, in this paper, it is shown that ‘chemical prestressing’ has caused the rupture of steel and thus partial collapse of a bridge.”⁷⁷⁵

In further support of his opinion, Dr. Saouma cited an FSEL study prepared for the Texas Department of Transportation that identified “more than thirty cases of fractured reinforcements . . . in bridges and other structures” affected by ASR.⁷⁷⁶ The FSEL study noted that this discovery by Japanese researchers led them to reassess the impact of ASR on structural safety and serviceability stating that “[a]s long as reinforcing steels are not broken due to ASR-caused expansion, the safety of a structure is considered not to be seriously compromised. However, the safety of a structure becomes questionable when the confinement of the concrete becomes degraded due to fracture of reinforcing steel bars (Miyagawa 2006).”⁷⁷⁷ Further, the FSEL study stated that “[p]erception of ASR as structurally harmless deterioration persisted until the recent discovery of fractured reinforcement in the deteriorated structures of Japan. It was immediately recognized that the ASR-induced fracture of reinforcement would lead to a sudden loss of structural capacity.”⁷⁷⁸

⁷⁷¹ Tr. at 651 (Saouma) (“[A]ny semi-reasonable finite element code would be able to capture the interaction between the material and the surrounding [reinforcement] and the chemical [prestressing].”).

⁷⁷² *Id.*

⁷⁷³ *Id.*

⁷⁷⁴ Ex. INT032, Dr. Saouma Rebuttal Testimony at 19.

⁷⁷⁵ *Id.* (citing Ex. INT043, Miyagawa et al., Fracture of Reinforcing Steels in Concrete Structures Damaged by Alkali-Silica Reaction. *Journal of Advanced Concrete Technology*, 4(3), 339-355 (2006)). “Yielding of the reinforcing bars refers to permanent deformation of the steel, which occurs when deflection of the beam produces stresses in the reinforcing bars that reach their yield strength. This failure mode is preferred for structural design because it is more gradual than the sudden brittle failure of concrete that could occur with failure of reinforcement anchorage at the lap splice.” Ex. NER001, MPR Testimony at 102-03.

⁷⁷⁶ Ex. INT032, Dr. Saouma Rebuttal Testimony at 19 (citing Ex. NRC075, Deschenes et al. at 25-26).

⁷⁷⁷ Ex. NRC075, Deschenes et al. at 26.

⁷⁷⁸ *Id.* at 28.

Dr. Saouma acknowledged that prestressing reduces the impact of degraded material properties on structural capacity.⁷⁷⁹ However, he also testified that the prestressing effect is accompanied by increases in tensile and compressive stresses that were not accounted for in the design process.⁷⁸⁰ He further stated that strain gauges⁷⁸¹ should have been placed on the LSTP's shear beam "to assess and quantify the adverse effects of the chemical prestressing[.]"⁷⁸²

We conclude that C-10 satisfied its burden to make a prima facie case on the issues raised by Contention B and incorporated in the reformulated contention.

c. NextEra and Staff Responses

NextEra witnesses acknowledged that "ASR in reinforced concrete still causes a reduction in material properties like unreinforced concrete."⁷⁸³ In reinforced concrete, however, NextEra witnesses stated that "the presence of reinforcing bars and the consequent 'chemical prestressing effect' causes the structural performance of ASR-affected reinforced concrete to depart from what would be calculated using the ASR-affected material properties as inputs to the code expressions."⁷⁸⁴ According to NextEra witnesses, the LSTP showed that "because of the interaction between concrete and reinforcing in a reinforced concrete member, the strength and stiffness of the overall members are not reduced within certain ASR strain limits."⁷⁸⁵

NextEra concluded that the original elastic modulus can be used because the "[u]nreduced design material stiffness properties can adequately represent ASR-impacted reinforced concrete sections of the CEB structure."⁷⁸⁶ NextEra witnesses also emphasized that:

[W]hile ASR may degrade both the strength and stiffness of the unconfined concrete material, the research has demonstrated that, within certain ASR strain limits, neither the strength nor the stiffness of structural elements is degraded below that

⁷⁷⁹ Tr. at 627-29, 829 (Saouma).

⁷⁸⁰ *Id.*; Ex. INT032, Dr. Saouma Rebuttal Testimony at 20.

⁷⁸¹ Ex. NER004, SGH Testimony at 37 ("[O]ngoing expansion is monitored using demountable mechanical strain gauges that more precisely measure the distance between gauge pins permanently installed in the concrete.").

⁷⁸² Ex. INT032, Dr. Saouma Rebuttal Testimony at 21.

⁷⁸³ Ex. NER001, MPR Testimony at 41.

⁷⁸⁴ *Id.*

⁷⁸⁵ Ex. NER004, SGH Testimony at 61-62.

⁷⁸⁶ Ex. INT015, SGH Evaluation and Design Confirmation of As-Deformed CEB at 22.

predicted by code equations and principles of structural mechanics if original concrete properties are used.⁷⁸⁷

For example, Table 4 of the IStructE document provides the “[l]ower bound residual mechanical properties as percentage of values for unaffected concrete at 28 days.”⁷⁸⁸ The IStructE document notes that:

It is emphasized that the residual strength and stiffnesses in actual structures will be modified from the figures in Table 4 [which show reductions in properties due to ASR]. This is because the concrete in actual structures is generally restrained by adjacent material and is in a biaxial or triaxial stress state. These effects will tend to reduce the damage to the concrete and increase its residual mechanical properties.⁷⁸⁹

On this basis, NextEra witnesses testified that the original concrete material properties can appropriately be used in the structural evaluations within the limits defined by the LSTP.⁷⁹⁰

Staff witnesses largely supported NextEra’s testimony and stated that:

Because of the in-situ confinement and the interaction between the reinforcing steel and the concrete, the load-carrying behavior of ASR-affected structures is generally expected to be better than would be expected from the material properties measured on test specimens or cores. Therefore, it is important that reinforced concrete structures affected by ASR be evaluated based on the impact on structural strength of a reinforced concrete composite system, and not necessarily on individual concrete material properties obtained by extracted core samples.⁷⁹¹

Thus, according to Staff witnesses, “the results of the LSTP demonstrate that there is no impact on [the] in-situ structural capacity of reinforced concrete components within the expansion levels identified in the [LSTP].”⁷⁹² In sum, both NextEra and the Staff agreed that it is not necessary to input the degraded material properties in the FEA as long as ASR-induced expansion is within the expansion limits of the LSTP.

With respect to the NRC’s regulations, Staff witnesses testified that the relevant issue is the effect that a degradation mechanism may have on structural

⁷⁸⁷Ex. NER004, SGH Testimony at 59 (citing Ex. INT019, MPR-4273; Ex. NER001, MPR Testimony at 58-60) (emphasis omitted).

⁷⁸⁸Ex. NER012, IStructE Structural Effects of [ASR] at 14 tbl.4 (non-public).

⁷⁸⁹*Id.* at 14 (non-public).

⁷⁹⁰Ex. NER001, MPR Testimony at 54.

⁷⁹¹Ex. NRC001-R, Staff Testimony at 9.

⁷⁹²*Id.* at 70; Ex. INT024, Final SE at PDF 40.

properties rather than material properties.⁷⁹³ Therefore, Staff witnesses stated that the relevant question is whether a reinforced concrete structure at Seabrook, as a whole, is capable of fulfilling its intended safety functions despite the presence of ASR.⁷⁹⁴ In other words, “[t]o determine whether an ASR-affected reinforced concrete structure or structural component remains capable of fulfilling its intended functions, it is the structural strength (as a reinforced concrete composite system) that matters and not individual material strengths.”⁷⁹⁵

In disputing Dr. Saouma’s claims in his testimony that NextEra confused material strength with structural strength,⁷⁹⁶ Staff witnesses testified that:

Dr. Saouma is referring to the material properties of concrete (e.g., compressive strength, tensile strength, etc.). When affected by ASR, the material properties of concrete are degraded. This is well known in existing ASR literature and the results of the LSTP showed the expected reductions in material properties. NextEra acknowledged these results; however, the entire point of the LSTP was to demonstrate that although concrete material properties may be reduced, the structural performance of the reinforced concrete member can still be conservatively estimated by the design basis code equations. Thus, NextEra is not confusing material strength with structural strength, it is relying on the LSTP results to demonstrate that structural strength is unaffected as long as the expansion remains below the identified limits from the LSTP, regardless of the reductions in material strength.⁷⁹⁷

In response to Dr. Saouma’s testimony that the chemical prestressing effect is accompanied by increases in tensile and compressive stresses that were not accounted for in the design process, NextEra witness Dr. Bayrak testified that “[i]n the context of axial compressive strength of an element, it is, in fact, true that . . . the chemical [prestressing effect] . . . offers a lot of different benefits here and there is a negative impact,” but Dr. Bayrak also stated that the negative “impact has been accounted for in the SGH analyses.”⁷⁹⁸ With regard to Dr. Saouma’s concern that strain gauges should have been placed on the LSTP’s shear beam specimen, Dr. Bayrak testified that “strain gauges typically fail” when used in tests such as those conducted in the LSTP that accelerate the rate of ASR progression.⁷⁹⁹

⁷⁹³ Ex. NRC001-R, Staff Testimony at 8-9.

⁷⁹⁴ *Id.*

⁷⁹⁵ *Id.*

⁷⁹⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 17.

⁷⁹⁷ Ex. NRC001-R, Staff Testimony at 58.

⁷⁹⁸ Tr. at 630 (Bayrak).

⁷⁹⁹ Tr. at 631 (Bayrak).

d. Findings of Fact and Board Analysis

The parties agreed on four issues. First, that ASR degrades the material properties of concrete, including compressive strength, elastic modulus, and tensile strength. Second, despite the acknowledged degrading effect of ASR, reinforced concrete will not have a decrease in shear strength because of the chemical prestressing effect. Third, any calculation of structural capacity must consider the effect of prestressing on the capacity of Seabrook structures. Finally, chemical prestressing produces both beneficial and negative impacts.

The parties disagreed, however, on how the prestressing effect should be evaluated. NextEra chose to use the original material properties, not the degraded properties, as inputs to the code equations used to calculate structural capacity. It asserted it did so because the resulting calculations of structural capacity were consistent with the results of the LSTP, which showed no loss of structural capacity within the identified expansion limits.⁸⁰⁰ On the other hand, Dr. Saouma prefers that the degraded material properties be incorporated into the FEA as structural capacity and that it captures the beneficial effect of prestressing.⁸⁰¹ NextEra also chose to capture the interaction between the rebar and the expanding concrete through the testing of actual concrete specimens.⁸⁰²

The Board finds that neither approach has any obvious superiority to the other. Dr. Saouma's approach would utilize degraded material properties taken directly from the testing of Seabrook cores, which would avoid the need to rely on the LSTP results that raise the various questions about representativeness.⁸⁰³ NextEra witness Dr. Bolourchi testified, however, that Dr. Saouma's modeling approach would require the evaluation of numerous additional parameters and instrumentation of the Seabrook structures, not just testing of core borings.⁸⁰⁴ NextEra's approach has the advantage of relying on actual testing to determine the effect of the rebar on the expanding concrete. In the absence of a reason to prefer Dr. Saouma's recommended approach, the Board concludes that it was reasonable and consistent with NRC regulations for NextEra to use the nondegraded, original concrete material properties and code equations in the structural capacity calculations.

The other area of disagreement is the potential for ASR to cause or contribute to the fracture or yielding of reinforcing steel bars and a resulting loss of structural capacity. While Dr. Saouma has not established that this will occur

⁸⁰⁰ Ex. NER004, SGH Testimony at 61-62; Ex. INT015, SGH Evaluation and Design Confirmation of As-Deformed CEB at 22; Ex. NRC001-R, Staff Testimony at 70.

⁸⁰¹ Tr. at 650-55 (Saouma).

⁸⁰² Tr. at 650 (Simons).

⁸⁰³ Tr. at 650-52 (Saouma).

⁸⁰⁴ Tr. at 652-53 (Bolourchi).

at Seabrook, he has raised a substantial question as to the likelihood that it may eventually happen.⁸⁰⁵ The FSEL study cited by Dr. Saouma refers to bridges and other structures in Japan affected by ASR where reinforcement damage has occurred.⁸⁰⁶ The report's authors stated that "it is difficult to comment on the potential for reinforcement fractures in ASR-affected structures found within the United States."⁸⁰⁷ They noted that "[t]he results of Miyagawa's study on fracture mechanisms [in Japan] suggest that reinforcement is only subject to brittle failure when significant damage exists at the interior of the bend," but that "American practice dictates the use of large radius bends: two times the bar diameter for the reinforcement used within the Japanese study."⁸⁰⁸ But the FSEL study did not rule out the possibility of rebar fractures in the United States, observing that "the lower ductility standards used in the manufacture of American reinforcement may offset the benefits of larger bend radii."⁸⁰⁹

The SGH analyses referred to by Dr. Bayrak show that at present the stress on the rebar is well below the yield strength.⁸¹⁰ This un rebutted evidence is sufficient to justify a reasonable assurance finding regarding the immediate risk of rebar fracture or yielding. At the same time, however, these SGH analyses in no way preclude the significant risk posed by localized rebar fracture or yielding that might reasonably result from continued ASR expansion over the next thirty years of licensed operation. Dr. Bayrak testified that "we can all safely assume, as it was assumed in NextEra programs, that the expansion potential is rather high. Much higher than the limits that are in place."⁸¹¹ Dr. Saouma has identified a plausible risk that rebar fracture or yielding may occur in the highly stressed areas of seismic Category I structures from the negative impacts of the chemical prestressing effect. As ASR expansion increases, it is reasonable to expect that the negative impacts of chemical prestressing will also increase.

We have reviewed NextEra's Structures Monitoring Program, but we have not been able to locate a provision for monitoring the future risk of reinforcement fracture or yielding.⁸¹² NextEra witness Mr. Carley testified that when

⁸⁰⁵ Ex. INT032, Dr. Saouma Rebuttal Testimony at 19-21.

⁸⁰⁶ See Ex. NRC075, Deschenes, et al. at 25-29.

⁸⁰⁷ *Id.* at 28.

⁸⁰⁸ *Id.* at 29.

⁸⁰⁹ *Id.* For this reason, we are not persuaded that the Seabrook reinforcement steel is not subject to a risk of rebar brittle fracture because it was "designed in accordance with codes that do not permit rebar bending to the extent that would be required for susceptibility to rebar fracture." Ex. INT010, Original LAR at PDF 21 tbl.3. Moreover, this statement in the LAR does not address the risk of rebar yielding.

⁸¹⁰ Ex. INT022, SEM at PDF 91-92 tbl.1.

⁸¹¹ Tr. at 782 (Bayrak).

⁸¹² See generally Ex. NER007, Seabrook [SMP] Manual Rev. 7 (non-public).

NextEra removes a concrete core to install an extensometer and exposes the rebar, “we verify that the rebar is solid, pristine, not rusting. No deterioration of the rebar.”⁸¹³ While this confirms that it is possible to examine installed rebar for signs of deterioration, the examination described by NextEra witness Mr. Carley apparently only occurs in those areas where NextEra happens to uncover the rebar while installing an extensometer. Insofar as future analyses suggest the stress from ASR expansion is approaching the yield strength of the rebar in one or more areas, there is no evidence in the record that NextEra’s existing monitoring efforts will ensure that rebar fracture or yielding either does not occur or is detected if it has occurred. The Board therefore concludes that, in order to provide reasonable assurance of adequate protection of public health and safety, it is necessary to add a license condition requiring the development of such a monitoring program contingent on the results of future stress analyses,⁸¹⁴ as follows:

If stress analyses conducted pursuant to the SEM show that the stress in the rebar from ASR-induced expansion and other loads will exceed the yield strength of the rebar, NextEra must develop a monitoring program sufficient to ensure that rebar failure or yielding does not occur, or is detected if it has already occurred, in the areas at-risk of rebar failure or yielding.

With the addition of this license condition, the Board resolves in NextEra’s favor the issues raised by Contention B and incorporated in the reformulated contention.

6. Summary of Board Conclusions on Representativeness Issues

The Board holds as to Part VIII.A.3 (Test Specimen Scaling, Reinforcement, and Size) and Part VIII.A.4 (Boundary Conditions) that the LSTP provided data that is sufficiently representative of Seabrook structures to provide reasonable assurance of adequate protection of public health and safety. As to Part VIII.A.2 (Concrete) and Part VIII.A.5 (Effect of Reinforcement (Use of Original Material Properties)), the Board has identified significant uncertainties that preclude a reasonable assurance finding absent the conditions imposed by the Board.⁸¹⁵ With those conditions added, however, the LSTP data is sufficiently representative to satisfy regulatory requirements as to all the representativeness issues raised by C-10.

⁸¹³ Tr. at 532 (Carley).

⁸¹⁴ See Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 4-1.0 to -2.1 (non-public).

⁸¹⁵ CLI-19-7, 90 NRC at 11 (citing *Vt. Yankee*, CLI-06-8, 63 NRC at 238).

B. ASR Monitoring Intervals

Under the SMP, NextEra will conduct periodic inspections of ASR-affected structures depending on the severity of ASR expansion as determined via in-situ monitoring.⁸¹⁶ Thus, Seabrook structures with no symptoms of ASR are inspected every five or ten years based on existing SMP requirements.⁸¹⁷ Locations with ASR symptoms and with CCI values below 1.0 mm/m (0.1%) in-plane expansion are monitored every two and a half years.⁸¹⁸ And locations with CCI values of 1.0 mm/m (0.1%) or greater are monitored every six months for in-plane expansion, through-thickness expansion, and volumetric expansion.⁸¹⁹

1. C-10's *Prima Facie* Case

In Contention H, C-10 presented, and we admitted, a challenge to “the appropriate length of [ASR] monitoring intervals.”⁸²⁰ In his testimony, Dr. Saouma stated that NextEra erroneously assumed that ASR expansion is linear because ASR expands according to a sigmoid curve, which is a plot of expansion versus time that starts linearly and then curves more rapidly upwards before plateauing.⁸²¹ The chemical progression of ASR is generally understood to follow a sigmoid curve, which consists of “a dormant period, an active period, and . . . a period where [ASR is] petered out.”⁸²² Dr. Saouma focused on NextEra’s failure to establish Seabrook’s location on the sigmoid curve.⁸²³ The sigmoid curve for ASR at Seabrook, Dr. Saouma testified, is essential to establishing proper monitoring intervals.⁸²⁴ Based on Dr. Saouma’s testimony, C-10 challenged NextEra’s characterization of ASR progression at Seabrook as a “slow reaction,” and argued that Seabrook falls within the slower phase of ASR now, but that “the rate of expansion will accelerate at some point.”⁸²⁵ Also, Dr. Saouma asserted that NextEra’s method of deriving concrete expansion from the degradation of its elastic modulus is not universally accepted.⁸²⁶

⁸¹⁶ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 2-1.7, 2-1.9 to -1.15, 3-1.10 (non-public).

⁸¹⁷ *Id.* at 2-1.7 to -1.8 (non-public).

⁸¹⁸ Ex. INT010, Original LAR at PDF 33 tbl.5.

⁸¹⁹ *Id.*; Ex. NER001, MPR Testimony at 125.

⁸²⁰ LBP-17-7, 86 NRC at 125; *see id.* at 121-25.

⁸²¹ Ex. INT032, Dr. Saouma Rebuttal Testimony at 12-13, 34 fig.17; Ex. INT027, Dr. Saouma Pre-Filed Testimony at 33 fig.18(b).

⁸²² Tr. at 387 (Sherman).

⁸²³ Tr. at 413 (Saouma).

⁸²⁴ *Id.*; Ex. INT032, Dr. Saouma Rebuttal Testimony at 34.

⁸²⁵ Ex. INT032, Dr. Saouma Rebuttal Testimony at 12-13.

⁸²⁶ Tr. at 392-93, 771 (Saouma).

Because Dr. Saouma's testimony provides a plausible analysis to support his expert opinion, C-10 has satisfied its burden to present a prima facie case.

2. *NextEra and Staff Responses*

NextEra witnesses testified that over the past eight years, Seabrook has shown a relatively steady rate of in-plane expansion, and that this, in turn, indicates that many areas at the facility are in the active portion of the sigmoid curve.⁸²⁷ In particular, NextEra witness Mr. Simons testified that NextEra measured an in-plane expansion of 0.04 mm/m (0.004%) per year as an average for all Tier 3 structures.⁸²⁸ NextEra witnesses further testified that the through-thickness expansion rate in the Tier 3 structures was 0.2 mm/m (0.02%) per year,⁸²⁹ with the most severe structure exhibiting 5.6 mm/m or 0.56% total through-thickness expansion.⁸³⁰ Still, because NextEra monitors Tier 3 structures every six months,⁸³¹ its witnesses testified that even on the steep part of the curve, there are "decades of margin" before Seabrook structures might reach the SMP through-thickness expansion limit determined by the LSTP.⁸³² Therefore, NextEra witness Mr. Simons testified, a six-month interval is acceptable for monitoring the most ASR-affected areas at Seabrook.⁸³³

NextEra determined that the through-thickness acceptance limit may be reached within the licensed operating timeframe of Seabrook.⁸³⁴ NextEra witnesses testified that, based on an expansion rate from the IStructE document,⁸³⁵

⁸²⁷ Tr. at 399-400 (Simons). NextEra testified that, based on the qualitative descriptions in Dr. Saouma's sigmoid curve, *see* Ex. INT027, Dr. Saouma Pre-Filed Testimony at 33 fig.18(b), Seabrook is in the active phase/accelerating stage (i.e., stages iii, iv, and v). Tr. at 421-22 (Sherman).

⁸²⁸ Tr. at 415-16 (Simons).

⁸²⁹ Tr. at 685-86 (Simons), 695 (Bayrak). NextEra witness Mr. Carley testified that NextEra is seeing a rate, "over a six-month period, of .02[%] increasing." We find this testimony somewhat unclear but interpret it to mean 0.2 mm/m (0.02%) through-thickness expansion per year, consistent with other testimony. Tr. at 1136 (Carley).

⁸³⁰ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at B-14 tbl.2 (non-public); Tr. at 421 (Simons), 510 (Simons), 559 (Bagley), 1136 (Carley).

⁸³¹ Ex. INT010, Original LAR at PDF 33 tbl.5.

⁸³² Tr. at 415-16 (Simons), 713-14 (Collins); *see* Tr. at 695-96 (Bayrak) (stating that "in the worst case . . . there is no reason to expect" that you will be "over the limit" within the next six-month inspection); *see also* Tr. at 1126-27 (Lehman); Tr. at 691-92 (Buford) (stating that six-month monitoring frequency is a conservative option).

⁸³³ Tr. at 415-16 (Simons) ("So clearly a six-month interval is completely acceptable for monitoring something that is going that slow.").

⁸³⁴ Tr. at 416 (Simons).

⁸³⁵ Ex. NER012, IStructE Structural Effects of [ASR] at 32 (non-public).

(which is also the Tier 3 through-thickness expansion rate at Seabrook),⁸³⁶ a steady expansion rate of 0.2 mm/m (0.02%) per year will push Seabrook over the through-thickness expansion limit (XX mm/m or XX%) in XXXX.⁸³⁷ NextEra witnesses stated that the Staff-imposed license condition to perform periodic expansion assessments “includes an activity to evaluate the rate of ASR progression based on the observed expansion data and the margins to the acceptance criteria.”⁸³⁸ They further testified that “[i]f evidence suggests that the monitoring intervals (or any other aspect of the SMP) at Seabrook are insufficient, the plant will evaluate the need for potential changes.”⁸³⁹

In addition, under the Staff’s license condition, NextEra is required to conduct a Corroboration Study to determine whether expansion as determined by the modulus correlation matches actual expansion at the plant.⁸⁴⁰ If the data do not match, NextEra is required to establish pre-instrument through-thickness, reassess total through-thickness (and volumetric) expansion against the acceptance criteria from the LSTP, and “determine whether the structures [a]re operable and whether their licensing basis need[s] to be changed to address it.”⁸⁴¹

With regard to the sigmoid curve, as indicated earlier, NextEra witness Mr. Sherman testified that it consists of “a dormant period, an active period, and . . . a period where [ASR has] petered out.”⁸⁴² NextEra witnesses further testified that, according to modulus testing conducted by NextEra, Seabrook is in the active phase, which is “the steep part of the curve” beyond the inflection point.⁸⁴³ In addition, NextEra witness Mr. Simons stated NextEra did not assume ASR progressed linearly, but instead that ASR in-plane expansion data from Seabrook has exhibited a relatively linear trend.⁸⁴⁴

Staff witnesses testified that through-thickness expansion is measured starting at the relatively small in-plane expansion level of 1.0 mm/m (0.1%).⁸⁴⁵ According to Staff witnesses, since it is measured every six months, even the fastest possible expansion could not exceed the expansion limits before the end of the next monitoring interval.⁸⁴⁶ Further, Staff witness Dr. Thomas noted that “[t]here has been no case history where we [have] seen that ASR was the primary cause

⁸³⁶ See *supra* note 829 and accompanying text.

⁸³⁷ See Ex. NER003, MPR Testimony, Proprietary Appendix at 2 tbl.3 n.3 (non-public).

⁸³⁸ Ex. NER001, MPR Testimony at 129; see Ex. INT024, Final SE at PDF 67-69.

⁸³⁹ Ex. NER001, MPR Testimony at 129.

⁸⁴⁰ *Id.* at 62, 120-21.

⁸⁴¹ Tr. at 742 (Buford); see *infra* Part VIII.D.

⁸⁴² Tr. at 387 (Sherman).

⁸⁴³ Tr. at 389-90 (Sherman); Tr. at 399-400, 415 (Simons).

⁸⁴⁴ Tr. at 399 (Simons).

⁸⁴⁵ Ex. NRC001-R, Staff Testimony at 45.

⁸⁴⁶ Tr. at 420 (Buford), 1122-24 (Buford).

of the structural failure of collapse” and therefore “the risk related to ASR is relatively low, provided it’s monitored and managed.”⁸⁴⁷ From this, Staff witness Mr. Lehman testified that where Seabrook falls on the sigmoid curve “had no bearing on [the Staff’s] reasonable assurance determination.”⁸⁴⁸ NextEra witnesses testified, however, that “the only need for understanding [the] rate of expansion at Seabrook is validation that the monitoring frequency is sufficient, and NextEra is using in-situ monitoring for this purpose.”⁸⁴⁹

3. Findings of Fact and Board Analysis

Based on the preponderance of the evidence in the record before us regarding the ASR monitoring interval for Tier 3 areas, the Board finds that the ASR monitoring intervals under the SMP fail to provide reasonable assurance in accordance with 10 C.F.R. §§ 50.40(a) and 50.57(a) that operation of Seabrook Unit 1 will not endanger the health and safety of the public. Specifically, NextEra has not shown by a preponderance of the evidence that the current SMP can effectively account for an increase in the rate of ASR expansion, especially when NextEra’s own data indicates the SMP through-thickness expansion limit may be reached in XXXX.⁸⁵⁰ We find action must be taken by NextEra well before the through-thickness expansion limit is reached. Since the license renewal authorizes operation until March 15, 2050, the Board finds that NextEra must establish a tangible mechanism that will detect an increased expansion rate and timely implement more frequent monitoring intervals, if necessary, because of an increased expansion rate.

By NextEra’s own admission, the through-thickness expansion acceptance limit will be exceeded in XXXX, with XXXX additional years of licensed operation.⁸⁵¹ By our calculations,⁸⁵² based on the most severe through-thickness cracking in the Tier 3 areas (5.6 mm/m or 0.56%) and assuming a steady expansion rate of 0.2 mm/m or 0.02% as observed at Seabrook Unit 1,⁸⁵³ in 2050 the maximum through-thickness expansion will be 12.4 mm/m (1.24%). This

⁸⁴⁷ Tr. at 1115 (Thomas).

⁸⁴⁸ Tr. at 1122-23 (Lehman).

⁸⁴⁹ Ex. NER001, MPR Testimony at 152.

⁸⁵⁰ See Ex. NER003, MPR Testimony, Proprietary Appendix at 2 tbl.3 n.3 (non-public).

⁸⁵¹ *Id.* (non-public).

⁸⁵² We assumed that the most severe cracking in Tier 3 (5.6 mm/m or 0.56%) areas was measured in 2016, when through-thickness expansion monitoring began, see Ex. NER001, MPR Testimony at 126, and that there would be 0.2 mm/m (0.02%) of expansion per year throughout the remaining operating period (i.e., 2016 to 2050).

⁸⁵³ NextEra witnesses further testified that the through-thickness expansion rate in the Tier 3 structures was 0.2 mm/m (0.02%) per year. Tr. at 685-86 (Simons), 695 (Bayrak).

is XX mm/m (XX%) above the expansion limit. In fact, by our calculation, the XX mm/m (XX%) through-thickness expansion acceptance limit may be reached in XXXX, with XXXX years of licensed operation remaining.⁸⁵⁴

If in fact the expansion rate were to increase 20% to 0.24 mm/m (0.024%) per year, then the through-thickness expansion acceptance limit would be reached by XXXX. However, even without considering that the expansion rate may increase, a steady expansion rate will put NextEra beyond the acceptance limit within its licensed operating timeframe. We also note that the IStructE document states that ASR does not expand uniformly within a given structure, adding another variable to future ASR expansion.⁸⁵⁵ The Board finds that there is no conclusive evidence as to whether the through-thickness expansion rate will or will not accelerate during the next thirty years. The question turns in large part on where Seabrook's concrete is on the sigmoid curve that represents the typical path of ASR expansion.⁸⁵⁶ While NextEra witnesses testified that Seabrook's concrete is already on the active/steep part of the sigmoid curve,⁸⁵⁷ Dr. Saouma testified that "Seabrook is most likely in the very early slower phase, but the rate of expansion will accelerate at some point."⁸⁵⁸ Through-thickness expansion monitoring only began in 2016,⁸⁵⁹ and the Board lacks data sufficient to demonstrate that NextEra knows where it is on the sigmoid curve. NextEra witness Mr. Sherman testified that Seabrook concrete is on the active part of the curve based on elastic modulus testing and petrography.⁸⁶⁰ Dr. Saouma responded, however, that NextEra's method is "not yet mature enough to be able to perform a quantifiable assessment of expansion based on . . . the change of elastic [modulus]."⁸⁶¹ The Board therefore finds that the position of Seabrook concrete on the sigmoid curve is uncertain.

The Board further finds, given that the expansion rate may increase as Dr. Saouma claims, that there is a significant risk that the current six-month monitoring frequency for Tier 3 areas may prove inadequate over the thirty years of licensed operation. The Staff testified that, in terms of its regulatory review, "there really wasn't a requirement to identify where the plant is on the sigmoid curve as long as the inspection frequencies were frequent enough to

⁸⁵⁴ We used the following equation: $(XX \times 0.2 \text{ mm/m}) + 5.6 \text{ mm/m} = XX \text{ m/m}$. XX years from 2016 is XXXX.

⁸⁵⁵ Ex. NER012, IStructE Structural Effects of [ASR] at 31 (non-public).

⁸⁵⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 32 fig.18.

⁸⁵⁷ Tr. at 399 (Simons).

⁸⁵⁸ Ex. INT032, Dr. Saouma Rebuttal Testimony at 13.

⁸⁵⁹ Ex. NER001, MPR Testimony at 126.

⁸⁶⁰ Tr. at 387-90 (Sherman).

⁸⁶¹ Tr. at 393 (Saouma).

capture expansion prior to hitting the limits.”⁸⁶² Staff witnesses noted that the expansion rate could increase 1,000% in six months in the location with the highest through-thickness expansion (5.6 mm/m or 0.56%) and still be well below the expansion limits.⁸⁶³ That is true at present, but reasonable assurance requires that the six-month monitoring interval provide adequate protection for the remaining thirty-year period of licensed operation. As explained above, the XX mm/m (XX%) through-thickness expansion acceptance limit will likely be reached during the thirty-year period of licensed operation, at least in the most degraded areas. As the total level of expansion in a degraded area approaches the expansion limit, a smaller increase in the expansion rate will be sufficient to push the total expansion over the limit before the next inspection. Thus, the risk will increase that the current six-month monitoring frequency for Tier 3 areas will not comply with the Staff’s requirement that “testing frequencies are short enough that there isn’t the potential for structural loss of function in between the inspection intervals.”⁸⁶⁴ Moreover, the sigmoid curve indicates that the expansion rate may increase over time, as Dr. Saouma testified, making it more likely that the six-month monitoring interval will not be frequent enough to capture expansion prior to reaching the limit.

The Board disagrees with NextEra and the Staff that the six-month interval for Tier 3 areas is the most stringent identified in the public literature. NextEra witnesses testified that the six-month monitoring interval reflects the most frequent interval recommended by the FHWA.⁸⁶⁵ The Staff emphasized that six months is the most frequent monitoring interval it is aware of.⁸⁶⁶ However, application of the IStructE document, which NextEra and the Staff have cited as authoritative on other issues,⁸⁶⁷ would likely have resulted in more frequent monitoring for Seabrook. The IStructE document classifies structures in different categories based on an expansion index, the risk of failure, the site environment, and “[r]einforcement detailing class.”⁸⁶⁸ The detailed inspections and monitoring of cracks in ASR-affected structures proceeds according to the degradation categories:

⁸⁶² Tr. at 420 (Buford).

⁸⁶³ Ex. NRC091, Staff Response to Ex. INT051-R at 5.

⁸⁶⁴ Tr. at 1122 (Buford).

⁸⁶⁵ Ex. NER001, MPR Testimony at 128.

⁸⁶⁶ Tr. at 420 (Buford) (“So six months is about the most frequent that in my knowledge for any aging mechanism, ASR included, that would — I don’t know of any program that would look at something more frequently than that.”).

⁸⁶⁷ Ex. NER001, MPR Testimony at 16, 39, 41, 45, 54, 82, 89, 122, 128, 137; Ex. NRC091, Staff Response to Ex. INT051-R at 4-5; NRC Staff’s Supp. Proposed Findings of Fact and Conclusions of Law at 3 n.16, 7 n.40.

⁸⁶⁸ Ex. NER012, IStructE Structural Effects of [ASR] at 20 tbl.5 (non-public).

- (i) Category A (Very Severe) - Monitored every (1) month
- (ii) Category B (Severe) - Monitored every two (2) months
- (iii) Category C (Moderate) - Monitored every four (4) months
- (iv) Category D (Mild) - Monitored every twelve (12) months.⁸⁶⁹

Unless the Seabrook structures with Tier 3 expansion would be classified in Category D, which seems unlikely,⁸⁷⁰ the initial monitoring interval for Seabrook seismic Category I structures would have been less than six months.⁸⁷¹

The Commission indicated that the Board should consider “whether the inspection intervals are sufficiently protective of public health and safety” and “whether the maintenance rule [10 C.F.R. § 50.65(a)(1)] affects this inquiry.”⁸⁷² The maintenance rule directs licensees to “monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, and components . . . are capable of fulfilling their intended functions.”⁸⁷³ Having found that the six-month inspection interval may not be sufficiently protective for the remaining period of licensed operation, we consider whether NextEra’s guidance for implementing the maintenance rule alters that conclusion.

NextEra’s SMP states that it “provides guidance for the conduct of the structural condition monitoring program to meet the requirements of [the maintenance rule].”⁸⁷⁴ The SMP, however, lacks any requirement that NextEra management timely evaluate the need for more frequent monitoring intervals if it detects a significant increase in the ASR expansion rate or otherwise detects “the potential for structural loss of function in between the inspection intervals.”⁸⁷⁵ The SMP states that “Follow-Up and Interim inspections may be performed in addition to the required 6-month or 30-month frequency inspections,” but any such action is entirely “at the discretion of the engineer.”⁸⁷⁶ The SMP provides no guidance as to how the discretion is to be exercised.

⁸⁶⁹ *Id.* at 30-31, 31 tbl.7 (non-public).

⁸⁷⁰ A Category D structure must either be located in a dry environment or the consequence of structural failure must be slight. *Id.* at 20 tbl.5 (non-public). It is also hard to say Seabrook structures would be classified in Category A (Very Severe) or B (Severe) because those categories involve remedial work and/or load restrictions. *Id.* at 30 (non-public).

⁸⁷¹ The IStructE document permits inspection intervals for severity ratings C and D to be relaxed from 4 and 12 months, respectively, once trends for a structure have been established and moisture conditions are stable. *Id.* Addendum at 3 of 5 (non-public).

⁸⁷² CLI-18-4, 87 NRC at 110 n.152.

⁸⁷³ 10 C.F.R. § 50.65(a)(1).

⁸⁷⁴ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 1-1.1 (citing 10 C.F.R. § 50.65) (non-public).

⁸⁷⁵ Tr. at 1122 (Buford).

⁸⁷⁶ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 3-1.10 (non-public).

In the absence of evidence to the contrary, NRC does not presume that a licensee will violate agency regulations whenever the opportunity arises.⁸⁷⁷ The Board makes no such presumption here. The problem with the SMP is the lack of any specific directive as to when additional inspections must be performed. This creates a reasonable possibility of a violation of the maintenance rule's requirement that NextEra monitor the condition of Seabrook seismic Category I structures so as to provide reasonable assurance that those structures remain capable of fulfilling their intended functions for the period of licensed operation.⁸⁷⁸

Apart from the SMP, NextEra witnesses testified that the Staff's license condition to perform periodic expansion assessments will require evaluation of the monitoring intervals.⁸⁷⁹ The condition requires that if NextEra's projections of future expansion "indicate that the limits may be exceeded prior to the next periodic check, NextEra should further investigate the location(s) in question *or* develop contingency plans for extending the expansion limit (e.g., supplemental testing)."⁸⁸⁰ Thus, NextEra may avoid investigating the location of concern by developing plans for supplemental testing to increase the expansion limits, presumably by a testing program similar to the LSTP that could take years to create and implement. NextEra witnesses also testified that the plant will evaluate the need for potential changes "[i]f evidence suggests that the monitoring intervals . . . at Seabrook are insufficient,"⁸⁸¹ but they failed to identify any provision of the SMP or other NextEra document requiring such action.

Thus, the Board finds the SMP and the Staff's license condition inadequate to fulfill the maintenance rule's directive that a licensee monitor the condition of its structures "in a manner sufficient to provide reasonable assurance that these structures . . . are capable of fulfilling their intended functions."⁸⁸² To remedy this deficiency, the Board imposes the following license condition:

If the ASR expansion rate in any area of a Seabrook seismic Category I structure significantly exceeds 0.2 mm/m (0.02%) through-thickness expansion per year, NextEra's Management will perform an engineering evaluation focused on the continued suitability of the six-month monitor-

⁸⁷⁷ See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-9, 53 NRC 232, 235 (2001). The Board makes no such presumption. The issue is the vagueness of the programmatic actions to be taken. The result could be an inadvertent violation of the maintenance rule.

⁸⁷⁸ 10 C.F.R. § 50.65(a)(1).

⁸⁷⁹ Ex. NER001, MPR Testimony at 129.

⁸⁸⁰ Ex. INT019-R, MPR-4273 at B-2 to -3 (emphasis added); see Ex. INT024, Final SE at PDF 68-69.

⁸⁸¹ Ex. NER001, MPR Testimony at 129.

⁸⁸² 10 C.F.R. § 50.65(a)(1).

ing interval for Tier 3 areas. If the engineering evaluation concludes that more frequent monitoring is necessary, it shall be implemented under the SMP.⁸⁸³

As stated above, NextEra admitted that the SMP through-thickness expansion acceptance limit may be exceeded in XXXX, even though there will be five additional years of licensed Seabrook operations.⁸⁸⁴ This in itself requires NextEra to ensure the adequacy of its monitoring frequencies so that it will capture any deleterious increase in concrete expansion rates. Therefore, to provide reasonable assurance of adequate protection of public health and safety, the Board imposes the above license condition in order to ensure adequate ASR monitoring frequencies at Seabrook Unit 1.

C. Accelerated Expansion Tests and Alternative Methodologies

C-10 argued NextEra should have performed an accelerated expansion test.⁸⁸⁵ An accelerated expansion test is a procedure that measures the ultimate potential for ASR expansion of a concrete sample.⁸⁸⁶

1. Motion in Limine

NextEra argued Dr. Saouma's testimony on alternative methodologies, such as conducting accelerated expansion tests⁸⁸⁷ and using probabilistic based analyses,⁸⁸⁸ should be excluded from the evidentiary record.⁸⁸⁹ NextEra asserted that we denied admission of Contention G for attempting to prescribe a specific methodology, rather than address the adequacy of the chosen methodologies,⁸⁹⁰ and therefore Dr. Saouma's attempts to prescribe specific methodolo-

⁸⁸³ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 3-1.10 (non-public).

⁸⁸⁴ *Id.* (non-public).

⁸⁸⁵ C-10 Rebuttal SOP at 4; Ex. INT027, Dr. Saouma Pre-Filed Testimony at 32-33.

⁸⁸⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 32 (ASR "can be accelerated by storing [Seabrook concrete] cores at temperatures ranging from 38 to 60 deg C. Small 'disks' are glued on the cores, the cores are then placed in a container, and the container in a so called reactor which is heated to the right temperature The cores are periodically extracted, and the elongation is measured with a so-called [Differential Electrical Mobility Classifier] instrument between the disks").

⁸⁸⁷ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony §§ C.2.1, C.5, C.6, C.8, C.11 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony §§ C.2.1, C.5, C.6, C.8, C.11; *see* Tr. at 378-79 (Saouma).

⁸⁸⁸ Ex. INT027, Dr. Saouma Pre-Filed Testimony § C.3.4.1.1.

⁸⁸⁹ NextEra MIL 2 at 10-12.

⁸⁹⁰ LBP-17-7, 86 NRC at 133-35.

gies are irrelevant and immaterial.⁸⁹¹ NextEra argued “the mere presentation of an alternative method of regulatory compliance is irrelevant to the question . . . whether the method presented by the applicant satisfies regulatory requirements.”⁸⁹² Therefore, NextEra seeks to exclude Dr. Saouma’s testimony insofar as it discusses alternative methodologies, including general references to a probabilistic based method, accelerated expansion tests, “detailed petrographic stud[ies],”⁸⁹³ ultrasonic pulse echo, ultrasonic pulse velocity,⁸⁹⁴ impact-echo,⁸⁹⁵ acoustic emission,⁸⁹⁶ RH/capacitance probe, wood stick, microwave technique: GPR, microwave technique: TDR, and microwave technique: open-ended coaxial probe.⁸⁹⁷

The Staff similarly argued that consideration of alternative techniques is beyond the scope of its review of NextEra’s license amendment request because the Staff’s responsibility is to ensure that the applicant “is guided by the considerations that govern the issuance of the initial licenses.”⁸⁹⁸ Thus, the Staff asserted, any argument requesting an alternative approach is outside the scope of the proceeding.⁸⁹⁹

In opposing NextEra’s Motion in Limine, C-10 claimed that Dr. Saouma’s arguments concerning alternative compliance methodologies are properly before the Board.⁹⁰⁰ C-10 maintained that Dr. Saouma is not stating that there are better alternatives, but rather that his testimony demonstrates the inadequacy of the methods used by NextEra by comparing it to more effective methods.⁹⁰¹

We hold that the need to conduct accelerated expansion tests is rooted in a lack of representativeness and invokes the issue regarding the adequacy of monitoring intervals that we found admissible in Contention H. The testimony is therefore material and relevant to the reformulated contention. However, regarding a probabilistic-based method and Dr. Saouma’s list of alternative methodolo-

⁸⁹¹ NextEra MIL 2 at 10-12.

⁸⁹² *Id.* at 10 (emphasis omitted).

⁸⁹³ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 5, 20, 31, 32, 35-36; *id.* at 31 (advocating for the use of petrographic damage rating index (DRI)); *see* Ex. INT040, Assessment of ASR Using DRI at 90 (non-public).

⁸⁹⁴ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 35-36.

⁸⁹⁵ *Id.*

⁸⁹⁶ *Id.*; Tr. at 1150-51 (Saouma).

⁸⁹⁷ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 35-36.

⁸⁹⁸ *See* NRC Staff SOP at 47 (citing 10 C.F.R. § 50.92(a)). The Staff further underscored that it is not their responsibility to “determine whether the request could be achieved in some other, arguably better, manner[.]” *Id.*

⁸⁹⁹ *Id.* at 47-48.

⁹⁰⁰ C-10 Opp. to MIL 2 at 6-9.

⁹⁰¹ *Id.* at 8-9.

gies to using CCI,⁹⁰² since we have found the use of the CCI acceptable subject to our license condition,⁹⁰³ we need not consider the relevancy or materiality of the listed alternatives to CCI.

Dr. Saouma suggested three main reasons for conducting accelerated expansion tests: to determine (1) a technical basis for the inspection intervals; (2) Seabrook's location on the sigmoid curve; and (3) the ultimate potential for ASR expansion.⁹⁰⁴ Both the monitoring intervals and the overall issue of representativeness are implicated in C-10's assertions that an accelerated expansion test should be conducted. With regard to representativeness, Dr. Saouma testified that "[a]ccelerated expansion tests would have allowed a comparison to determine the extent to which the Seabrook concrete and the [LSTP] concrete differed."⁹⁰⁵ Thus, one purpose of accelerated expansion tests is to confirm that the LSTP concrete is, or is not, representative of Seabrook. Dr. Saouma also stated that accelerated expansion tests can provide information to help determine where Seabrook is on the sigmoid curve.⁹⁰⁶ We find that Seabrook's location on the sigmoid curve would inform the adequacy of monitoring intervals, a topic within the scope of this proceeding. Contention H, which we found "admissible but limited to the appropriate length of monitoring intervals[.]" is implicated in C-10's testimony concerning accelerated expansion tests.⁹⁰⁷ Therefore, contrary to NextEra's argument, C-10 did not assert the need for an accelerated expansion test as a "mere presentation of an alternative method of regulatory compliance"⁹⁰⁸ but rather to probe the adequacy of two components of the reformulated contention with its testimony.

A key inquiry of this proceeding is whether the proposed monitoring intervals are adequate to capture ASR expansion at Seabrook, and that adequacy is based largely on whether the LSTP is sufficiently representative of Seabrook.⁹⁰⁹ As such, although NextEra may have indicated a tenuous relationship between accelerated expansion tests and inadmissible Contention G, there are two connections between accelerated expansion tests and the reformulated contention — representativeness and the adequacy of ASR monitoring intervals. Therefore, we hold the testimony surrounding accelerated expansion tests is both material and relevant to resolving the reformulated contention, and we deny NextEra's Motion in Limine regarding accelerated expansion tests.

⁹⁰² See *supra* notes 893-897 and accompanying text.

⁹⁰³ See *supra* Part VIII.A.2.d.

⁹⁰⁴ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 32-33; Tr. at 386, 415 (Saouma).

⁹⁰⁵ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 10.

⁹⁰⁶ *Id.* at 32-33.

⁹⁰⁷ LBP-17-7, 86 NRC at 125.

⁹⁰⁸ NextEra MIL 2 at 10.

⁹⁰⁹ LBP-17-7, 86 NRC at 122-23.

We also find no merit in NextEra's argument that testimony concerning accelerated expansion tests should be excluded on the same grounds that we excluded Contention G.⁹¹⁰ Contrary to NextEra's assertions, we did not reject Contention G merely because it involved an alternative methodology, but because it would have required testing to the point of failure, or the "tipping point," which would have provided less conservative expansion limits than those in the LAR.⁹¹¹ The accelerated expansion tests proposed by Dr. Saouma, however, would not necessarily propose less conservative monitoring intervals than those in the LAR; they might result in more frequent monitoring intervals than proposed by NextEra. This is one instance in which it is not only appropriate, but also necessary to consider alternative tests proposed by C-10 to determine whether the LAR provides adequate protection of public health and safety.⁹¹² Thus, previously declining to admit Contention G in no way renders out of scope C-10's proffered testimony on accelerated expansion tests.

Concerning petrographic damage rating index (DRI), Dr. Saouma stated that NextEra "prematurely ruled out the applicability of petrographic DRI" and that petrographic analysis should be conducted in conjunction with CCI.⁹¹³ In addition, Dr. Saouma proffered several alternatives to CCI, as noted above.⁹¹⁴ NextEra argued that these are alternative compliance methods that should be excluded from the record.⁹¹⁵ We need not address here whether these alternatives to CCI should be excluded, because, as elaborated above, we find that using CCI as a monitoring technique is sufficient when analyzed with the additional assurances provided by our license condition.⁹¹⁶

Turning to the probabilistic-based methods suggested by Dr. Saouma,⁹¹⁷ we

⁹¹⁰ *Id.* at 134-35.

⁹¹¹ *See id.* at 135 (holding that Contention G failed to raise a material issue because "the current ASR levels at Seabrook and the LAR acceptance criteria are bounded by the test program, such that the tipping point would not be reached before the acceptance criteria are exceeded"). As the Staff argued, "the LAR is structured such that the limits on the Seabrook concrete are more conservative than the 'tipping point' of the concrete[.]" *Id.* at 134.

⁹¹² *See Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-88-13, 27 NRC 509, 548-49, *aff'd in part, vacated in part, and remanded*, ALAB-905, 28 NRC 515 (1988) (reviewing alternative compliance methods to determine reasonable assurance); *see also Palisades*, CLI-15-22, 82 NRC at 317-18 (noting alternative methods can demonstrate reasonable assurance).

⁹¹³ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 20, 31.

⁹¹⁴ *See supra* notes 893-897 and accompanying text.

⁹¹⁵ NextEra MIL 2 at 10-12.

⁹¹⁶ *See supra* Part VIII.A.2.d.

⁹¹⁷ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 29-31. Dr. Saouma stated "[p]robabilistic risk (or safety) assessment (PRA) consists of an analysis of the operations of a particular nuclear power plant (NPP), which focuses on the failures or faults that can occur to components, systems

(Continued)

grant NextEra's Motion in Limine. Dr. Saouma advocated for the use of probabilistic-based methods, in lieu of NextEra's code-based approach.⁹¹⁸ Although such methods could be material under GDC 1, which permits supplementation of general codes and standards,⁹¹⁹ we need not address them here for two reasons. First, they were not addressed in C-10's Petition. Second, unlike accelerated expansion tests, they are unrelated to any of the bases of the reformulated contention, and therefore do not fall within the scope of this proceeding.

We also exclude all of C-10's proffered testimony referring to the methodologies used at other structures and power plants.⁹²⁰ Such testimony is unrelated to the representativeness of the LSTP, and unrelated to Seabrook in general. Therefore, with regard to testimony comparing ASR monitoring methods used at Seabrook to other structures and power plants, we grant NextEra's Motion in Limine and decline to address such testimony.⁹²¹

2. C-10's *Prima Facie* Case

Dr. Saouma testified that an accelerated expansion test is an "easy test"⁹²² that NextEra should have performed to gauge where Seabrook structures are on the sigmoid curve.⁹²³ Such a test creates a plot of ASR expansion versus time for the concrete test sample.⁹²⁴ Dr. Saouma stated that:

It is . . . problematic that FSEL failed to perform the accelerated expansion tests of Seabrook and [LSTP] concrete cores. Accelerated expansion tests would have allowed a comparison to determine the extent to which the Seabrook concrete and the [LSTP] concrete differed. As a result of FSEL's failure to use identical concrete in [the LSTP], and its failure to conduct accelerated expansion tests, it is impossible to predict with any confidence the maximum expansion at Seabrook.

or structures, and that can lead to damage and ultimately to the release of radioactive material, especially the fission products and actinides within the reactor fuel." *Id.* at 30.

⁹¹⁸ See generally *id.*; Ex. INT032, Dr. Saouma Rebuttal Testimony.

⁹¹⁹ "Where generally recognized codes and standards are used, they shall be identified and evaluated to determine their applicability, adequacy, and sufficiency and *shall be supplemented or modified as necessary* to assure a quality product in keeping with the required safety function." 10 C.F.R. pt. 50, app. A, § I (emphasis added).

⁹²⁰ See Ex. INT027, Dr. Saouma Pre-Filed Testimony at 34; Ex. INT032, Dr. Saouma Rebuttal Testimony at 4-6.

⁹²¹ NextEra MIL 2 at 10-12.

⁹²² Tr. at 400 (Saouma).

⁹²³ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 32-33.

⁹²⁴ *Id.* at 32.

Essentially, that figure is completely unknown. This is a significant problem that could have been easily avoided.⁹²⁵

Additionally, Dr. Saouma testified that without conducting an accelerated expansion test, NextEra cannot determine “the maximum likely degree of expansion.”⁹²⁶ Dr. Saouma stated that accelerated expansion tests are “[t]he only way” to “assess the potential for future expansion.”⁹²⁷ In addition to accounting for maximum ASR expansion, Dr. Saouma testified that accelerated expansion tests account for the specific kinetic reactions of ASR.⁹²⁸ Dr. Saouma asserted that the FHWA Report supports the assertion that accelerated expansion testing can determine the ultimate expansion of ASR.⁹²⁹ Dr. Saouma also testified that an accelerated expansion test could provide a technical basis for the inspection intervals in the LAR, in addition to determining the ultimate ASR expansion.⁹³⁰

In addition to asserting NextEra should conduct acceleration expansion tests, C-10 advocated developing calibrated numerical models.⁹³¹ Dr. Saouma testified that “periodic damage rating index (DRI) measurements, detailed petrographic studies, and modern computational methods” should be developed since they are “demonstrably effective[.]”⁹³²

Dr. Saouma’s testimony provides a plausible analysis to support his opinion. C-10 has therefore satisfied its burden to present a prima facie case.

3. *NextEra and Staff Responses*

NextEra witnesses testified that NextEra did not need to determine ultimate expansion because its methods focused on determining accurate monitoring frequencies and acceptance limits.⁹³³ NextEra witness Dr. Bolourchi indicated that

⁹²⁵ *Id.* at 10.

⁹²⁶ *Id.* at 11.

⁹²⁷ Tr. at 505-06 (Saouma); Tr. at 772 (Saouma).

⁹²⁸ Ex. INT032, Dr. Saouma Rebuttal Testimony at 13 (“Kinetics can be assessed through accelerated expansion tests as described in EPRI Report 3002013192, Exhibit NER01[7].” (citing Ex. NER017, EPRI Report 3002013192, “Evaluation of Laboratory Tests to Detect Up-to-Date Expansion and Remaining Expansion in Concrete Structures Affected by Alkali-Silica Reaction” (Oct. 15, 2018) at 2-1 [hereinafter Ex. NER017, EPRI Report] (non-public))).

⁹²⁹ Tr. at 325-26 (Saouma); Ex. NER013, FHWA Report at 26-27.

⁹³⁰ Tr. at 385-86 (Saouma).

⁹³¹ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 32-36; Ex. INT032, Dr. Saouma Rebuttal Testimony at 8-10; Tr. at 306, 310-11, 839-40 (Saouma).

⁹³² Ex. INT032, Dr. Saouma Rebuttal Testimony at 9.

⁹³³ Ex. NER001, MPR Testimony at 129, 137-38; *id.* at 152 (“[T]he only need for understanding [the] rate of expansion at Seabrook is validation that the monitoring frequency is sufficient, and NextEra is using in-situ monitoring for this purpose.”).

monitoring structures based on threshold factors does not require the evaluation of the rate of ASR growth because threshold factors are insensitive to the rate of ASR growth.⁹³⁴

NextEra witnesses testified that accelerated expansion tests would not provide any useful data for its chosen monitoring programs. For example, NextEra witness Mr. Sherman testified that using an artificially high temperature and 100% relative humidity would result in data that bear no relationship to the parameters of the SMP.⁹³⁵ Additionally, NextEra witness Mr. Bagley testified that, depending on the method used, accelerated expansion tests are not representative “of the actual condition of the aggregate . . . [and such tests are conducted] outside of [their] structural context.”⁹³⁶ Therefore, Mr. Bagley concluded, the accelerated expansion tests that C-10 suggested would not be “directly relatable back to what’s in the plant.”⁹³⁷ Further, unconfined concrete would be used for an accelerated expansion test, which is not representative of conditions at Seabrook.⁹³⁸ In arguing the non-representative nature of accelerated expansion tests, NextEra witness Dr. Bayrak emphasized that the ultimate expansion data in such a test may be several orders of magnitude greater than actual conditions.⁹³⁹ Dr. Bayrak further stressed that the data “serves absolutely no purpose”⁹⁴⁰ and merely provides a “worst case scenario.”⁹⁴¹

NextEra witness Mr. Carley asserted that an accelerated expansion test is not “easy,” as suggested by Dr. Saouma,⁹⁴² but rather “a very tedious, expensive, [and] difficult process” that could damage the structural rebar.⁹⁴³ For example, an accelerated expansion test would require NextEra to extract 4-inch cores, which is roughly the spacing between the rebar in Seabrook structures.⁹⁴⁴ NextEra has already extracted in-situ cores to determine through-thickness expansion to

⁹³⁴ See Tr. at 937-38 (Bolourchi).

⁹³⁵ Tr. at 377-78 (Sherman) (“One of the accelerated tests that you do exposes it to large amounts of alkali in high temperature. The idea behind that is it says how much might this stone react if everything else is provided to it. We know that’s not the case. There’s not an infinite source of alkali at the plant. All that’s there is what was built into it. The other test says if I keep it at a high temperature and 100[%] relative humidity, water dripping off of it, where it might go somewhere down the road. We don’t have high temperatures and 100[%] humidity. So I have a data point, but I don’t know what it means.”).

⁹³⁶ Tr. at 379-80 (Bagley).

⁹³⁷ Tr. at 380 (Bagley).

⁹³⁸ Tr. at 380-81 (Sherman).

⁹³⁹ Tr. at 781-82 (Bayrak).

⁹⁴⁰ Tr. at 782 (Bayrak).

⁹⁴¹ Tr. at 781 (Bayrak).

⁹⁴² Tr. at 400 (Saouma).

⁹⁴³ Tr. at 381 (Carley).

⁹⁴⁴ *Id.*

date, even though it found the extraction process to be “a time consuming, very difficult process.”⁹⁴⁵ NextEra is obligated, as part of the license condition Corroboration Study⁹⁴⁶ to extract cores at set intervals to ensure the LSTP results remain valid as a model for assessing ASR expansion at Seabrook.⁹⁴⁷

NextEra witnesses further testified that NextEra conducts trending analyses and extrapolates actual data from the plant to determine whether Seabrook structures will remain within the expansion limits, and as a consequence, NextEra does not need to identify ultimate ASR expansion in an artificial setting conducive to ASR expansion.⁹⁴⁸ NextEra witness Mr. Carley testified that NextEra determined through-thickness expansion to date by extracting over 200 in-situ cores and then extrapolating the data to assess long-term expansion limits.⁹⁴⁹

C-10 disputed NextEra’s claim that once cores are removed from the structures, they are no longer representative. Dr. Saouma testified that NextEra tested the 200 extracted cores for compressive strength and elastic modulus, notwithstanding representativeness issues.⁹⁵⁰ Thus, Dr. Saouma stated that NextEra’s position is hypocritical because NextEra conducted other analyses on the extracted cores and deemed the resulting data representative.⁹⁵¹ From this, Dr. Saouma stated that if NextEra used the cores to gather pertinent data for compressive strength and elastic modulus, it can also use the same cores in an accelerated expansion test.⁹⁵²

According to NextEra witness Mr. Carley, however, the process of determining the elastic modulus destroys the cores which renders them unavailable for use in accelerated expansion tests.⁹⁵³ With the original cores destroyed, further core sampling would be required, resulting in additional destructive testing to Seabrook’s structures.⁹⁵⁴

The Staff agreed with NextEra that an accelerated expansion test is not required, arguing that C-10 failed to establish why understanding ultimate ASR expansion is a safety concern.⁹⁵⁵ Staff witnesses also testified that NextEra’s

⁹⁴⁵ *Id.*

⁹⁴⁶ Ex. INT024, Final SE at PDF 67-69; Ex. NER001, MPR Testimony at 61-62.

⁹⁴⁷ Tr. at 381-82 (Carley) (“We have committed to do additional cores for [the] [C]orroboration [S]tudy in the future. But just to take cores for doing an accelerated test, and as you heard, that probably is not going to provide value to the method we have chosen was a route that we have chosen not to take.”).

⁹⁴⁸ Tr. at 380-81 (Sherman); Ex. NER001, MPR Testimony at 129.

⁹⁴⁹ Tr. at 381 (Carley).

⁹⁵⁰ Tr. at 384-85 (Saouma).

⁹⁵¹ *Id.*

⁹⁵² *Id.*

⁹⁵³ Tr. at 382 (Carley).

⁹⁵⁴ Tr. at 381-82 (Carley).

⁹⁵⁵ Ex. NRC001-R, Staff Testimony at 71.

approach “identified reasonable and justifiable structure-specific expansion limits[] which account for potential future expansion[.]”⁹⁵⁶ Staff witnesses stated that “[k]nowing the ultimate expansion is not relevant to the approach chosen by NextEra because the ultimate expansion is irrelevant as long as the structures are monitored and remain below the limits.”⁹⁵⁷

NextEra conducted residual reactivity testing to determine whether Seabrook is prone to future ASR expansion or whether the reaction has been exhausted. In 2012, NextEra performed residual reactivity testing per ASTM C 1260, which is a method intended to test an aggregate source for potential reactivity before new construction.⁹⁵⁸ NextEra obtained the aggregate from cores removed from existing Seabrook structures.⁹⁵⁹ Thereafter, NextEra used the aggregate to:

[F]abricate a mortar bar and submerged [it] in a hot sodium hydroxide solution to accelerate expansion. Per ASTM C 1260, the aggregate is determined to be reactive if an expansion of greater than [1.0 mm/m (0.1%)] is observed. The test results showed an expansion of over [7.0 mm/m (0.7%)] with no sign of plateauing after 103 days, indicating that Seabrook is susceptible to future expansion. Accordingly, NextEra conservatively assume[d] that ASR could continue through the remainder of plant life and [that there is no] maximum bound on potential expansion.⁹⁶⁰

NextEra also calculated that it expects to exceed the through-thickness expansion limit in the most severe area by XXXX.⁹⁶¹ NextEra concluded:

The quantitative results of the [ASTM C 1260] test were not useful because the composition and structural context of the mortar bar [is] vastly different than [that at] the plant. No further residual reactivity testing was performed, because there was (and still is) no further application for the results, given the assumption of unbounded potential ASR progression.⁹⁶²

NextEra witnesses also addressed the question why NextEra did not perform reactivity testing on the LSTP specimens, indicating:

With respect to the LSTP specimens, reactivity testing was never performed be-

⁹⁵⁶ *Id.*

⁹⁵⁷ *Id.* at 71-72.

⁹⁵⁸ Ex. NER001, MPR Testimony at 137-38.

⁹⁵⁹ *Id.*

⁹⁶⁰ *Id.* at 137; *see* Tr. at 1117-18 (Philip) (“[Mortar bars are] small samples without the structural context in place.”).

⁹⁶¹ Ex. NER003, MPR Testimony, Proprietary Appendix at 2 tbl.3 n.3 (non-public).

⁹⁶² Ex. NER001, MPR Testimony at 137.

cause the information from this testing would not have been useful. The concrete mixture design was known, and was intentionally susceptible to ASR, so there was no need to confirm reactivity Even if the maximum possible expansion of the LSTP test specimens were known, it would not have affected interpretation of the results, which related structural performance to the measured expansion (regardless of the potential future expansion).⁹⁶³

Responding to NextEra's argument, Dr. Saouma stated that an accelerated expansion test could provide a technical basis for the inspection intervals in the LAR, in addition to determining the ultimate ASR expansion.⁹⁶⁴ Further, he reiterated that NextEra must evaluate where it is on the sigmoid curve, and an accelerated expansion test is one way to do so.⁹⁶⁵

As discussed above, NextEra witness Mr. Sherman testified that NextEra knows where it is on the sigmoid curve because both the petrography and elastic modulus indicate Seabrook is in the active phase of the curve.⁹⁶⁶ According to Mr. Sherman, Seabrook's location on the sigmoid curve is continually monitored through the expansion monitoring with pins and through visual monitoring.⁹⁶⁷ NextEra witness Mr. Bagley testified that "the petrographic examinations done by SG&H, and then the rate monitoring that has been done over time [by the SMP], provides the best estimate . . . for where the plant is on the [sigmoid] curve."⁹⁶⁸

4. Findings of Fact and Board Analysis

While C-10 recommends an alternative method for evaluating ASR at Seabrook, we conclude that NextEra has shown by a preponderance of the evidence that NextEra's approach to measuring ASR and its structural impact provides reasonable assurance and does not require supplementation by an accelerated expansion test. C-10 has failed to demonstrate that the current method of in-situ monitoring against threshold limits established in the LSTP is insufficient and does not provide reasonable assurance that it will effectively monitor ASR.

a. Ultimate ASR Expansion/Representativeness

NextEra's chosen monitoring approach does not require a determination of

⁹⁶³ *Id.* at 138.

⁹⁶⁴ Tr. at 385-86 (Saouma).

⁹⁶⁵ Tr. at 386, 415 (Saouma).

⁹⁶⁶ Tr. at 389-91 (Sherman).

⁹⁶⁷ Tr. at 391 (Sherman).

⁹⁶⁸ Tr. at 401 (Bagley).

the ultimate ASR expansion. A centerpiece of NextEra's ASR monitoring program is its monitoring intervals, which vary depending on the severity of ASR degradation in a given structure.⁹⁶⁹ As long as the monitoring intervals are sufficient (discussed *supra* Part VIII.B), there is no need to determine ultimate expansion. C-10 failed to proffer any evidence that would establish the need for an artificially high (likely by several orders of magnitude) expansion limit of the concrete. As NextEra witnesses testified, "the only need for understanding [the] rate of expansion at Seabrook is validation that the monitoring frequency is sufficient, and NextEra is using in-situ monitoring for this purpose."⁹⁷⁰

We also emphasize that NextEra determined the expansion potential of Seabrook concrete by using a reactivity test.⁹⁷¹ With the reactivity test, NextEra determined the expansion potential of actual Seabrook concrete to be greater than 7.0 mm/m (0.7%), which means that the expansion may exceed the threshold limits provided in the LAR and monitored in the SMP.⁹⁷² Therefore, NextEra assumes that in-situ monitoring will continue for the licensing term and that the ultimate expansion potential will exceed the threshold limits established by the LSTP.⁹⁷³ NextEra indicated it expects to exceed the through-thickness expansion limit in the most severe areas by XXXX.⁹⁷⁴ Thus, NextEra acknowledged that ASR will expand at Seabrook throughout the life of the plant and has incorporated those assumptions into the monitoring program accordingly.

Furthermore, we note that an accelerated expansion test is a destructive test. Therefore, it must provide significant and useful data to justify its use. We find that an accelerated expansion test would not provide useful data regarding ultimate ASR expansion because NextEra assumes that ASR expansion will continue for the duration of the plant's licensed operation, based on the expansion data from the reactivity test.⁹⁷⁵

Regarding the use of accelerated expansion tests to confirm that LSTP concrete is, or is not, representative of Seabrook, the Board finds that because the concrete mixture design of the LSTP test specimens was made intentionally susceptible to ASR, its reactivity as measured by an accelerated expansion test would be different from the reactivity of the Seabrook concrete by design. As a result of this, the performance of accelerated expansion tests would not provide useful information regarding whether the LSTP concrete is representative of the Seabrook concrete.

⁹⁶⁹ See Ex. INT010, Original LAR at PDF 65-66.

⁹⁷⁰ Ex. NER001, MPR Testimony at 152.

⁹⁷¹ *Id.* at 137-38.

⁹⁷² *Id.* at 137.

⁹⁷³ *Id.*

⁹⁷⁴ Ex. NER003, MPR Testimony, Proprietary Appendix at 2 tbl.3 n.3 (non-public).

⁹⁷⁵ Ex. NER001, MPR Testimony at 137.

b. Monitoring Intervals and Sigmoid Curve

Because NextEra assumes that ASR will expand for the duration of the licensing term,⁹⁷⁶ NextEra will continuously monitor ASR-affected structures, with the most severely affected structures currently monitored every six months.⁹⁷⁷ If the SMP indicates a significant increase in the expansion rate, NextEra will need to increase its monitoring frequency in accordance with the Board's license condition, an approach we have found sufficient to provide reasonable assurance of adequate protection of public health and safety, *supra* Part VIII.B.3. C-10 failed to explain how or why an accelerated expansion test would provide significant or useful data that otherwise could not be obtained by the monitoring program. We note that NextEra has already assumed it is in the active portion of the sigmoid curve⁹⁷⁸ and that it is monitoring both the expansion and the rate of expansion. NextEra is in essence developing the expansion curve using actual plant data rather than a laboratory-based test.

Our review of the relevant record documents supports the conclusion that accelerated expansion tests are not necessary at Seabrook. Both the EPRI Report and the FHWA Report indicate that the best method to determine the rate of expansion for a given Seabrook structure is in-situ monitoring for expansion and deformation performed at selected frequencies.⁹⁷⁹ The FHWA Report states that "[t]he potential for further expansion due to ASR is a critical parameter to consider when selecting the most appropriate remedial action(s) for concrete affected by ASR."⁹⁸⁰ Further, the FHWA Report states that "[c]urrent rates of expansion are best established from periodic or continuous in-situ monitoring of deformations, which can then be extrapolated for estimating the potential for future expansion."⁹⁸¹ However, that report continues, such a method may take two to three years to "yield useful information[.]"⁹⁸²

The EPRI Report echoes the FHWA Report's conclusions that in-situ monitoring is an accurate method to monitor the ASR expansion. Specifically, the EPRI Report states that "[m]onitoring the deformation in the field is considered as the most accurate method for evaluating the current rate of expansion[.]"⁹⁸³

⁹⁷⁶ *Id.* at 137-38.

⁹⁷⁷ See Ex. INT010, Original LAR at PDF 65.

⁹⁷⁸ Tr. at 421-22 (Sherman).

⁹⁷⁹ See Ex. NER013, FHWA Report at 26-27; Ex. NER017, EPRI Report at 2-15 (non-public).

⁹⁸⁰ Ex. NER013, FHWA Report at 26.

⁹⁸¹ *Id.*

⁹⁸² *Id.* at 26-27 ("However, in-situ monitoring will generally take a minimum of 2 and preferably 3 years to yield useful information, i.e., where permanent and cumulative deformation due to ASR could 'reliably' be differentiated from reversible and cyclic movements related to mechanical (loading, traffic, operation conditions, etc.), thermal and climatic (daily and seasonal) variations.").

⁹⁸³ Ex. NER017, EPRI Report at 2-15 (citations omitted) (non-public).

Consistent with the FHWA Report, the EPRI Report justifies this conclusion by demonstrating that “deformation monitoring should be performed for at least [two] to [three] years to account for temperature and moisture variations in the field.”⁹⁸⁴ In recommending in-situ monitoring, the EPRI Report emphasized several drawbacks of laboratory tests such as accelerated expansion tests.⁹⁸⁵

According to the EPRI Report, accelerated expansion tests, by themselves, are not reliable indicators of future ASR expansion because there are several significant variables. For instance, “expansion tests on cores can provide only an indication on the future potential of ASR reaction (free residual expansion).”⁹⁸⁶ Instead of using accelerated expansion tests, the EPRI Report suggests a combination of testing and monitoring is necessary “to predict the actual behavior of ASR-affected structures[.]”⁹⁸⁷

Additionally, the IStructE document emphasizes that structural behavior, rather than the specific kinetic reaction of ASR, is the primary concern in measuring ASR.⁹⁸⁸ The IStructE document reaches this conclusion by emphasizing that there is not a uniform expansion rate within a given structure.⁹⁸⁹ Stressing instead that there may be “substantial differences” because “[s]ome pours [within one structure or wall] may show no apparent damage while others may be severely damaged by cracking.”⁹⁹⁰ As a result, the IStructE document concluded measuring the “structural [behavior] on site provides the best indication of rates of deterioration and when the rate of ASR damage is slowing.”⁹⁹¹

⁹⁸⁴ *Id.* (non-public).

⁹⁸⁵ *Id.* at 2-17 (“There may be difficulties in measuring the total ASR expansion in cores because the duration of these tests is not long enough to allow full consumption of reactive silica within the aggregates[.] Alkali leaching during the test underestimates the ASR expansion potential[.] The stress condition in field structures is different from that of cores[.] The residual expansion measured from cores does not account for the effects of reinforcement and loading in field structures. The level of reinforcement and the direction of the reinforcement are key parameters governing the extent of expansion observed in the field and cannot be accounted for in laboratory testing[.] Inconsistent humidity condition during long-term testing (for example, 1-2 years) can cause variation in ASR expansion[.] Several cores must be taken from different locations and along different directions within structures to represent different conditions of ASR. This requires careful investigation to select cores from the most and least affected zones.”) (non-public).

⁹⁸⁶ *Id.* (non-public).

⁹⁸⁷ *Id.* (“A combination of laboratory testing, structural monitoring (for instance, deformation, temperature, humidity, and confined stresses), and information from structures (for example, reinforcement detailing and boundary conditions) should be used to develop calibrated numerical models to predict the actual behavior of ASR-affected structures[.]” (citations omitted)) (non-public).

⁹⁸⁸ Ex. NER012, IStructE Structural Effects of [ASR] at 31 (non-public).

⁹⁸⁹ *Id.* (non-public).

⁹⁹⁰ *Id.* (non-public).

⁹⁹¹ *Id.* (non-public).

The Board also agrees with NextEra that, because unconfined concrete would be used for an accelerated expansion test, such tests would not be representative of conditions at Seabrook. Dr. Saouma stated in response that extracted cores were used for other tests.⁹⁹² This argument is unpersuasive. The fact that NextEra used extracted cores for other purposes does not make them representative for the purposes of accelerated expansion tests. Because the in-situ cores, after being subjected to accelerated expansion, would be unrepresentative of Seabrook concrete, we fail to see how that data could influence the monitoring intervals, which are based on actual data from the plant.

c. Threshold Expansion/Acceptance Limits

We find no need to conduct an accelerated expansion test to indicate whether Seabrook structures will exceed the acceptance limits. NextEra conducted a reactivity test and concluded ASR would expand for the duration of the licensing term.⁹⁹³ Also, NextEra calculated that the through-thickness expansion limit would be reached in XXXX, assuming linear ASR expansion.⁹⁹⁴ Problems with non-representativeness aside, there is no need to perform a test to determine whether the acceptance limits will be exceeded when NextEra already assumes that the expansion limits likely will be reached during the licensing term. In effect, an accelerated expansion test cannot tell NextEra anything it does not already know with regard to the acceptance limits.

The primary goal of the Seabrook in-situ monitoring program in the SMP is to assure that the acceptance limits established under the LSTP, as documented in the LAR and implemented in the SMP, are not exceeded.⁹⁹⁵ A preponderance of the evidence indicates that the use of periodic in-situ expansion monitoring, conducted under the SMP, is the best method to measure the current rates of expansion and, by extrapolation, the potential for future expansion according to the FHWA Report, which Dr. Saouma references in his hearing testimony.⁹⁹⁶ The in-situ monitoring program at Seabrook will be in place for the duration of

⁹⁹² Tr. at 384-85 (Saouma).

⁹⁹³ Ex. NER001, MPR Testimony at 137-38.

⁹⁹⁴ Ex. NER003, MPR Testimony, Proprietary Appendix at 2 tbl.3 n.3 (non-public).

⁹⁹⁵ See Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 1-1.1 (non-public); Ex. NER001, MPR Testimony at 128 (“[T]he purpose of the SMP — and any aging management program — is to monitor the aging mechanism so that the plant can take action to address the condition before it continues outside of the licensing basis. The SMP at Seabrook fulfills this function by using a classical aging management approach to monitor parameters to specified acceptance criteria and take action prior to exceeding those criteria.”).

⁹⁹⁶ Ex. NER013, FHWA Report at 26.

the licensing term, which is significantly longer than the minimum two or three years needed for such monitoring to account for natural cyclic variations.⁹⁹⁷

While accelerated expansion testing might be a useful addition to the development of the calibrated numerical models discussed above,⁹⁹⁸ it is not required, and there is no evidence indicating it would be helpful to support the in-situ monitoring approach selected by NextEra and described in the LAR.⁹⁹⁹ Dr. Saouma testified that his other suggested methods (“periodic [DRI] measurements, detailed petrographic studies, and modern computational methods”) are “demonstrably effective.”¹⁰⁰⁰ But C-10 proffered no other evidence demonstrating that NextEra’s in-situ monitoring is “demonstrably ineffective.”¹⁰⁰¹ Although Dr. Saouma testified that his suggestions are not just “a different way to do the job,”¹⁰⁰² the Board finds by a preponderance of the evidence that the best method of determining the current rate of expansion is in-situ monitoring of the structures. We therefore agree with the Staff and NextEra that there is no need to perform accelerated expansion tests in support of the SMP.

D. Corroboration Study

The Corroboration Study forms the technical basis for the SMP.¹⁰⁰³ Simply described, when an extensometer is inserted into the Seabrook concrete according to the SMP guidelines to track future through-thickness expansion, NextEra needs to know the amount of expansion that has occurred from the time that the plant was constructed until the time that the extensometer is inserted.¹⁰⁰⁴ NextEra implemented a methodology for calculating initial expansion by using an empirical correlation developed during the LSTP.¹⁰⁰⁵ The methodology determines through-thickness expansion from the normalized elastic modulus.¹⁰⁰⁶ The latter is the ratio of the measured elastic modulus when the extensometer is installed to the elastic modulus twenty-eight days from original casting of the concrete during Seabrook’s construction.¹⁰⁰⁷ Though the elastic modulus was not measured during plant construction, compressive strength was measured,

⁹⁹⁷ *Id.* at 26-27.

⁹⁹⁸ *See supra* notes 931-932 and accompanying text.

⁹⁹⁹ *See* Ex. NER001, MPR Testimony at 137-38; Ex. NRC001-R, Staff Testimony at 71-72.

¹⁰⁰⁰ Ex. INT032, Dr. Saouma Rebuttal Testimony at 9.

¹⁰⁰¹ *Id.*

¹⁰⁰² *Id.*

¹⁰⁰³ Tr. at 1012 (Buford).

¹⁰⁰⁴ Ex. NER001, MPR Testimony at 121.

¹⁰⁰⁵ *Id.* at 117-19.

¹⁰⁰⁶ *Id.*

¹⁰⁰⁷ Ex. INT018-R, MPR-4153, Rev. 3 at 3-4.

and NextEra stated that the elastic modulus can be calculated from the compressive strength using the ACI 318-71 empirical formula.¹⁰⁰⁸ Although NextEra considered another approach for obtaining the original elastic modulus by extracting and measuring cores at representative ASR-free Seabrook locations,¹⁰⁰⁹ it decided instead to use the compressive strength methodology.¹⁰¹⁰

Dr. Saouma challenged the Corroboration Study that NextEra is required to conduct to ensure that the through-thickness expansion of Seabrook's concrete can be derived from a measurement of the concrete's elastic modulus in accordance with a correlation equation just as was done during the LSTP.¹⁰¹¹ Specifically, Dr. Saouma testified that the identified problems in the Corroboration Study are too great for it to be reliable.¹⁰¹²

NextEra witnesses testified that the approach it adopted for the Corroboration Study is supported by the literature, which states that the elastic modulus decreases with the progression of ASR, and researchers have investigated this phenomenon quantitatively.¹⁰¹³ In fact, NextEra quoted the EPRI Report as concluding "that the modulus of elasticity is the best indicator for ASR progress."¹⁰¹⁴ NextEra decided to use the LSTP data to produce its own correlation rather than rely on the literature in order to improve representativeness by utilizing specimens that "ha[d] a reinforcement configuration . . . comparable to structures at Seabrook."¹⁰¹⁵ Finally, NextEra asserted that it applied a reduction factor of XX to the normalized elastic modulus input,¹⁰¹⁶ which increases the calculated effect of ASR degradation, causing the estimated through-thickness expansion to be higher than it would be if the reduction factor were not applied. According to NextEra witnesses, this approach rendered the revised correlation more conservative, since it reduces the margin to the acceptance criteria derived from the

¹⁰⁰⁸ *Id.* § 3.3.1; Ex. INT020, MPR-4153, Rev. 3 § 3.3.1 (non-public); Ex. NRC049, ACI 318-71 § 8.3 (non-public).

¹⁰⁰⁹ Ex. INT018-R, MPR-4153, Rev. 3 at iv, § 4; Ex. INT020, MPR-4153, Rev. 3 at iv, § 4 (non-public).

¹⁰¹⁰ Tr. at 751 (Bagley).

¹⁰¹¹ Tr. at 514-15, 771 (Saouma); Ex. INT028, Dr. Saouma Rebuttal Testimony at 36-41 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 36-41; Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1-4.

¹⁰¹² Ex. INT028, Dr. Saouma Rebuttal Testimony at 36-41 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 36-41; Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1-4.

¹⁰¹³ Ex. NER001, MPR Testimony at 118-19.

¹⁰¹⁴ Ex. NER017, EPRI Report at 4-1, 4-2 fig.4-1 (non-public).

¹⁰¹⁵ Ex. NER001, MPR Testimony at 118-19.

¹⁰¹⁶ Ex. INT018-R, MPR-4153, Rev. 3 § 4.2.2; Ex. INT020, MPR-4153, Rev. 3 § 4.2.2 (non-public).

LSTP.¹⁰¹⁷ Thus, for the purpose of determining total through-thickness expansion at any future date after extensometer insertion, NextEra will use the sum of the calculated expansion from the time of construction until extensometer insertion using the revised modulus correlation and the future expansion as measured by the extensometer.¹⁰¹⁸

NextEra witnesses provided the following description of the Corroboration Study:

The [C]orroboration [S]tudy will occur several years after installation of the extensometers to allow time for through-thickness expansion to occur. Fundamentally, the approach for the [C]orroboration [S]tudy includes four steps: (1) estimate pre-instrument expansion using the correlation when the extensometer is installed to establish a point of reference, (2) monitor through-thickness expansion using the extensometer as specified in the SMP, (3) after several years of monitoring, obtain another core from the same general vicinity and test for elastic modulus to re-determine through-thickness expansion, (4) compare the change in expansion from the original point of reference using the new elastic modulus data and the extensometer data. Successful corroboration would show comparable results using the two methods. At the time of the study, NextEra will obtain new cores from the vicinity of 20% of the extensometers.¹⁰¹⁹

The Staff agreed with NextEra's approach and imposed a license condition that requires the study to cover at least 20% of extensometer locations on ASR-affected structures.¹⁰²⁰ NextEra must complete the initial study no later than 2025 and a complete follow-up study 10 years thereafter.¹⁰²¹ According to the Staff:

[I]f there is [an] indication that the LSTP results do not apply to Seabrook structures, then NextEra would be required to conduct prompt operability determinations to determine whether the structures remain operable or, if they do not, shut down the facility, as dictated by the facility's technical specifications; these activities would be subject to NRC oversight.¹⁰²²

Because the Corroboration Study forms part of a license condition for the

¹⁰¹⁷ Ex. NER001, MPR Testimony at 120; Ex. NER003, MPR Testimony, Proprietary Appendix at 9 fig.10 (non-public).

¹⁰¹⁸ Ex. NER001, MPR Testimony at 120.

¹⁰¹⁹ *Id.* at 121; *see* Ex. INT019, MPR-4273, app. C; Ex. INT021, MPR-4273 app. C (non-public).

¹⁰²⁰ Ex. INT024, Final SE at PDF 68-69; Ex. NRC001-R, Staff Testimony at 43.

¹⁰²¹ Ex. INT024, Final SE at PDF 68-69.

¹⁰²² NRC Staff's Proposed Findings of Fact and Conclusions of Law at 25; *see* Tr. at 719-20 (Buford, Lehman), 739-42 (Buford), 1012 (Buford).

LAR,¹⁰²³ it cannot be changed without NRC approval.¹⁰²⁴ Moreover, it includes a specific provision to notify the NRC each time a corroboration action is completed.¹⁰²⁵

1. C-10's Prima Facie Case

Dr. Saouma testified that the change in elastic modulus cannot reliably determine what has been the past through-thickness expansion in Seabrook's concrete.¹⁰²⁶ Moreover, he stated that each step of the Corroboration Study carries "substantial uncertainties[.]"¹⁰²⁷ As an example, he claimed that there are numerous uncertainties associated with NextEra's use of the compressive strength measurement from Seabrook's construction to estimate elastic modulus 28 days from casting.¹⁰²⁸

Dr. Saouma testified that a major problem with the procedure by which NextEra calculated the normalized elastic modulus from the 28-day compressive strength is "that concrete compressive strength increases over time (due to the hydration of the cement), with most of the increase occurring [in] the first few years."¹⁰²⁹ Dr. Saouma stated that failure to account for this increase would cause NextEra to underestimate the through-thickness expansion.¹⁰³⁰ To support this claim, C-10 introduced a textbook source that showed the compressive strength of a specified concrete sample is 20% higher after five years than the reference value measured at 28 days.¹⁰³¹

Dr. Saouma further testified that another source of uncertainty in the NextEra study is the correlation between the normalized elastic modulus and through-thickness expansion, which "is based on few test data at the [LSTP] and . . . have an inherent variability."¹⁰³²

¹⁰²³ Ex. NRC001-R, Staff Testimony at 43; Ex. INT024, Final SE at PDF 68-69; *see* Ex. NER001, MPR Testimony at 61-62.

¹⁰²⁴ Ex. NRC001-R, Staff Testimony at 29.

¹⁰²⁵ Ex. INT024, Final SE at PDF 68; Ex. NER001, MPR Testimony at 62-63.

¹⁰²⁶ Tr. at 771 (Saouma).

¹⁰²⁷ Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1-4; *see* Ex. INT028, Dr. Saouma Rebuttal Testimony at 36-41 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 36-41.

¹⁰²⁸ Tr. at 514-15 (Saouma).

¹⁰²⁹ Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1.

¹⁰³⁰ *Id.*

¹⁰³¹ *Id.* at 1, 2 fig.1; Ex. NRC073, David Darwin, Charles W. Dolan, and Arthur H. Nilson, "Design of Concrete Structures" (McGraw-Hill, Inc., 15th Ed. 2016) at 38 fig.2.5 [hereinafter Ex. NRC073, Darwin et al.] (non-public); Tr. at 747-50 (Saouma).

¹⁰³² Ex. INT028, Dr. Saouma Rebuttal Testimony at 36-41 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 36-41; Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1-4.

Dr. Saouma also disagreed with NextEra's use of the B Electrical Tunnel as the appropriate reference location for comparing Seabrook's concrete to the specimens used in the LSTP. C-10 noted there is a substantial difference between the measured 28-day compressive strengths at that tunnel versus the CEB and that this renders the LSTP tests not representative of the most critical part of the Seabrook reactor.¹⁰³³

Finally, Dr. Saouma stated that since there are so many uncertainties in the Corroboration Study, the figures containing the data and curves should contain "error bars[.]"¹⁰³⁴

2. *NextEra and Staff Responses*

NextEra witnesses asserted that it compared data from the literature to data from the LSTP and confirmed that the trends are comparable and provide reasonable assurance that the modulus correlation can be applied at Seabrook.¹⁰³⁵

NextEra witnesses not only agreed with C-10 that the compressive strength increases with time just after the concrete is cast, but also agreed that it is a well-known phenomenon discussed in many textbooks.¹⁰³⁶ Additionally, NextEra witnesses agreed with Dr. Saouma that the increase is rapid early on, but that later it "decreases rapidly to the point where it effectively plateaus [with] no difference in [aging] at that point."¹⁰³⁷ NextEra witness Dr. Bayrak conceded that compressive strength increases approximately 15-20% after the first twenty-eight days.¹⁰³⁸ However, Dr. Bayrak testified that over time, in terms of actual behavior, not calculations, the elastic "modulus matures much earlier than [does] compressive strength[.]"¹⁰³⁹ Dr. Bayrak stated that since NextEra did not measure the elastic modulus at the time of construction, it had to use the compressive strength measurements available at that time.¹⁰⁴⁰

NextEra witnesses stated that the evidence clearly establishes that NextEra adequately addressed any uncertainty in the elastic modulus correlation.¹⁰⁴¹ As

¹⁰³³ Tr. at 1144-46 (Saouma).

¹⁰³⁴ Tr. at 1146 (Saouma).

¹⁰³⁵ Ex. NER001, MPR Testimony at 118-20.

¹⁰³⁶ Ex. NER076, Testimony of NextEra Witnesses John Simons, Christopher Bagley, Oguzhan Bayrak, and Edward Carley in Response to Exhibit INT030 at 6 [hereinafter Ex. NER076, NextEra Response to Ex. INT030-R] (non-public).

¹⁰³⁷ Tr. at 749-50 (Bagley); Ex. NER076, NextEra Response to Ex. INT030-R at 6-7 (non-public).

¹⁰³⁸ Tr. at 752-53 (Bayrak).

¹⁰³⁹ Tr. at 753 (Bayrak).

¹⁰⁴⁰ Tr. at 756 (Bagley).

¹⁰⁴¹ Ex. NER076, NextEra Response to Ex. INT030-R at 4 (non-public); Ex. INT018-R, MPR-4153, Rev. 3 § 4.2; Ex. INT020, MPR-4153, Rev. 3 § 4.2 (non-public).

for C-10's assertion that the compressive strength initially increases due to the hydration of the cement, with most of the increase occurring the first few years, NextEra witnesses stated that the modulus correlation inherently accounts for that effect.¹⁰⁴² NextEra witnesses further stated that since the test data it used to determine the correlation were from concrete that had cured to the point that the increase in compressive strength either had already been realized for the great majority of the data or, in the case of three data sets, was insignificantly different from being fully realized.¹⁰⁴³ Thus, NextEra maintained that no adjustments to the modulus correlation were necessary "to account for differences in hydration of the cement as a function of time."¹⁰⁴⁴

NextEra witness Mr. Carley testified that NextEra currently has forty-eight extensometers installed and the Corroboration Study would pull cores from 20%, i.e. approximately ten of those locations.¹⁰⁴⁵ More specifically, in order to increase the conservatism in the methodology, NextEra plans to examine the data from those forty-eight extensometers and choose the 20% showing the highest level of expansion, which should show the greatest agreement with the correlation curve.¹⁰⁴⁶ Moreover, NextEra will introduce a reduction factor of XX to the normalized elastic modulus to increase the calculated degradation, or through-thickness expansion.¹⁰⁴⁷ In addition, NextEra witness Mr. Bagley stated that NextEra would take a look at all the data points to see what makes the most sense for executing the Corroboration Study.¹⁰⁴⁸

NextEra witness Mr. Carley testified that if the Corroboration Study does not confirm consistency with the LSTP modulus correlation results, it will implement the Corrective Action Program.¹⁰⁴⁹ Although NextEra does not know currently what corrective actions it would take, it would proceed under NRC oversight.¹⁰⁵⁰

The Staff challenged several of Dr. Saouma's assertions regarding the modulus correlation together with the measured elastic modulus to determine the through-thickness expansion at Seabrook. For example, Dr. Saouma faulted a lack of error bars in displaying the results of the modulus correlation and

¹⁰⁴² Ex. NER076, NextEra Response to Ex. INT030-R at 2 (non-public).

¹⁰⁴³ *Id.* at 2, 8 (non-public).

¹⁰⁴⁴ *Id.* at 2 (non-public).

¹⁰⁴⁵ Tr. at 1009 (Carley).

¹⁰⁴⁶ Tr. at 1013-14 (Carley).

¹⁰⁴⁷ Ex. NER076, NextEra Response to Ex. INT030-R at 4-5 (non-public); *see* Ex. INT018-R, MPR-4153, Rev. 3 § 4.2.2; Ex. INT020, MPR-4153, Rev. 3 § 4.2.2 (non-public).

¹⁰⁴⁸ Tr. at 1015 (Bagley).

¹⁰⁴⁹ Ex. INT024, Final SE at PDF 68; Tr. at 1009-10 (Carley).

¹⁰⁵⁰ Tr. at 1010 (Carley, Lehman).

data.¹⁰⁵¹ The Staff disagreed and stated that the correlation is used in the context of the design basis codes, which do not use error bars but incorporate “normal variability” into their equations.¹⁰⁵²

The Staff likewise disputed C-10’s argument that the correlation fails to account for the increase in compressive strength of concrete over time, and thus would underestimate through-thickness expansion. In this regard, Dr. Saouma stated that the compressive strength after five years could be as much as 20% higher than the value measured at 28 days.¹⁰⁵³ According to the Staff’s analysis, even if this were the case at Seabrook, NextEra’s XX reduction factor would bound this uncertainty.¹⁰⁵⁴

3. Findings of Fact and Board Analysis

First, the Board notes that there has been some confusion as to what constitutes the Corroboration Study. According to NextEra, Dr. Saouma’s Supplemental Rebuttal Testimony conflated the modulus correlation and the Corroboration Study, which NextEra stated are two different concepts.¹⁰⁵⁵ NextEra called attention to Dr. Saouma’s alleged misunderstanding and expressly identified the differences between these two concepts. According to NextEra “the modulus correlation is used to estimate the through-thickness expansion at Seabrook before an extensometer is installed[,]”¹⁰⁵⁶ whereas “[t]he [C]orroboration [S]tudy is an approach for obtaining in-plant data to evaluate how expansion at the plant aligns with observed expansion of the LSTP specimens.”¹⁰⁵⁷

Because C-10’s challenge pertains to NextEra’s method of estimating pre-extensometer through-thickness expansion, we interpret it as a challenge to the modulus correlation, not the Corroboration Study.¹⁰⁵⁸ The Board does not agree with NextEra’s assessment that Dr. Saouma misunderstood the difference between the modulus correlation and the Corroboration Study. In fact, Dr. Saouma explicitly stated that “[t]he [C]orroboration [S]tudy is used ‘to evaluate how expansion at the plant aligns with observed expansion of the LSTP specimens.’”¹⁰⁵⁹

¹⁰⁵¹ Tr. at 797 (Saouma).

¹⁰⁵² Ex. NRC090, Staff Testimony in Response to Exhibit INT030 at 4 [hereinafter Ex. NRC090, Staff Testimony in Response to Ex. INT030-R] (“Dr[.] Saouma mischaracterizes normal variability in the data underlying the code equation as a margin of error in the code equation.”).

¹⁰⁵³ Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1.

¹⁰⁵⁴ Ex. NRC090, Staff Testimony in Response to Ex. INT030-R at 5-6.

¹⁰⁵⁵ Ex. NER076, NextEra Response to Ex. INT030-R at 2 (non-public).

¹⁰⁵⁶ *Id.*

¹⁰⁵⁷ Ex. NER001, MPR Testimony at 62.

¹⁰⁵⁸ See Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1-4.

¹⁰⁵⁹ *Id.* at 1 (quoting Ex. NER001, MPR Testimony at 62).

Further, Dr. Saouma also highlighted the following NextEra description of the study: “the [C]orroboration [S]tudy focuses on a correlation developed during the LSTP that is used by NextEra to estimate through-thickness expansion at Seabrook before an extensometer is installed.”¹⁰⁶⁰ Thus, we find that Dr. Saouma fully understood the difference between the modulus correlation and the Corroboration Study, and C-10 focused its comments on the modulus correlation as a critical element of the Corroboration Study.

NextEra’s proposed ASR expansion monitoring program was “a first-of-a-kind” approach, and as a result, the Staff imposed a license condition on the LAR that requires NextEra to confirm the continued applicability of the LSTP to ASR-affected structures at Seabrook.¹⁰⁶¹ To ensure continued applicability, the Corroboration Study will cover at least 20% of the extensometer locations on the worst ASR-affected structures.¹⁰⁶² NextEra will complete the initial study no later than 2025 and a follow-up study ten years thereafter.¹⁰⁶³ If there is any indication that the LSTP results do not continue to apply to Seabrook structures, then NextEra will be required to conduct, under NRC oversight, prompt operability determinations, and if needed, pursue corrective actions, including facility shutdown.¹⁰⁶⁴

Dr. Saouma stated that there are so many uncertainties involved in the modulus correlation as implemented that it puts the entire Corroboration Study in jeopardy.¹⁰⁶⁵ One of C-10’s biggest challenges concerns what it perceived to be NextEra’s failure to take into account early cement hydration, which causes the compressive strength to increase just after casting and continue for some time afterward.¹⁰⁶⁶ If true, this could invalidate NextEra’s approach. However, NextEra witnesses testified that NextEra properly accounted for this effect in its analysis.¹⁰⁶⁷ Also, both Staff and NextEra witnesses testified that the XX normalized elastic modulus reduction factor allows sufficient conservatism in the analysis to account for this effect.¹⁰⁶⁸

¹⁰⁶⁰ Ex. INT032, Dr. Saouma Rebuttal Testimony at 36 (quoting Ex. NER001, MPR Testimony at 62).

¹⁰⁶¹ Ex. INT024, Final SE at PDF 40, 67-69; Ex. NER001, MPR Testimony at 61-62.

¹⁰⁶² See Tr. at 1009, 1013-14 (Carley).

¹⁰⁶³ Ex. INT024, Final SE at PDF 68-69.

¹⁰⁶⁴ *Id.* at PDF 68; Tr. at 719-20 (Buford, Lehman), 739-42 (Buford, Simons), 1012-13 (Buford, Bagley).

¹⁰⁶⁵ Ex. INT028, Dr. Saouma Rebuttal Testimony at 36-41 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 36-41; Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1-4.

¹⁰⁶⁶ Ex. INT030-R, Dr. Saouma Supp. Rebuttal Testimony at 1.

¹⁰⁶⁷ Ex. NER076, NextEra Response to Ex. INT030-R at 2 (non-public).

¹⁰⁶⁸ Ex. NER001, MPR Testimony at 120; Ex. NER003, MPR Testimony, Proprietary Appendix at 9 fig.10 (non-public); Ex. INT018-R, MPR-4153, Rev. 3 § 4.2.2; Ex. INT020, MPR-4153, Rev. 3 § 4.2.2 (non-public); Ex. NRC090, Staff Testimony in Response to Ex. INT030-R at 5-6.

After careful consideration of the parties' arguments, the Board finds C-10's arguments unpersuasive. The Corroboration Study is a critical part of the LAR, because it allows NextEra periodically to ascertain whether the results of the LSTP remain relevant for the continued monitoring of Seabrook seismic Category I structures.¹⁰⁶⁹ Therefore, the Board agrees with NextEra and the Staff, and based upon a preponderance of the evidence, it finds that NextEra's approach to the Corroboration Study, including the modulus correlation, provides reasonable assurance of adequate protection.

E. Concrete Delamination and Localized Excursions Outside the Linear Elastic Regime

Delamination occurs when laminate or solid structures split or separate.¹⁰⁷⁰ This gradual separation creates internal cracks in the structure, or in Seabrook's case, the concrete.¹⁰⁷¹ Both cracks that are hidden below the surface and cracks that manifest on the surface could indicate hazardous delamination.¹⁰⁷²

During the process of delamination, microcracks become macrocracks that tend to run parallel to the direction of the restraint.¹⁰⁷³ Microcracks reduce the mechanical and material properties of ASR-affected concrete (compressive strength, elastic modulus, tensile strength, shear strength, and flexural strength) and may reduce its structural capacity.¹⁰⁷⁴ Delamination takes the form of mid-plane cracks.¹⁰⁷⁵ Generally, ASR expansion occurs in three orthogonal directions.¹⁰⁷⁶ When there is a confinement of the concrete in two orthogonal directions, the ASR expansion will plateau in those directions and then reorient along the unconfined direction.¹⁰⁷⁷ This process instigates the delamination.

If delamination poses a problem for the operation of Seabrook, then the problem could be exacerbated if Seabrook's operational parameters experience

¹⁰⁶⁹ Ex. INT024, Final SE at PDF 67-69.

¹⁰⁷⁰ See Ex. INT027, Dr. Saouma Pre-Filed Testimony at 17 fig.10.

¹⁰⁷¹ Tr. at 556-57 (Saouma).

¹⁰⁷² Tr. at 1141 (Saouma).

¹⁰⁷³ Ex. NER012, IStructE Structural Effects of [ASR] at 13 (non-public); Tr. at 770, 890-91 (Saouma).

¹⁰⁷⁴ Ex. NRC001-R, Staff Testimony at 7; see Tr. at 573-74 (Saouma).

¹⁰⁷⁵ Tr. at 770 (Saouma).

¹⁰⁷⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 6 ("If unimpeded, ASR expansion is volumetric and isotropic (i.e., the same amount of expansion occurs in three directions or 'planes')."); see Ex. NER001, MPR Testimony at 121; Ex. NER004, SGH Testimony at 66.

¹⁰⁷⁷ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 6.

localized excursions outside the linear elastic regime,¹⁰⁷⁸ which is one of Dr. Saouma's concerns.¹⁰⁷⁹ According to the ASME and ACI 318-71 design codes, the responses to stresses on the structural components at Seabrook are generally assumed to be elastic.¹⁰⁸⁰ However, during their testimony both NextEra and the Staff stated that this may not always be the case for localized regions of Seabrook.¹⁰⁸¹ Therefore, excursions of Seabrook outside the linear elastic regime deserve careful attention.

1. Motion in Limine

NextEra moved to exclude C-10's testimony concerning the longitudinal crack exhibited in the LSTP. Specifically, NextEra moved to exclude Dr. Saouma's pre-filed testimony section C.2.3.2 and Dr. Saouma's rebuttal testimony sections D7.1 and D7.2 as these "challenges relate[] to the execution of the LSTP that could have been, but were not, raised at the outset of this proceeding."¹⁰⁸² C-10 opposed the motion.¹⁰⁸³ We find that Dr. Saouma's arguments regarding the longitudinal crack in the LSTP are "fairly encompassed by the description of" the admissible contentions as he questions the representativeness of the LSTP.¹⁰⁸⁴ In this respect, NextEra's Motion in Limine is denied.

Dr. Saouma initially noted that the longitudinal crack "jeopardizes the representativeness of the ensuing test."¹⁰⁸⁵ Dr. Saouma likened the longitudinal crack to a delamination crack and "[t]herefore, the specimen that was tested cannot be considered representative as it was already damaged, and ensuing results would

¹⁰⁷⁸ Linear elastic regime, or linear elastic behavior, refers to conditions under which a structure returns to its original configuration when loads are removed. See Ex. NER004, SGH Testimony at 52.

¹⁰⁷⁹ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 7, 32; Ex. INT032, Dr. Saouma Rebuttal Testimony at 43; Tr. at 869-70, 1056 (Saouma).

¹⁰⁸⁰ Tr. at 303 (Bell), 869 (Thomas); Ex. NER001, MPR Testimony at 133-34; Ex. NER004, SGH Testimony at 52-56; Ex. INT024, Final SE at PDF 57.

¹⁰⁸¹ Tr. at 728-29 (Bolourchi), 868-69 (Bell), 869 (Thomas), 1085 (Thomas), 1091-93 (Thomas); Tr. at 864-65 (Bell) ("With respect to the ACI [318-71] code, the requirements are a little bit different. You are allowed some amount of plasticity in areas of high stress . . . So again, the codes of record limit how much plasticity there can be in the ACI code. The ASME code allows none.").

¹⁰⁸² NextEra MIL 2 at 17-18 (emphasis omitted). NextEra also moved to exclude Dr. Saouma's pre-filed testimony section C.2.3.1 (Load Displacement), however he withdrew that argument during the hearing. *Id.*; Tr. at 314 (Saouma); Ex. INT001-R, Dr. Saouma Pre-Filed Testimony § C.2.3.1 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony § C.2.3.1.

¹⁰⁸³ C-10 Opp. to MIL 2 at 20.

¹⁰⁸⁴ *Pilgrim*, CLI-10-11, 71 NRC at 310.

¹⁰⁸⁵ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 16 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 16.

be unreliable.”¹⁰⁸⁶ However, in Dr. Saouma’s rebuttal testimony, he stated that the alleged delamination crack is in fact representative of Seabrook.¹⁰⁸⁷ Indeed, Dr. Saouma testified that the longitudinal crack “may have impacted the validity of the shear tests[,]” and, despite the alleged unreliability of the shear tests, “such a [delamination] crack . . . may form inside the walls of Seabrook.”¹⁰⁸⁸ Further, Dr. Saouma stated that there is the “perfect storm” of variables at Seabrook for delamination to occur.¹⁰⁸⁹

Without addressing the seemingly contradictory arguments in Dr. Saouma’s pre-filed and rebuttal testimonies, we decline to exclude such testimony as it is “envelope[d]” within the bases of the reformulated contention and directly related to the representativeness of the LSTP.¹⁰⁹⁰ As noted, but not repeated here,¹⁰⁹¹ we decline to apply NextEra’s narrow approach to defining the bases of the reformulated contention. Here, there is a plain connection between the presence of the longitudinal crack and representativeness. If, in fact, the longitudinal crack affected the results of the LSTP, the Board should consider such testimony. If the longitudinal crack rendered the LSTP data “unreliable” that would undoubtedly implicate representativeness.

In addition, the presence of the longitudinal crack is closely related to the issue raised by admitted Contention C, one of the bases of the reformulated contention. In Contention C, C-10 maintained that “[t]horough petrographic analysis, including core sample testing of Seabrook’s in-situ concrete, must be integral to NextEra’s assessment of the advance of ASR.”¹⁰⁹² C-10 argued in support of Contention C that petrographic analysis was needed to detect microcracking and that “[u]ntil thorough petrographic analysis is performed on Seabrook’s concrete structures, NextEra has no real basis by which it can reassess . . . the NRC[] that Seabrook’s ASR progression is truly understood.”¹⁰⁹³ As explained below, Dr. Saouma testified that NextEra should perform petrographic analysis of concrete cores from Seabrook structures to detect microcracks, which eventually coalesce into larger cracks that may lead to delamination. That testimony falls within the scope of Contention C. Dr. Saouma’s pre-filed and rebuttal

¹⁰⁸⁶ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 16 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 16.

¹⁰⁸⁷ Ex. INT028, Dr. Saouma Rebuttal Testimony at 26-33 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 26-33.

¹⁰⁸⁸ Ex. INT028, Dr. Saouma Rebuttal Testimony at 29 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 29.

¹⁰⁸⁹ Ex. INT032, Dr. Saouma Rebuttal Testimony at 30.

¹⁰⁹⁰ See *Catawba*, LBP-04-12, 59 NRC at 391.

¹⁰⁹¹ See *supra* Part VIII.A.2.a.

¹⁰⁹² LBP-17-7, 86 NRC at 107 (quoting C-10 Petition at 6).

¹⁰⁹³ *Id.* at 108 (quoting C-10 Petition at 8).

testimony concerning the longitudinal crack in the LSTP also emphasized the risk of delamination at Seabrook,¹⁰⁹⁴ and therefore further supports Contention C's demand for thorough petrographic analysis of Seabrook concrete cores.

We now address the persuasiveness of C-10's arguments concerning delamination.

2. C-10's *Prima Facie* Case

Dr. Saouma stated that changes in humidity and temperature may produce gradients within the Seabrook walls, and when coupled with Seabrook's rebar being located close to the surface, cracking on the surface of its walls will not be representative of cracking in the interior.¹⁰⁹⁵ Dr. Saouma testified that such "delamination is unlikely to be captured by an extensometer because of the 'patchy' nature of ASR hot-spots or pockets, and because there may not be corresponding surface in-plane cracks that can be detected by the CI method."¹⁰⁹⁶ Since "ASR is not homogeneous within the walls[,] . . . failure to capture [those] internal [micro and macro]crack[s] with extensometers[] does not mean that crack[s] are not present] inside the wall."¹⁰⁹⁷

Dr. Saouma testified that the "development of microcrack[s]" as a result of ASR "cannot be neglected."¹⁰⁹⁸ According to Dr. Saouma, NextEra's failure to detect microcracks without seeing surface damage is because they are indeed micro-sized cracks,¹⁰⁹⁹ where the descriptor "micro" means that they are too small to be observed with the naked eye.¹¹⁰⁰

Dr. Saouma, quoting the literature, testified that the behavior of concrete "at high stresses and [at] fracture is influenced by microcracking and other discontinuit[ies]."¹¹⁰¹ Dr. Saouma further testified that "[t]he moment the concrete stress exceeds 0.45 [compressive strength], and never mind about ASR, there are microcracks, and we enter the non-linear regime. On top of that, even if you are below [0].45 [compressive strength], you have the non-linearity induced by the microcracking due to ASR."¹¹⁰²

¹⁰⁹⁴ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 15-17 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 15-17; Ex. INT028, Dr. Saouma Rebuttal Testimony at 26-33 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 26-33.

¹⁰⁹⁵ Tr. at 836-37 (Saouma); Ex. INT032, Dr. Saouma Rebuttal Testimony at 28, 31.

¹⁰⁹⁶ Ex. INT032, Dr. Saouma Rebuttal Testimony at 31.

¹⁰⁹⁷ *Id.*; see Tr. at 696 (Saouma).

¹⁰⁹⁸ Tr. at 1087 (Saouma); see Ex. NRC075, Deschenes et al. at 12.

¹⁰⁹⁹ Tr. at 1086 (Saouma).

¹¹⁰⁰ Tr. at 1140 (Saouma).

¹¹⁰¹ Tr. at 1102 (Saouma); see Ex. NRC073, Darwin et al. at 45 (non-public).

¹¹⁰² Tr. at 1093-94 (Saouma).

Dr. Saouma suggested the possibility that the so-called “edge effect” cracks in the LSTP were symptomatic of delamination.¹¹⁰³ In the case of delamination, the concrete wants to expand, but it is confined in two directions, with the only free direction being the through-thickness direction.¹¹⁰⁴ The process starts as internal microcracking that coalesces into larger cracks.¹¹⁰⁵ Over time, roughly seven years, complete delamination may occur.¹¹⁰⁶ Dr. Saouma further testified that similar cracking could occur in the concrete at Seabrook, avoiding detection by NextEra under the current monitoring scheme.¹¹⁰⁷

In support, Dr. Saouma provided the example of the delamination crack between two reinforcing mats that occurred at the Crystal River nuclear containment.¹¹⁰⁸ Although not caused by ASR degradation, it points to the existence of delamination as a real-life phenomenon.¹¹⁰⁹

Dr. Saouma testified that petrography is one of the methods that NextEra could utilize to detect the existence of microcracking with its potential for delamination beneath the surface.¹¹¹⁰ As another method, Dr. Saouma stated that one could “[p]ut the specimen under direct tension to find out if the resulting tensile strength[] is below what is perceived to be the tensile strength. That would reflect the microcracking, which is inside.”¹¹¹¹

Dr. Saouma questioned the lack of conservatism caused by inputting the same thermal expansion in all three directions into NextEra’s FEA, thereby ignoring the fact that most of the expansion is in the through-thickness direction. According to Dr. Saouma, NextEra should have used an anisotropic (i.e., not the same in every direction) coefficient of thermal expansion.¹¹¹² Even though NextEra stated that it used a relative value that it measured in each direction

¹¹⁰³ Ex. INT028, Dr. Saouma Rebuttal Testimony at 26-33 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 26-33.

¹¹⁰⁴ Tr. at 1140-41 (Saouma).

¹¹⁰⁵ Tr. at 534 (Saouma), 891 (Saouma), 1108-09 (Saouma); Ex. NER012, IStructE Structural Effects of [ASR] at 13 (non-public); *see* Ex. NRC001-R, Staff Testimony at 12.

¹¹⁰⁶ Tr. at 1140-41 (Saouma).

¹¹⁰⁷ Tr. at 572, 1161-63 (Saouma); *see* Ex. INT028, Dr. Saouma Rebuttal Testimony at 26-33 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 26-33.

¹¹⁰⁸ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 16-17, 17 fig.10 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 16-17, 17 fig.10.

¹¹⁰⁹ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 16 (“Th[e] longitudinal crack] is not unlike the delamination crack (between reinforcement mats) that occurred at Crystal River (though for entirely different cause)[.]”).

¹¹¹⁰ Tr. at 1140 (Saouma).

¹¹¹¹ Tr. at 573 (Saouma).

¹¹¹² Tr. at 351 (Saouma); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 26; Ex. INT032, Dr. Saouma Rebuttal Testimony at 33, 41.

for its inputs,¹¹¹³ Dr. Saouma challenged this assertion. He stated that he could not find anywhere in the exhibits an indication that an anisotropic coefficient of thermal expansion for all three directions was used.¹¹¹⁴

Dr. Saouma further asserted that localized excursions outside the linear elastic regime at Seabrook Unit 1 would be especially dangerous if delamination should occur and stated “[i]t only takes this one localized failure to trigger a massive damage. I’m not talking about a total collapse. One localized point. Going into plastification which is not accounted for, that’s it. [K]aput.”¹¹¹⁵ Dr. Saouma also stated “[w]e need to define failure, because failure does not mean the collapse of the whole structure. We have localized failure. This is what is of concern. It’s the localized failure which is going to lead to an unacceptable leakage.”¹¹¹⁶

To further complicate the issue of the possibility of localized failures, Dr. Saouma testified that the failure mode associated with combined ASR degradation and an earthquake is a shear failure, which is entirely different from steel yielding, which is the traditional flexure failure mode of a section under ultimate load.¹¹¹⁷ The latter gives plenty of warning, while shear failure is brittle with no indication that failure is about to occur.¹¹¹⁸

Considering the above arguments, the Board finds that C-10 has provided sufficient expert testimony to satisfy its burden of going forward.

3. *NextEra and Staff Responses*

According to NextEra witnesses, “[e]xpansion reorientation in the through-thickness direction does not occur until sufficient in-plane expansion has produced chemical prestressing with the reinforcing bars. Therefore, [NextEra concluded that] cracking in the through-thickness direction would not occur without any symptoms of expansion in the in-plane directions.”¹¹¹⁹ This conclusion is based in part on NextEra’s observations in the LSTP. In that program, the specimens contained bi-directional reinforcement in the in-plane directions similar to Seabrook, and during the expansion monitoring, initially, expansion occurred at approximately the same rate in all directions until the in-plane expansion

¹¹¹³ Tr. at 351, 1171-74 (Bolourchi); see Ex. INT015, SGH Evaluation and Design Confirmation of As-Deformed CEB at 93 tbl.13.

¹¹¹⁴ Tr. at 351, 1172 (Saouma).

¹¹¹⁵ Tr. at 869-70 (Saouma). Plastification is a state in which a structure does not return to its original configuration when loads are removed.

¹¹¹⁶ Tr. at 821 (Saouma).

¹¹¹⁷ Tr. at 1058 (Saouma).

¹¹¹⁸ *Id.*

¹¹¹⁹ Ex. NER001, MPR Testimony at 164.

reached a certain level, after which the expansion reoriented to occur primarily in the unreinforced through-thickness direction.¹¹²⁰

For the LSTP, NextEra witnesses testified that “ASR progression in the test specimens was monitored in several different ways and in many different locations.”¹¹²¹ It “performed crack width summation on both sides of [a] test specimen, which provided in-plane expansion at the surface in two separate locations.”¹¹²² NextEra witnesses stated that NextEra monitored through-thickness expansion “by through-specimen embedded rods on both sides of each specimen. While the results showed variability that is within the expected range for concrete, there were no indications of significant non-homogeneity within any test specimen.”¹¹²³ Insofar as LSTP specimens displayed structural cracks on the side faces¹¹²⁴ both NextEra and the Staff attributed this to an edge effect, since the cracking only extended down a couple of inches to about where the rebar started.¹¹²⁵ NextEra witnesses testified that there was no delamination observed in the LSTP.¹¹²⁶

NextEra witnesses testified that it never found a spot at Seabrook where the extracted concrete cores indicated worse cracking at depth within the cores beyond what was indicated at the surface.¹¹²⁷ Moreover, NextEra witnesses testified that in previous studies of 200 cores taken from Seabrook, it found no substantial difference between near-surface cracking and cracking below the level of the reinforcing steel within the core of the structure,¹¹²⁸ as confirmed by both visual and petrographic examinations.¹¹²⁹

NextEra witnesses stated that finite element codes do not provide direct inputs for ASR expansion, but that thermal expansion can be used as a proxy, and therefore ASR strain is simulated by applying an equivalent thermal load to the concrete.¹¹³⁰ Thus, NextEra witness Mr. Bell asserted that FEAs allow for consideration of self-straining forces like ASR with inputs for thermal load with expansion coefficients.¹¹³¹ According to NextEra:

¹¹²⁰ *Id.* at 91 (citing Ex. NER003, MPR Testimony, Proprietary Appendix at 5 fig.4 (non-public)).

¹¹²¹ *Id.* at 94.

¹¹²² *Id.*

¹¹²³ *Id.*

¹¹²⁴ Tr. at 358 (Saouma), 360 (Bayrak).

¹¹²⁵ Tr. at 565-69 (Bayrak), 1138-39 (Buford).

¹¹²⁶ Tr. at 704 (Bayrak), 1139 (Thomas).

¹¹²⁷ Tr. at 397 (Sherman), 556 (Bayrak), 572 (Carley), 700 (Sherman).

¹¹²⁸ Tr. at 455-56 (Sherman), 560 (Buford), 572 (Carley), 705 (Bayrak); 1097-98 (Bayrak).

¹¹²⁹ Tr. at 455-56 (Sherman), 531-32 (Carley); Ex. NER001, MPR Testimony at 93.

¹¹³⁰ Ex. NER004, SGH Testimony at 40, 66.

¹¹³¹ *See* Tr. at 861 (Bell).

The ASR load inputs to these models are: (1) the internal in-plane ASR expansion of reinforced structural members, and (2) the pressure due to ASR expansion of the concrete fill. The internal ASR expansion is determined via the field-measured CI expansion strain; CI is measured in each of the in-plane orthogonal directions. CI represents an equivalent ASR strain.¹¹³²

The EPRI Report states that restrained expansion in one or more directions affects the development of ASR and results in anisotropic damage.¹¹³³

According to Staff witness Ms. Buford, the Staff has not “seen, in either the literature or the [LSTP], any evidence of there being no indications of ASR in the planar directions visible, and then significant ASR occurring through the thickness of the concrete.”¹¹³⁴ Ms. Buford further stated “[w]ith that preponderance of the evidence, we have reasonable assurance that there is not extensive damage happening that is not visible — that wouldn’t be visible by either in-plane cracking or some sort of deformation, which is being monitored and managed in a separate program.”¹¹³⁵

As for localized excursions outside the linear elastic regime at Seabrook Unit 1, both NextEra and Staff witnesses testified that this may indeed occur due to extreme loads, such as seismic loads.¹¹³⁶ Moreover, Staff witness Dr. Thomas stated that such excursions are typical for the roughly 100 reactors operating around the country.¹¹³⁷ The Staff also recognized, however, that ACI 318-71 addresses this issue by using a methodology called equivalent linear analysis.¹¹³⁸ Also, NextEra witness Dr. Bolourchi testified, and the Staff agreed,¹¹³⁹ that as for the containment at Seabrook Unit 1, which is designed according to ASME Section III, Division 2, “[t]he only situation where a containment goes beyond [the] elastic limit is under the accident temperature. The load combination involving the accident pressure by itself is within [the] elastic limit.”¹¹⁴⁰ For certain structures governed by the ACI 318-71 code, except for the CEB, some controlled excursions into the nonlinear plasticity regime in areas of high stress

¹¹³² Ex. NER004, SGH Testimony at 40.

¹¹³³ Ex. NER017, EPRI Report at 4-1 (non-public).

¹¹³⁴ Tr. at 1133 (Buford).

¹¹³⁵ Tr. at 1133-34 (Buford).

¹¹³⁶ Tr. at 729 (Bolourchi), 869 (Thomas), 1085 (Thomas), 1091 (Thomas).

¹¹³⁷ Tr. at 1055-56 (Thomas).

¹¹³⁸ Tr. at 728-29 (Bolourchi), 1055 (Thomas).

¹¹³⁹ Tr. at 869 (Thomas).

¹¹⁴⁰ Tr. at 729 (Bolourchi).

are allowed.¹¹⁴¹ The codes of record limit how much plasticity is permitted in the ACI code, while the ASME code allows none.¹¹⁴²

Staff witness Dr. Thomas stated that localized nonlinear excursions are manageable, because the design code ensures “that if [a Seabrook structure is] pushed to failure you get a ductile failure, which means your steel should yield first rather than concrete failing in compression.”¹¹⁴³

According to NextEra, if any limits in the ASR expansion monitoring program are approached, it then will perform reanalysis or remediation, as necessary.¹¹⁴⁴ Staff witnesses stated that if Seabrook ever approached or exceeded the limits of its codes of record, NextEra would have to perform prompt operability determinations and come into compliance with its licensing basis or seek approval for a license amendment.¹¹⁴⁵ For the prompt operability determination, NextEra would be obligated to demonstrate that the structures were operable, even if degraded.¹¹⁴⁶

4. Findings of Fact and Board Analysis

A contentious issue at the hearing concerned whether cracking of the concrete at Seabrook Unit 1 could be worse internally than it appears on the surface. If more serious internal cracking were the case, an unforeseen delamination of the concrete could result in structural failure. Thus, the concern is that internal microcracking and delamination could be degrading Seabrook’s concrete, unnoticed by the current SMP monitoring protocol.

The FHWA Report states “concrete expansion [due to ASR] can also result in steel yielding, loss of concrete/steel bond, concrete delamination, with potential weakening of the structural integrity of the concrete member or structure.”¹¹⁴⁷ Thus, the FHWA Report acknowledges the potential for ASR-degradation leading to concrete delamination. The report further explains that the structural assessment of an ASR-affected structure must focus on a number of aspects, including concrete delamination.¹¹⁴⁸ Then, “[t]he decision should be made concerning the application of appropriate remedial measures”¹¹⁴⁹ The IStructE document also states that “where there is no [through-thickness] reinforcement

¹¹⁴¹ Tr. at 728-29 (Bolourchi), 864-65 (Bell), 868-69 (Bell).

¹¹⁴² Tr. at 864-65 (Bell).

¹¹⁴³ Tr. at 1057 (Thomas).

¹¹⁴⁴ Tr. at 392 (Collins).

¹¹⁴⁵ See Tr. at 719-20 (Buford, Lehman), 739-42 (Buford), 1012 (Buford).

¹¹⁴⁶ Tr. at 948-49 (Buford).

¹¹⁴⁷ See Ex. NER013, FHWA Report at 35.

¹¹⁴⁸ *Id.*

¹¹⁴⁹ *Id.*

there is now more evidence of delamination . . . developing with ‘Severe’ [ASR].”¹¹⁵⁰

The Board must determine, based upon the preponderance of the evidence, whether NextEra has established its position that the possibility of delamination of the concrete at Seabrook is sufficiently understood and monitored such that the continued operation of Seabrook will not “endanger[] the health and safety of the public.”¹¹⁵¹

The Board notes that C-10 initially argued that the “edge effect” crack observed in LSTP specimens was indicative of delamination and thus rendered the LSTP test specimens unreliable and not representative of conditions at Seabrook.¹¹⁵² Subsequently, C-10 stated that delamination may indeed occur at Seabrook, and thus the LSTP mid-plane crack is representative.¹¹⁵³ The majority of C-10’s arguments concerned the possibility of delamination at Seabrook. Thus, the Board assesses C-10’s testimony according to the latter view.

As part of its SMP monitoring protocol, NextEra removes concrete cores from Seabrook at the locations where it has installed extensometers.¹¹⁵⁴ The cores and corresponding boreholes are then subjected to visual examination to confirm the absence of mid-plane cracks.¹¹⁵⁵ Thus, NextEra conceded that it is concerned about the potential for mid-plane cracking that could possibly lead to delamination.¹¹⁵⁶ However, an LSTP conclusion that guides the SMP is that there is no internal ASR-induced cracking that is worse than cracking that is visible on the surface.¹¹⁵⁷ The Staff concurred with this view and stated “[e]xpansion of any significance will manifest on the surface in the form of cracking, spalling, pop-outs, relative displacements, or deformation long before any [impact to structural performance].”¹¹⁵⁸

NextEra used the CI measurements at Seabrook to implement thermal loads in its FEA.¹¹⁵⁹ Since the measured CI values in the horizontal and vertical

¹¹⁵⁰ See Ex. NER012, IStructE Structural Effects of [ASR] Addendum at 3 of 5 (non-public).

¹¹⁵¹ 10 C.F.R. § 50.57(a)(3).

¹¹⁵² Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 15-17 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 15-17; C-10 Opp. to MIL 2 at 14.

¹¹⁵³ Ex. INT028, Dr. Saouma Rebuttal Testimony at 28-29 (non-public); Ex. INT032, Dr. Saouma Rebuttal Testimony at 28-29; Tr. at 707 (Saouma).

¹¹⁵⁴ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 3-1.5 (non-public).

¹¹⁵⁵ *Id.* (non-public); Ex. NER020, MPR 0326-0062-88, Rev. 2 at 4 (non-public); Tr. at 455-56 (Sherman), 572 (Carley), 704-05 (Bayrak), 710-11 (Carley), 1096-98 (Bayrak).

¹¹⁵⁶ Tr. at 710-11 (Carley), 1097-98 (Bayrak).

¹¹⁵⁷ Tr. at 358 (Bayrak).

¹¹⁵⁸ Ex. NRC001-R, Staff Testimony at 64.

¹¹⁵⁹ Ex. NER004, SGH Testimony at 40-41, 66; see Ex. INT022, SEM at PDF 18-24.

directions were different, anisotropy was implemented for those directions;¹¹⁶⁰ however, NextEra did not implement such a procedure for the through-thickness direction, arguing that their use of shell elements in the FEA rendered it unnecessary.¹¹⁶¹ Given the uncertainties in NextEra's approach and the potential severity — catastrophic failure — of a delamination event, NextEra has not persuaded us that it is properly accounting for the possibility of delamination. Indeed, given the example of the unforeseen delamination and subsequent significant structural damage at the Crystal River nuclear plant,¹¹⁶² albeit for non-ASR reasons, delamination is an issue that cannot be ignored. NextEra and Staff statements that they have not seen delamination in any of the 200 core samples that they have examined fall short when compared to the potential severity of not catching an unseen problem. Indeed, microcracking cannot be seen with the naked eye, but must be observed by another method, such as petrography,¹¹⁶³ and NextEra testified that it did not perform petrographic examinations on all the cores that it extracted from Seabrook.¹¹⁶⁴

In other words, since the SMP is based upon the paradigm that internal cracking is first evidenced by surface cracking as measured by various cracking indices,¹¹⁶⁵ any phenomenon without surface cracking will escape detection. The Board finds that NextEra does not have an adequate screening procedure to detect internal cracking and delamination in Seabrook's concrete.

The further complicating issue of localized excursions of Seabrook structures outside the linear elastic regime is a serious concern. Since the failure mode associated with combined ASR degradation and an earthquake is a brittle, shear failure without ample warning of its occurrence,¹¹⁶⁶ the Board is concerned about the potential for sudden significant, localized damage due to shear failure, given that all parties agreed that there may be localized excursions of Seabrook Unit 1 into the nonlinear structure plastification regime. The Staff is confident that it can handle oversight of NextEra's response to such behavior, given its experience with applying the design code to localized nonlinearities at the other

¹¹⁶⁰ Ex. INT015, SGH Evaluation and Design Confirmation of As-Deformed CEB at 93 tbl.13 (showing the separate "hoop" (i.e., horizontal) and "meridional" (i.e., vertical) CI measurements used in the FEA).

¹¹⁶¹ Ex. NER004, SGH Testimony at 63-64, 66; Tr. at 954, 1174 (Bolourchi).

¹¹⁶² Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 16-17 (non-public); Ex. INT027, Dr. Saouma Pre-Filed Testimony at 16-17.

¹¹⁶³ Tr. at 1140 (Saouma).

¹¹⁶⁴ Tr. at 532 (Carley) ("[I]n some cases, we do . . . petrographic examination. We have done it. We just don't do it on every single core.").

¹¹⁶⁵ Ex. INT010, Original LAR at PDF 32 tbl.4; *see supra* Part VIII.A.2.

¹¹⁶⁶ Tr. at 1058-59 (Saouma).

approximately 100 nuclear reactors in operation across the United States.¹¹⁶⁷ However, those excursions at the other reactors do not involve the newly found phenomenon of reactor concrete degradation due to ASR.

The Board notes the lack of experience in the other reactors around the country in addressing the possibility of ASR-induced localized excursions outside the linear elastic regime. The Board also is not persuaded that NextEra and the Staff have a sound plan in place to detect and address internal microcracking and the potential for an unforeseen delamination. Thus, the Board finds that NextEra has not shown, by a preponderance of the evidence, that there is reasonable assurance that the continued operation of Seabrook Unit 1 will not endanger the health and safety of the public with regard to this particular issue of delamination. However, these shortcomings of the LAR can be corrected. According to a Report of the Swiss Committee on Dams, “[ASR] generated micro-cracks and associated gel precipitations are easily recognizable under the light microscope” during the petrographic analysis of a core. Thus, the Board finds that the petrographic analysis of each extracted core would gauge the degree of internal microcracking (possibly resulting in macrocracking) that could lead to catastrophic delamination.

Therefore, the Board imposes the following license condition:

Each core extracted from Seabrook Unit 1 will be subjected to a petrographic analysis to detect internal microcracking and delamination.

Finally, both C-10 and NextEra agreed that crack index monitoring is an initial monitoring technique to be applied to ASR-degraded concrete.¹¹⁶⁸ As for a more thorough analysis, the Board notes that the above license condition is consistent with the FHWA Report that states “[t]he quantitative assessment of the extent of cracking through the [c]racking [i]ndex, along with the [p]etrographic [e]xamination of the cores taken from the same affected element, [are] used as tools for the early detection of ASR in the concrete.”¹¹⁶⁹

F. C-10’s Remaining Issues Are Outside the Scope of the Proceeding

1. Deformation Monitoring

Seabrook’s Structures Monitoring Program (SMP), as relevant to the LAR, has two distinct parts — Expansion Monitoring, which involves collecting ASR expansion measurements from Seabrook structures for monitoring against specified acceptance criteria based on the LSTP; and Deformation Monitoring, which

¹¹⁶⁷ Tr. at 1055-56 (Thomas).

¹¹⁶⁸ Tr. at 494 (Saouma), 510-11 (Simons).

¹¹⁶⁹ See NER013, FHWA Report at 3 (italics omitted).

requires gathering in-situ data for monitoring against thresholds established in the structural evaluations.¹¹⁷⁰ Deformation Monitoring in the SMP evaluates external loads and monitors their effects on structures using FEA considering ASR expansion and other effects such as creep, shrinkage, and swelling.¹¹⁷¹

NextEra asserted that Dr. Saouma “raise[d] a host of new issues and challenges related to structural evaluations, the [SEM], [FEA], and [structural deformation monitoring . . . [that] could have been, but were not, raised at the outset of this proceeding.”¹¹⁷² Moreover, NextEra asserted that testimony challenging the treatment of ASR expansion as a “design basis load” is new and entirely unrelated to the representativeness of the LSTP.¹¹⁷³ Further, NextEra alleged it “developed the approach of calculating ASR loads and load factors independent of the LSTP.”¹¹⁷⁴ NextEra maintained that none of those issues are sufficiently related to the “representativeness” of the LSTP to be considered within the scope of this proceeding.¹¹⁷⁵

C-10 argued that Dr. Saouma’s arguments are properly before the Board.¹¹⁷⁶ Furthermore, C-10 maintained that both the monitoring program for ASR progression and the monitoring program for structural deformation depend on the LSTP, and that both provide input to and assumptions for the FEA relied on by NextEra.¹¹⁷⁷ Accordingly, C-10 asserted that NextEra incorrectly argued that the Deformation Monitoring Program and FEA have no relevance to the reformulated contention.¹¹⁷⁸

We emphasize that there is a distinction between the capacity and demand calculations used in the FEA, which is a component of Deformation Monitoring. We have held that the capacity side of the FEA (i.e., the assumption that capacity should be calculated using the code equations and the original material properties) is within the scope of this proceeding.¹¹⁷⁹ However, we find

¹¹⁷⁰ Ex. NER001, MPR Testimony at 59, 111-13; *see* Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 4-1.2 (non-public).

¹¹⁷¹ Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 4-1.1 to -1.3 (non-public); Ex. NER004, SGH Testimony at 16 (“Evaluations of structural adequacy are exercises to determine whether the ‘demands’ (i.e., load effects) on a structure or its elements exceed the ‘capacities’ (e.g., strength or stress limits) of the structure or its elements. Methods of determining appropriate demands and capacities are prescribed by specific criteria, standards, and codes. For Seabrook, these methods are described in its [Ex. NRC007,] UFSAR at Section 3.8.”).

¹¹⁷² NextEra MIL 2 at 19.

¹¹⁷³ *Id.* at 18. However, Dr. Saouma withdrew this argument at the hearing. Tr. at 440 (Saouma).

¹¹⁷⁴ NextEra MIL 2 at 18 (citing Ex. NER004, SGH Testimony at 17-18).

¹¹⁷⁵ *Id.* at 18-20.

¹¹⁷⁶ *See generally* C-10 Opp. to MIL 2.

¹¹⁷⁷ *Id.* at 14-19.

¹¹⁷⁸ *Id.* at 15.

¹¹⁷⁹ *See supra* Part VIII.A.5.a.

the demand side analysis of the FEA, concerning the calculation of structural loads in addition to ASR loads, beyond the scope of the proceeding. Therefore, NextEra's Motion in Limine, as it pertains to FEA and Deformation Monitoring, is granted in part, and denied in part.

No quantitative data from the LSTP was used as a direct input into the FEA.¹¹⁸⁰ We therefore conclude that the demand side equations of the FEA are beyond the scope of this proceeding. The ASR loads developed for each ASR-affected structure at Seabrook are estimated based on in-situ data, using CCI and other measurements, from Seabrook structures, unrelated to the LSTP.¹¹⁸¹ SGH developed the approach of calculating ASR loads and load factors independent of the LSTP.¹¹⁸² The use of CCI, as relevant to determining ASR loads in the FEA, is similarly beyond the proceeding's scope.¹¹⁸³ "The only overlap of the structure[al] deformation monitoring program with the LSTP is that its use of code-based structural capacity acceptance criteria is tied to the point at which a structure would meet the expansion limits identified in the LSTP."¹¹⁸⁴ Therefore, we agree with NextEra and hold the demand side equations of the FEA, concerning design basis loads and load factors, are independent of the LSTP and beyond the scope of this proceeding. We grant the Motion in Limine as to section C.2.4.3 of Dr. Saouma's pre-filed testimony, as well as section D.9.2 of Dr. Saouma's rebuttal testimony,¹¹⁸⁵ because they are outside the scope of the reformulated contention and the Board's reformulated contention.¹¹⁸⁶

Insofar as Dr. Saouma presented additional challenges to the FEA, we find they are all beyond the scope as part of the demand side analysis.¹¹⁸⁷ To be clear,

¹¹⁸⁰ Ex. NER004, SGH Testimony at 17-18 ("No specific measurements, calculations, data, or other information from the LSTP are direct inputs into the SEM or structural evaluations; and nothing from the LSTP informed any baseline assumptions on the *demand* side of the equations for the SEM or the structural evaluations."); Ex. NRC001-R, Staff Testimony at 21-23.

¹¹⁸¹ Ex. NRC001-R, Staff Testimony at 21 ("[T]he ASR load developed in this manner with respect to each ASR-affected structure at Seabrook is estimated based on field data from the actual structures and is not derived from the LSTP."); Tr. at 901 (Bolourchi) ("[T]he amount of the expansion you simulate . . . comes from CCI measured in the field[.]").

¹¹⁸² Ex. NER004, SGH Testimony at 17-18.

¹¹⁸³ Our earlier analysis which addressed CCI did so in the context of the LSTP, whereas here, CCI is used to gather in-situ data from the plant to inform the demand side of the FEA, which is beyond the scope of this proceeding. See *supra* Parts VIII.A.1-A.2.

¹¹⁸⁴ Ex. NRC001-R, Staff Testimony at 22.

¹¹⁸⁵ Ex. INT027, Dr. Saouma Pre-Filed Testimony § C.2.4.3; Ex. INT032, Dr. Saouma Rebuttal Testimony § D.9.2.

¹¹⁸⁶ We need not rule on the appropriateness of Ex. INT027 § C.2.4.2, in which C-10 argued that NextEra confuses capacity and demand because Dr. Saouma withdrew the argument during the hearing. See Tr. at 440 (Saouma).

¹¹⁸⁷ Ex. INT001-R, Dr. Saouma Pre-Filed Testimony at 23-29 (non-public); Ex. INT027, Dr. (Continued)

the only aspect of the FEA we are considering is the use of the original code capacities. Since we already discussed the use of the original code capacities, *supra* Part VIII.A.5, there is nothing remaining to resolve regarding this matter.

2. Inadequate Peer Review

NextEra argued C-10's testimony regarding a lack of peer review should be excluded from the record for three reasons.¹¹⁸⁸ First, the argument is "new" and was not mentioned in the Petition. Second, and alternatively, if the argument is not new, it is included within the subject of testimony found inadmissible as part of Contention E.¹¹⁸⁹ Third, peer review is unrelated to representativeness.¹¹⁹⁰ For its part, C-10 argued NextEra's failure to conduct peer review "is relevant to the adequacy of the [LSTP] and the monitoring program[.]"¹¹⁹¹ We agree with NextEra and exclude Dr. Saouma's testimony related to peer review from the record.

All parties offered arguments as to whether NextEra and the Staff obtained adequate peer review of the LAR, and whether peer review is necessary.¹¹⁹² Peer review might have allowed the scientific and engineering community to provide input to improve the LSTP. However, a lack of peer review is not a specific issue with a component of the LSTP, such as specimen size or concrete mineralogy. Peer review, by itself, is not a representativeness issue. It therefore does not fall within the scope of the reformulated contention, Contention D as a basis of that reformulated contention, or any of the other admitted contentions that comprise the bases of the reformulated contention. Because the testimony advocating peer review challenged the processes of establishing the LSTP and drafting the LAR but did not challenge a specific component of the LSTP for

Saouma Pre-Filed Testimony at 23-29; Ex. INT032, Dr. Saouma Rebuttal Testimony at 42; Ex. INT007, Dr. Saouma Review of Selected Documents at 9-19 (non-public); Ex. INT031, Dr. Saouma Review of Selected Documents at 10-19.

¹¹⁸⁸ NextEra MIL 2 at 14-15.

¹¹⁸⁹ *Id.* at 14-15, 14 n.58. "Contention E challenge[d] NextEra's use of proprietary information drawn from the [LSTP] in the LAR, arguing that the use of such information is 'not good science,' 'creates an air of secrecy that prevents review, and undermines . . . trust within the nearby communities[.]'" LBP-17-7, 86 NRC at 131 (quoting C-10 Petition at 11).

¹¹⁹⁰ NextEra MIL 2 at 14-15.

¹¹⁹¹ C-10 Opp. to MIL 2 at 11; *see also* Ex. INT027, Dr. Saouma Pre-Filed Testimony at 36.

¹¹⁹² C-10 Opp. to MIL 2 at 11 ("[N]either NextEra nor the NRC Staff had followed the standard scientific method of obtaining an independent peer review of their work."); NextEra MIL 2 at 14 n.59 ("[I]f C-10 had raised this issue [of peer review] at the outset, it would have been rejected as immaterial (because there is no requirement for 'peer review' in 10 C.F.R. Part 50) and as demonstrably unsupported [throughout the record.]"); *see* NRC Staff's Proposed Findings of Fact and Conclusions of Law at 36-40.

a lack of representativeness, we grant NextEra's Motion in Limine and will not consider the peer review issue further.

The Board also notes that NRC regulations in 10 C.F.R. Part 50 do not require that a license amendment request, or any analysis that supports such request, be submitted for peer review.¹¹⁹³ Thus, had this issue been alleged in the C-10 Petition, it likely would not have been admitted because it would not have been material to the Staff's decision in reviewing the LAR.¹¹⁹⁴

We therefore grant NextEra's Motion in Limine regarding peer review.

3. *Steel Corrosion*

NextEra moved to exclude C-10's testimony on the subject of steel corrosion.¹¹⁹⁵ Specifically, NextEra argued that the Board found the topic of steel corrosion was beyond the scope of the proceeding in dismissing Contention F.¹¹⁹⁶ Contention F stated "elevated levels of salt . . . [have] likely created the conditions for corrosion of reinforcing steel[.]"¹¹⁹⁷ NextEra argued that Dr. Saouma's statement that testing for free chloride concentrations is important to "make sure that it is below critical limits before steel [depasivates] (i.e. corrode)"¹¹⁹⁸ is "simply reiterat[ing] the argument previously rejected by the Board" in Contention F.¹¹⁹⁹

C-10, however, argued that Contention F challenged the monitoring of the rebar, whereas here, Dr. Saouma's argument for testing the concentration of free chloride is focused on monitoring concrete.¹²⁰⁰ Further, C-10 argued that testing for the free chloride concentration is included within the admissible pur-

¹¹⁹³ See Ex. NRC001-R, Staff Testimony at 73-74; NextEra MIL 2 at 14 n.59.

¹¹⁹⁴ The Board notes that the phrase "peer review" was mentioned in C-10's Petition, however it was stated in a passing manner and did not equate to an argument alleging a lack of peer review. In fact, the reference to peer review was made in the context of proposed Contention E, which we found wholly inadmissible. See C-10 Petition at 11 ("It is difficult to understand how withholding pertinent information, which would allow an independent assessment of the test results used to support the claims of NextEra, could reasonably be interpreted in this way. It is usual to actually submit such results for peer review to provide a basis for consensus among the relevant scientific community."); LBP-17-7, 86 NRC at 131-32; see also NextEra MIL 2 at 14 nn.58-59.

¹¹⁹⁵ NextEra MIL 2 at 9.

¹¹⁹⁶ *Id.*; see LBP-17-7, 86 NRC at 132-33.

¹¹⁹⁷ C-10 Petition at 12.

¹¹⁹⁸ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 22 ("Because of the proximity of the sea, concrete should be tested for its (free) chloride concentration and make sure that it is below critical limits before steel [depasivates] (i.e. corrode[s])."); Ex. INT032, Dr. Saouma Rebuttal Testimony at 36 ("[S]aline solution could easily find its way through the ASR-induced cracks, depasivating the steel rebar (according to Faraday's law), and causing corrosion (Hansen and Saouma, 1999)[.]").

¹¹⁹⁹ NextEra MIL 2 at 9.

¹²⁰⁰ C-10 Opp. to MIL 2 at 5-6.

pose of determining “the required comprehensive petrographic analysis of in-situ concrete[.]”¹²⁰¹ We agree with NextEra and exclude the testimony of steel corrosion.¹²⁰²

C-10 failed to base its steel corrosion argument on a deficiency in the LAR and instead asserted that an alternative methodology should be implemented. In addition, C-10’s attempt to distinguish the present testimony from that proffered in support of Contention F is unpersuasive. At its core, both arguments, although stated differently, are concerned with the corrosion of steel rebar. Dr. Saouma advocated for the testing of the free chloride concentration for one purpose — to make sure it will not cause corrosion of the rebar.¹²⁰³ That is the exact subject we found inadmissible in Contention F.¹²⁰⁴ Further, as noted in our ruling on contention admissibility, the SMP contains a separate program for monitoring rebar that was not revised in the LAR.¹²⁰⁵ Therefore, for the aforementioned reasons, we grant NextEra’s Motion in Limine to exclude testimony on the topic of testing for chloride concentration.

G. Unaddressed Issues

We reviewed the voluminous record associated with this proceeding and weighed the evidence presented and the parties’ positions. The above discussions capture all of the material issues within the scope of the proceeding. To the extent we did not address an argument raised by C-10, we found it immaterial to the findings we must make.

IX. CONCLUSION

A. Summary of Board Holdings and License Conditions

The Board finds that the following conditions are necessary for the NextEra requested license amendment to satisfy regulatory requirements and so these

¹²⁰¹ *Id.* at 6 (quoting LBP-17-7, 86 NRC at 112).

¹²⁰² *See supra* note 1198.

¹²⁰³ The salt-induced corrosion of rebar, which is beyond the scope of the reformulated contention, is distinct from the ASR-induced cracking of rebar, which was addressed earlier, *supra* Part VIII.A.5; *see* Ex. INT027, Dr. Saouma Pre-Filed Testimony at 22 (“Because of the proximity of the sea, concrete should be tested for its (free) chloride concentration and make sure that it is below critical limits before steel [depassivates] (i.e. corrode).”).

¹²⁰⁴ LBP-17-7, 86 NRC at 132-33.

¹²⁰⁵ *Id.* at 133 (“The plant’s rebar is already subject to a monitoring program that is not being altered in this LAR”); *see* Ex. NER007, Seabrook [SMP] Manual Rev. 7 at 1-1.2, 2-1.1 (non-public).

conditions are added to License No. NPF-86, Amendment No. 159, Appendix C:

- c. NextEra shall undertake the monitoring required by MPR-4273, Appendix B, Check 3, for control extensometers every six months, rather than in 2025 and every ten years thereafter.
- d. If stress analyses conducted pursuant to the SEM show that the stress in the rebar from ASR-induced expansion and other loads will exceed the yield strength of the rebar, NextEra must develop a monitoring program sufficient to ensure that rebar failure or yielding does not occur, or is detected if it has already occurred, in the areas at-risk of rebar failure or yielding.
- e. If the ASR expansion rate in any area of a Seabrook seismic Category I structure significantly exceeds 0.2 mm/m (0.02%) through-thickness expansion per year, NextEra's Management will perform an engineering evaluation focused on the continued suitability of the six-month monitoring interval for Tier 3 areas. If the engineering evaluation concludes that more frequent monitoring is necessary, it shall be implemented under the SMP.
- f. Each core extracted from Seabrook Unit 1 will be subjected to a petrographic analysis to detect internal microcracking and delamination.

Subject to the listed conditions, the Board resolves the reformulated contention in favor of NextEra. With the addition of these necessary conditions to License Amendment No. 159, the Board concurs with the Staff that NextEra's proposed method to evaluate seismic Category I structures affected by ASR "is acceptable and provides reasonable assurance that these structures [will] continue to meet the relevant requirements of 10 [C.F.R.] Part 50, Appendix A, GDC 1, 2, 4, 16 (containment only) and 50 (containment only) and 10 [C.F.R.] Part 50, Appendix B."¹²⁰⁶

B. Review of the Board's Decision

In accordance with 10 C.F.R. §§ 2.1210, 2.1212, and 2.341, this initial decision will constitute a final decision of the Commission 120 days after its issuance unless: (1) a party files a petition for Commission review within twenty-five (25) days after service of this initial decision; or (2) the Commission directs otherwise. Within twenty-five (25) days after service of a petition for Commission review, parties to the proceeding may file an answer supporting or opposing

¹²⁰⁶ Ex. INT024, Final SE at PDF 69.

Commission review. “Unless otherwise authorized by law, a party to an NRC proceeding must file a petition for Commission review before seeking judicial review of an agency action.”¹²⁰⁷

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Ronald M. Spritzer, Chairman
ADMINISTRATIVE JUDGE

Nicholas G. Trikouros
ADMINISTRATIVE JUDGE

Dr. Sekazi K. Mtingwa
ADMINISTRATIVE JUDGE

Rockville, Maryland
August 21, 2020

¹²⁰⁷ 10 C.F.R. § 2.1212.

APPENDIX

GLOSSARY OF TERMS¹²⁰⁸

Aggregate	Particulate material, commonly gravel and sand, that is mixed with cement and water to produce concrete. Aggregate sizes can be coarse (large) or fine (small), with concrete mixture designs using a spectrum of aggregate sizes.
Alkali-silica reaction (ASR)	A chemical reaction that can occur in concrete and produce an expansive gel that results in cracking and may eventually cause structural distress.
Axial compression	Forces that compress (i.e., squeeze) a structural element together. Excessive axial compression loading will cause the element to crush.
Beam (one-way) shear	Shearing forces are unaligned forces that push one part of the element in one direction and another part of the element in another direction. Forces applied in parallel planes that are some distance apart create compression and tension fields. Excessive one-way shear produces a diagonal failure plane between the unaligned, opposite forces.
Capacity	Ability of a structural member to withstand applied load.
Chemical prestressing	In the context of ASR, “chemical prestressing” is a means for producing continuous compressive stress in reinforced concrete by virtue of ASR expansion being restrained by embedded reinforcement.
Compression	A load applied to a structural member that is in the direction of pushing the constituents together; i.e., crushing. In other words, a compression load works to reduce the size of the component.

¹²⁰⁸See Ex. NER002, MPR Glossary at 1-4.

Prestressed concrete	A special form of reinforced concrete in which reinforcing steel (i.e., prestressing steel) is tensioned against the concrete (putting concrete in compression). The application of compression load to a concrete member improves its service performance by limiting tensile stresses or cracking resulting from those tensile stresses. The compressive stress from prestressing (i.e., precompression) must be completely overcome before the concrete member will be exposed to net tensile stress.
Combined Cracking Index (CCI)	A term used at Seabrook Station for a combination of Cracking Index values in both the horizontal and vertical directions.
Cracking Index (CI)	A crack width summation technique for quantitatively estimating tensile strains experienced by a reinforced concrete element. The Cracking Index is the ratio of the sum of crack widths to the length of which the crack summation activity is performed (i.e., the gauge length).
Crack width summation	A technique for estimating expansion of a reinforced concrete element by measuring the widths of cracks along a line (or lines) of defined length.
Damage Rating Index (DRI)	A technique for characterizing ASR progression during petrographic examination by assigning a quantitative score to characterize certain features associated with ASR. The cumulative result is the DRI.
Demand	Potential load(s) that could be applied to a structural member.
Extensometer	A device for monitoring expansion into the depth of a concrete member that is embedded in a borehole drilled into concrete.
Finite element analysis (FEA)	The FEA is a computational model that includes various elements to collectively simulate the structural geometry, stiffness, and mass of the desired structure. Modelers can add loads (i.e., demands), such as gravity, wind, or ASR, to the FEA to measure structural responses.

Flexure	A force that causes a structural element to bend. Compression is applied on the inside radius of the bent member and tension is applied on the outside radius. For a concrete member, which is typically weaker in tension, excessive flexure loading will cause the element to split or tear on the tension side.
In-Plane expansion	Expansion that occurs in the two dimensions of a concrete member that are visibly accessible at the surface. At Seabrook Station and in the LSTP test specimens, the “in-plane” directions are also parallel to the embedded reinforcement mats.
Limit state	A behavioral mode by which a structural response is examined. In structural design, each limit state must be evaluated to confirm structural adequacy. For example, a reinforced concrete component must be sufficiently strong in flexure, shear, etc.
Normalized Elastic Modulus	The ratio of the modulus of elasticity of ASR-affected concrete to the original elastic modulus. This parameter is the input variable for the correlation to determine through-thickness expansion prior to instrument installation.
Plain concrete	Concrete without reinforcing bars, or unreinforced concrete.
Petrographic evaluation	Microscopic examination of prepared concrete surfaces by a qualified petrographer. The examination assesses the overall quality of concrete and can determine causes for concrete degradation.
Punching (two-way) shear	For punching shear, force is applied locally, rather than in a uniform plane. In other words, a punching shear condition exists when a structural wall or a reinforced concrete slab is patch-loaded. An excessively patch-loaded area will result in critical levels of shear stresses and will eventually puncture the structural element in the vicinity of the patch-loaded area.

Reinforcement anchorage	The bond between the concrete to the embedded reinforcement that allows load to transfer from the concrete to the reinforcing bars. A loss of reinforcement anchorage would cause the reinforcing bars to “slip” within the concrete element. For reinforced concrete elements to behave in a manner consistent with the design principles, all reinforcement needs to be anchored.
Reinforcing bars (Rebar or Rebars)	Steel bars embedded in concrete to increase the capacity of the structural members to withstand design loads. Since concrete is strong in compression and weak in tension, the primary use of reinforcing bars is to reinforce the “tension side” of reinforced concrete elements.
Reinforcement ratio	The cross-sectional area of reinforcing bars divided by the entire cross section of the reinforced concrete structural member. This calculation determines the fraction of a reinforced concrete section occupied by reinforcement.
Representativeness	The ability to apply conclusions from one application to inform circumstances in another application. In the context of the admitted contention, “representativeness” refers to the results from the LSTP and their applicability to reinforced concrete structures at Seabrook Station.
Seismic Category I Structures	Structures at a nuclear power plant that must fulfill their design function following a design basis seismic event.
Shear	A loading condition where unaligned forces push one part of a structural member in one direction and another part of the member in another direction, creating a diagonal compression and tension field. Excessive shear forces produce a diagonal failure plane that runs between the applied load and a support reaction in a typical shear test.
Tension	A load applied to a structural member that is in the direction of pulling the constituents apart. In other words, a tensile load works to elongate, or increase the size of, a structural component.

**Through-thickness
expansion**

Expansion that occurs in the dimension of a concrete member that is not visibly accessible at the surface, i.e., expansion in the direction through the surface. At Seabrook Station and in the LSTP test specimens, the through-thickness direction is not reinforced (except for the lower portion of the Containment structure).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

**Docket Nos. 50-528-LT
50-529-LT
50-530-LT**

**EL PASO ELECTRIC COMPANY
(Palo Verde Nuclear Generating
Station, Units 1, 2, and 3)**

September 15, 2020

STANDING TO INTERVENE

To intervene in any NRC licensing proceeding, including a license transfer proceeding, a petitioner must demonstrate standing by showing that its interest may be affected by the proceeding.

STANDING TO INTERVENE

The Commission has long applied contemporaneous judicial concepts of standing to assess whether a petitioner has set forth a sufficient interest to qualify for a hearing. Under this framework, a petitioner must identify an interest in the proceeding by claiming an actual or threatened injury that is fairly traceable to the challenged action, is likely to be redressed by a favorable decision, and arguably falls within the zone of interests protected by the AEA. The injury must be both concrete and particularized, not conjectural, or hypothetical.

STANDING TO INTERVENE

It is the petitioner's burden to provide sufficient facts to establish standing.

STANDING TO INTERVENE, REPRESENTATIONAL

To demonstrate representational standing, an organization must show that at least one of its members may be affected by the NRC's approval of a licensing action and qualifies for standing in his or her own right. The organization must identify the member by name and demonstrate that the member has authorized the organization to represent him or her and to request a hearing on his or her behalf.

STANDING TO INTERVENE, REPRESENTATIONAL

To demonstrate representational standing, the organization must show that the interests it seeks to protect are germane to its own purpose, and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action.

STANDING TO INTERVENE, ORGANIZATIONAL

An organization seeking to intervene in its own right must satisfy the same standing requirements as an individual seeking to intervene.

STANDING TO INTERVENE, ORGANIZATIONAL; INJURY IN FACT

To address the "injury" requirement, an organization seeking to intervene in its own right must show that the licensing action would constitute a threat to its organizational interests.

STANDING TO INTERVENE, ORGANIZATIONAL

The Commission does not recognize standing for an organization that seeks to raise environmental or safety matters that are of general concern but do not directly affect the organization's own interests.

PROXIMITY PRESUMPTION

In certain circumstances, such as construction permit and operating license proceedings for power reactors, the Commission recognizes a "proximity presumption" under which it is presumed that a petitioner has standing to intervene

if the petitioner lives within, or otherwise has frequent contacts with, the zone of possible harm from the nuclear reactor. In these cases, the Commission has found standing based solely on proximity when a petitioner lives within approximately fifty miles of the facility in question.

PROXIMITY PRESUMPTION

In license transfer proceedings, the Commission determines on a case-by-case basis whether the proximity presumption should apply, considering the obvious potential for offsite (radiological) consequences, or lack thereof, from the application at issue.

PROXIMITY PRESUMPTION

If a petitioner fails to show an obvious potential for harm from a proposed action, the inquiry reverts to a traditional standing analysis, in which the petitioner must explain how the action will harm his interests by demonstrating injury, traceability, and redressability.

INJURY IN FACT; ECONOMIC INJURY

In order to support standing in an NRC proceeding, an economic harm must be directly related to an environmental or radiological harm.

INJURY IN FACT; ECONOMIC INJURY

The effect of a license transfer on an organization's members' utility bills is an economic interest that falls outside the "zone of interests" protected by the AEA.

PROXIMITY PRESUMPTION

The Commission has not granted proximity standing in indirect license transfer proceedings that involve no change in the operator, no change in the direct owner, and no change in the physical plant, because such proceedings create no obvious source of actual or potential harm.

STANDING TO INTERVENE

The Commission's determination on standing does not hinge upon an ap-

praisal of the degree of assistance a petitioner might render in the decisional process.

STANDING TO INTERVENE, ORGANIZATIONAL

An organization's assertion that it has conducted extensive research into the facts of a license transfer application is not sufficient, in and of itself, to demonstrate an injury to the organization.

MEMORANDUM AND ORDER

This license transfer proceeding concerns an application filed by El Paso Electric Company (EPE) on behalf of itself and IIF US Holding 2 LP (IIF US 2) (collectively, the Applicants).¹ The Applicants seek NRC approval of an indirect transfer of EPE's non-operating interest in the renewed facility operating licenses for Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2, and 3 and the associated general license for the independent spent fuel storage installation (ISFSI) to IIF US 2.

Public Citizen, a non-profit research and advocacy organization, has filed a petition for leave to intervene and request for hearing in this proceeding.² For the reasons discussed below, we find that Public Citizen has not established standing to intervene.³ We therefore deny the petition and terminate this proceeding.

I. BACKGROUND

EPE, a public utility that generates, transmits, and distributes electricity in western Texas and southern New Mexico, owns a 15.8% non-operating interest in the operating licenses for PVNGS Units 1, 2, and 3 and the general license for the PVNGS ISFSI. Arizona Public Service Company (APS) owns a 29.1% in-

¹ See Application for Order Approving Indirect Transfer of Control of Renewed Facility Operating License Nos. NPF-41, NPF-51, and NPF-74 (Application), attached (Encl. 3) to Letter from Adrian J. Rodriguez, Interim Chief Executive Officer, General Counsel, and Assistant Secretary, EPE, to NRC Document Control Desk (Aug. 13, 2019) (Cover Letter). The Cover Letter, Application, and associated enclosures can be found at ADAMS accession number ML19225D197.

² See *generally* Public Citizen's Request for Hearing and Petition for Leave to Intervene (Nov. 18, 2019) (Petition).

³ Because of this finding, we do not reach the question of whether Public Citizen has met the requirement in 10 C.F.R. § 2.309(a) to submit at least one admissible contention.

terest in PVNGS and holds sole operating authority under the PVNGS licenses.⁴ EPE seeks NRC approval of an indirect transfer of its interest in the PVNGS licenses to IIF US 2 as part of a merger and acquisition transaction in which IIF US 2 would indirectly acquire 100% of the shares in EPE.⁵ IIF US 2 is an infrastructure investment fund that is managed and controlled by its general partner, IIF US Holding 2 GP, LLC (IIF GP).⁶ As a result of the transaction, EPE would cease to be publicly owned and would become an indirect, wholly owned subsidiary of IIF US 2.⁷

Under the proposed license transfer, APS would continue to operate PVNGS and the ISFSI.⁸ The transaction and license transfer would have no effect on APS's operating authority or technical qualifications; would not require or result in any changes to APS's management, staffing, or procedures; and would not require any amendments to the PVNGS licenses.⁹ According to the Applicants, EPE would continue to generate, transmit, and distribute electricity and recover the costs associated with those activities from ratepayers.¹⁰ EPE would also remain responsible for the decommissioning funding assurance associated with its 15.8% ownership interest in PVNGS and would continue to provide decommissioning funding as required by 10 C.F.R. § 50.75.¹¹

In March 2020, the NRC Staff issued an order approving the requested trans-

⁴ Application at 1-2, 9. In addition to EPE, the other owners of PVNGS with non-operating interests are Salt River Project Agricultural Improvement and Power District (17.49%), Southern California Edison Company (15.8%), Public Service Company of New Mexico (10.2%), Southern California Public Power Authority (5.91%), and Los Angeles Department of Water and Power (5.7%). *Id.* at 2 n.2.

⁵ Cover Letter at 1; Application at 1, 3.

⁶ Application at 5. According to the Application, IIF GP is owned and controlled by three private individuals who are U.S. citizens. *Id.* The IIF US 2 limited partners are investors who provide capital for the fund's activities but "do not have the ability to manage or control IIF US 2 or any of its subsidiaries." *Id.*

⁷ *Id.* at 1; *id.*, Attach. 2. According to the Application, EPE would become a direct subsidiary of Sun Jupiter Holdings LLC and an indirect subsidiary of several intermediate companies, with IIF US 2 as the ultimate parent company. *See id.*, Attach. 2.

⁸ *Id.* at 9.

⁹ *Id.* at 9, 11.

¹⁰ *Id.* at 9. Because EPE would remain an "electric utility" as defined in our regulations, *see* 10 C.F.R. § 50.2, EPE is not required to demonstrate its financial qualifications in a license transfer application. Application at 9-10; *see* 10 C.F.R. § 50.33(f).

¹¹ Application at 10.

fer.¹² In July 2020, EPE consummated the merger and acquisition transaction proposed in its Application.¹³

II. DISCUSSION

A. Legal Standards for Standing

To intervene in any NRC licensing proceeding, including a license transfer proceeding, a petitioner must demonstrate standing by showing that its “interest may be affected by” the proceeding.¹⁴ “[W]e have long applied contemporaneous ‘judicial concepts of standing’” to assess whether a petitioner has set forth a sufficient interest to qualify for a hearing.¹⁵ Under this framework, a petitioner must “identify an interest in the proceeding” by claiming an actual or threatened injury that is fairly traceable to the challenged action, is likely to be redressed by a favorable decision, and arguably falls within the “zone of interests” protected by the AEA.¹⁶ The injury “must be both concrete and particularized, not ‘conjectural,’ or ‘hypothetical.’”¹⁷ It is the petitioner’s burden to provide sufficient facts to establish standing.¹⁸

An organization seeking to intervene may demonstrate standing based on an asserted harm to the interest of one or more of its individual members, representational standing, or based on an asserted harm to its own organizational

¹² Arizona Public Service Co.; El Paso Electric Co.; Palo Verde Nuclear Generating Station, Units 1, 2, and 3, and Independent Spent Fuel Storage Installation; Indirect Transfer of Licenses; Order, 85 Fed. Reg. 13,943 (Mar. 10, 2020). The Staff is expected to “promptly issue approval or denial of license transfer requests” even if a hearing has been requested. *See* 10 C.F.R. § 2.1316. We retain the authority, however, to rescind, modify, or condition an approved transfer based on the outcome of any pending adjudicatory proceeding.

¹³ *See* Letter from Adrian J. Rodriguez, EPE, to NRC Document Control Desk (Jul. 29, 2020), at 1-2.

¹⁴ *See* Atomic Energy Act of 1954, as amended (AEA), § 189a., 42 U.S.C. § 2239(a); 10 C.F.R. § 2.309(d)(1).

¹⁵ *Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915 (2009) (quoting *U.S. Department of Energy* (Plutonium Export License), CLI-04-17, 59 NRC 357, 363 (2004)).

¹⁶ *E.g., Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 258 (2008). The petitioner must also “specify the facts pertaining to that interest.” *Id.*

¹⁷ *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 72 (1994) (internal citation omitted) (quoting *O’Shea v. Littleton*, 414 U.S. 488, 494 (1974)).

¹⁸ *PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 139 (2010); *U.S. Enrichment Corp.* (Paducah, Kentucky Gaseous Diffusion Plant), CLI-01-23, 54 NRC 267, 272 (2001).

interest.¹⁹ To demonstrate representational standing, the organization must show that at least one of its members may be affected by the NRC's approval of a licensing action and qualifies for standing in his or her own right.²⁰ The organization must also identify the member by name and demonstrate that the member has authorized the organization to represent him or her and to request a hearing on his or her behalf.²¹ And finally, the interests that the organization seeks to protect must be germane to its own purpose, and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action.²²

An organization seeking to intervene in its own right must satisfy the same standing requirements as an individual seeking to intervene.²³ To address the "injury" requirement, the organization must show that the licensing action would constitute "a threat to its organizational interests."²⁴ We do not recognize standing for an organization that seeks to raise environmental or safety matters that are of general concern but do not directly affect the organization's own interests.²⁵

Moreover, "in certain circumstances — such as construction permit and operating license proceedings for power reactors — we recognize a 'proximity' . . . presumption" under which "we presume that a petitioner has standing to intervene if the petitioner lives within, or otherwise has frequent contacts with, the zone of possible harm from the nuclear reactor."²⁶ In these cases, we have found standing based solely on proximity when a petitioner lives within approximately fifty miles of the facility in question.²⁷ But in other cases, including license transfers, "[w]e determine on a case-by-case basis whether the proximity

¹⁹ *Crow Butte Resources, Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 18 (2014); *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995).

²⁰ *Palisades*, CLI-08-19, 68 NRC at 258-59; *Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 409 (2007).

²¹ *Palisades*, CLI-08-19, 68 NRC at 258-59; *Palisades*, CLI-07-18, 65 NRC at 409.

²² *Palisades*, CLI-08-19, 68 NRC at 258-59; *Palisades*, CLI-07-18, 65 NRC at 409; *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999).

²³ *Palisades*, CLI-07-18, 65 NRC at 411.

²⁴ *Crow Butte*, CLI-14-2, 79 NRC at 18; *see also Georgia Tech*, CLI-95-12, 42 NRC at 115.

²⁵ *See Palisades*, CLI-08-19, 68 NRC at 269-70; *Palisades*, CLI-07-18, 65 NRC at 411-12; *International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001).

²⁶ *Calvert Cliffs*, CLI-09-20, 70 NRC at 915.

²⁷ *Id.* at 915-16 (citing *Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-19, 65 NRC 423, 426 (2007)). In construction permit and operating license cases, we have found that "persons living within the roughly 50-mile radius of the facility 'face a realistic threat of harm' if a release from the facility of radioactive material were to occur." *Calvert Cliffs*, CLI-09-20, 70 NRC at 917 (quoting LBP-09-4, 69 NRC 170, 183 (2009)).

presumption should apply, considering the ‘obvious potential for offsite [radiological] consequences,’ or lack thereof, from the application at issue.”²⁸ If a petitioner fails to show an obvious potential for harm from a proposed action, the inquiry reverts to a traditional standing analysis, in which the petitioner must explain how the action will harm his interests by demonstrating injury, traceability, and redressability.²⁹

B. Finding on Standing

Public Citizen first asserts representational standing based on the interests of “at least [sixty-nine] dues-paying members” in El Paso, Texas, who “pay monthly utility bills to [EPE], and are therefore affected by any change in ownership of [EPE].”³⁰ These general statements, which represent the entire discussion of these members’ standing in the Petition, do not demonstrate that one of the El Paso members “qualif[ies] for standing in his or her own right.”³¹ Public Citizen has not explained how the interests of one or more of these members could be affected by the indirect transfer of licenses for a nuclear plant that is located hundreds of miles from El Paso. Further, the interest Public Citizen alludes to — the effect of the change in ownership on its El Paso members’ monthly utility bills — is an economic interest that falls outside the “zone of interests” protected by the AEA.³² In order to support standing in an NRC proceeding, an economic

²⁸ *Big Rock Point*, CLI-07-19, 65 NRC at 426; see *Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580-81 (2005).

²⁹ *Palisades*, CLI-08-19, 68 NRC at 268-69; *Peach Bottom*, CLI-05-26, 62 NRC at 581.

³⁰ Petition at 2.

³¹ E.g., *Palisades*, CLI-08-19, 68 NRC at 259. The standing discussion also does not identify a member by name or provide an affidavit or other documentation showing that a member has authorized Public Citizen to represent his or her interests in this matter. See, e.g., *id.* at 258-59. In its reply, Public Citizen attempts to remedy the first deficiency by providing the name and address of a member who “has volunteered to go on the record for the purposes of this proceeding.” Answer of Public Citizen, Inc. (Dec. 17, 2019), at 2 (Reply). However, our precedent explains that “it is not acceptable in NRC practice for a petitioner to claim standing based on vague assertions, and when that fails, to attempt to repair the defective pleading with fresh details” at a later juncture. *Palisades*, CLI-08-19, 68 NRC at 261-62. In any event, the Reply does not provide evidence of authorization. When an organization relies on representational standing, there must be a “concrete indication” that the member wants the organization to represent his or her interests in a proceeding. *Palisades*, CLI-07-18, 65 NRC at 410 (quoting *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 396 (1979)).

³² See *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-342, 4 NRC 98, 105-06 (1976) (zone of interests created by the AEA is avoidance of a threat to health and safety of the public as a result of radiological releases); see also *Pacific Gas and Electric Co.* (Diablo
(Continued)

harm must be “directly related to environmental or radiological harm.”³³ Public Citizen has not shown such a connection or identified a potential environmental or radiological harm that would result from this license transfer. Accordingly, Public Citizen has not demonstrated representational standing on behalf of its El Paso members.

Public Citizen also asserts representational standing on behalf of an unidentified member who “lives in the same zip code as the Palo Verde nuclear power station.”³⁴ Public Citizen states that this person, by virtue of “close proximity” to PVNGS, has a “substantial interest in the outcome” of this license transfer proceeding and that, for a person so situated, “[c]larifying the exact ownership of an operating license of a nuclear power plant is essential.”³⁵

The information provided about this member is insufficient to support standing. Public Citizen did not provide the name of this member and an affidavit or other documentation showing that Public Citizen is authorized to represent this member. And Public Citizen cannot rely on this member’s “close proximity” to PVNGS to support standing. We have consistently held that indirect license transfers involving “no change in the operator, no change in the direct owner, and no change in the physical plant . . . create[] no obvious source of actual or potential harm.”³⁶ Consequently, we have not extended proximity standing in such cases, and we see no reason to deviate from our practice here.³⁷ If a petitioner cannot show an “obvious potential for offsite consequences” from a proposed action, the petitioner must explain how the action will harm its interests by claiming an injury under traditional standing requirements.³⁸ Other than stating that this member has an interest in “clarifying the ownership” of the

Canyon Nuclear Power Plant, Units 1 and 2), CLI-02-16, 55 NRC 317, 336 n.23 (2002) (citing *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 n.4 (1983)) (“[T]he Commission has long held that ratepayer interests do not confer standing.”).

³³ *Diablo Canyon*, CLI-02-16, 55 NRC at 336.

³⁴ Petition at 2.

³⁵ *Id.*

³⁶ *Palisades*, CLI-08-19, 68 NRC at 260. Even in a case involving the direct transfer of a non-operating interest under similar circumstances (i.e., no change in operator, and no change in physical plant, procedures, management, or personnel), we have found the risks associated with such a transfer to be “de minimis.” See *Peach Bottom*, CLI-05-26, 62 NRC at 581-82. In such cases, proximity alone does not demonstrate how the license transfer would cause harm, and thus does not show standing. See *Palisades*, CLI-08-19, 68 NRC at 260-61 (internal citations omitted).

³⁷ See *Palisades*, CLI-08-19, 68 NRC at 269. For example, in *Peach Bottom*, we found that the direct transfer of a fifty percent non-operating interest did not warrant proximity standing. *Peach Bottom*, CLI-05-26, 62 NRC at 581. Even if we were to recognize proximity standing here, Public Citizen’s general statements that a member lives “in the same zip code” and in “close proximity” to the facility, without more, are insufficient to demonstrate the requisite “interest.” See *Palisades*, CLI-07-18, 65 NRC at 410.

³⁸ *Palisades*, CLI-08-19, 68 NRC at 268-69.

operating licenses for PVNGS, Public Citizen provides no further basis for this member's standing. Therefore, Public Citizen has not demonstrated representational standing on behalf of this member.

Finally, Public Citizen states that it has "conducted extensive, independent research into the corporate structure" of IIF US 2 that provides "important facts" about the Application.³⁹ Public Citizen asserts that its participation in a hearing is therefore "essential to assist the Commission in its review of the Application."⁴⁰ But Public Citizen's interest in IIF US 2's corporate structure, in and of itself, does not demonstrate injury.⁴¹ Our standing determinations do not "hing[e] to any extent upon an appraisal of how much or little assistance the would-be intervenor might rend[e]r in the decisional process."⁴² Accordingly, we do not find that these statements provide a sufficient factual basis to grant Public Citizen organizational standing.

III. CONCLUSION

For the reasons outlined in this decision, we *deny* Public Citizen's request for hearing and petition to intervene and *terminate* this proceeding.

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 15th day of September 2020.

³⁹ Petition at 2.

⁴⁰ *Id.*

⁴¹ See *Peach Bottom*, CLI-05-26, 62 NRC at 580; see also *Sierra Club v. Morton*, 405 U.S. 727, 739 (1972) ("[A] mere 'interest in a problem,' no matter how longstanding the interest and no matter how qualified the organization is in evaluating the problem, is not sufficient by itself to render the organization 'adversely affected' . . . within the meaning of the [Administrative Procedure Act].").

⁴² *North Anna*, ALAB-342, 4 NRC at 107 n.12.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Paul S. Ryerson, Chairman
Nicholas G. Trikouros
Dr. Gary S. Arnold

In the Matter of

Docket No. 72-1051-ISFSI
(ASLBP No. 18-958-01-ISFSI-BD01)

HOLTEC INTERNATIONAL
(HI-STORE Consolidated Interim
Storage Facility)

September 3, 2020

This proceeding concerns requests for a hearing on a license application by Holtec International (Holtec) to construct and operate a consolidated interim storage facility for spent nuclear fuel in Lea County, New Mexico. The Board considered two motions by Fasken Land and Minerals, Ltd. and Permian Basin Land and Royalty Owners: (1) to reopen the record and (2) for leave to file an amended contention out of time. The Board denied both motions and also determined that Fasken did not proffer an admissible contention.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

The contention admissibility requirements are strict by design and result from the Commission's decision to raise the threshold bar for what is admissible.

RULES OF PRACTICE: REOPENING OF RECORD

To reopen a closed record, a petitioner must file a motion demonstrating that its new contention (1) is timely; (2) addresses a significant safety or environ-

mental issue; and (3) demonstrates that a materially different result would be or would have been likely had the newly proffered evidence been considered initially. The petitioner must attach an affidavit that separately addresses each of these criteria, with a specific explanation of why each criterion has been satisfied. An exceptionally grave issue may be considered in the discretion of the presiding officer even if untimely presented.

**RULES OF PRACTICE: MOTIONS TO REOPEN THE RECORD
(ACCOMPANYING AFFIDAVIT(S))**

The supporting affidavit or affidavits must be from experts in the disciplines appropriate to the issues raised or from competent individuals with knowledge of the facts alleged.

RULES OF PRACTICE: MOTIONS TO REOPEN THE RECORD

The Commission considers reopening a closed record to be an extraordinary action, and places an intentionally heavy burden on parties seeking to reopen the record. The Commission mandates that the standard for admitting a new contention after the record is closed is higher than for an ordinary late-filed contention.

**RULES OF PRACTICE: MOTIONS TO REOPEN THE RECORD
(TIMELINESS)**

The NRC expects a petitioner to evaluate all available information at the earliest possible time to identify the potential basis for contentions and preserve their admissibility.

RULES OF PRACTICE: AMENDMENT OF CONTENTIONS

Licensing Boards do not entertain arguments that are advanced for the first time in a reply brief and they surely should not consider positions that are advanced for the first time at oral argument.

**MEMORANDUM AND ORDER
(Denying Motions to Reopen and for Leave to File)**

Before the Board in this closed proceeding are two motions by Fasken Land and Minerals, Ltd. and Permian Basin Land and Royalty Owners (collectively,

“Fasken”): (1) to reopen the record;¹ and (2) for leave to file an amended contention out of time.² Holtec International (Holtec) and the NRC Staff oppose.³

We deny the motions.

I. BACKGROUND

This proceeding concerns Holtec’s application for a license to construct and operate a consolidated interim storage facility for spent nuclear fuel in Lea County, New Mexico. The factual background and prior proceedings before this Licensing Board are set forth in our Memorandum and Order of May 7, 2019 (LBP-19-4), in which the Board denied all petitioners’ hearing requests.⁴

On April 23, 2020, in response to petitioners’ appeals, the Commission in CLI-20-4 substantially affirmed the Board’s rulings in LBP-19-4, but reversed in part and remanded for further consideration four contentions that had been proffered by Sierra Club.⁵ Additionally, the Commission remanded, for the Board’s ruling on admissibility, two contentions that were proffered several months after we had terminated this proceeding at the Licensing Board level: (1) Sierra Club Contention 30; and (2) Fasken Contention 2.⁶

On June 18, 2020, for reasons explained in our Memorandum and Order (LBP-20-6),⁷ we ruled that Sierra Club’s remanded contentions were not admissible and denied its motion to late-file Sierra Club Contention 30. We also denied Fasken’s motion for leave to file Fasken Contention 2 as originally proffered.

To place Fasken’s pending motions in context, we first summarize the history of Fasken Contention 2.

¹ Fasken Motion to Reopen the Record (May 11, 2020) [hereinafter Motion to Reopen].

² Fasken Motion for Leave to File Amended Contention No. 2 (May 11, 2020) [hereinafter Amended Motion for Leave].

³ Holtec’s Answer Opposing Fasken Motion to Reopen the Record and Motion for Leave to File Amended Contention No. 2 (June 5, 2020) [hereinafter Holtec Answer]; NRC Staff Answer in Opposition to Fasken’s Motions to Amend Contention 2 and Reopen the Record (June 4, 2020) [hereinafter NRC Staff Answer]. Fasken submitted a combined reply. Fasken Combined Reply to NRC Staff’s and Holtec’s Oppositions to Motion for Leave to File Amended Contention and Motion to Reopen the Record (June 11, 2020).

⁴ LBP-19-4, 89 NRC 353, 358 (2019).

⁵ CLI-20-4, 91 NRC 167, 187-91 (2020).

⁶ *Id.* at 172-73, 211.

⁷ LBP-20-6, 91 NRC 239, 241, 242, 247, 252 (2020).

II. FASKEN CONTENTION 2

At the outset of this adjudicatory proceeding, Fasken did not submit any contentions. Instead, it moved to dismiss Holtec's application, claiming the NRC lacked jurisdiction to consider it.⁸ The Secretary of the Commission denied Fasken's motion without prejudice, and referred it for consideration as a contention under 10 C.F.R. § 2.309.⁹

This Board did so. Although we determined that Fasken had demonstrated standing, we concluded that its jurisdictional challenge (later designated Fasken Contention 1) did not satisfy the requirements for an admissible contention under 10 C.F.R. § 2.309(f)(1). As explained in LBP-19-4, we therefore denied Fasken's petition, at the same time we denied all other hearing petitions, and terminated this proceeding on May 7, 2019.¹⁰

More than twelve weeks later, Fasken proffered Fasken Contention 2, accompanied by a motion for leave to file out of time.¹¹ Fasken Contention 2 stated:

Statements in Holtec's Safety Analysis Report (SAR) and Facility Environmental Report (FER) regarding "control" over mineral rights below the site are materially misleading and inaccurate. Reliance on these statements nullifies Holtec's ability to satisfy the NRC's siting evaluation factors.¹²

Fasken claimed to submit Contention 2 in response to new information contained in a June 19, 2019 letter from Stephanie Garcia Richard, State of New Mexico, Commissioner of Public Lands, to Krishna P. Singh, President and CEO of Holtec.¹³ In that letter, Ms. Richard expressed concern that Holtec has characterized the site of its proposed facility as under Holtec's control. In fact, Ms. Richard stated, although Holtec may control the surface estate, "the State of New Mexico, through the New Mexico State Land Office, owns the mineral estate."¹⁴ She asserted that "in its filings with the NRC, Holtec appears to have

⁸ Motion of Fasken to Dismiss Licensing Proceedings for HI-STORE Consolidated Interim Storage Facility and WCS Consolidated Interim Storage Facility at 1-2 (Sept. 14, 2018).

⁹ Order of the Secretary at 2-3 (Oct. 29, 2018).

¹⁰ LBP-19-4, 89 NRC at 354.

¹¹ Fasken Motion for Leave to File a New Contention (Aug. 1, 2019) [hereinafter Initial Motion for Leave].

¹² *Id.* at 3.

¹³ See Initial Motion for Leave, Ex. 5 (Letter from Stephanie Garcia Richard, Commissioner of Public Lands, State of New Mexico, to Krishna P. Singh, Holtec President and CEO (June 19, 2019) (ADAMS Accession No. ML19183A429).

¹⁴ *Id.* at 2.

entirely disregarded the State Land Office's authority over the Site's mineral estate."¹⁵

As both the NRC Staff and Holtec pointed out in their oppositions,¹⁶ Fasken failed to move to reopen the record of this now-closed proceeding. Apparently in response to their arguments, Fasken filed such a motion belatedly.¹⁷ Nine days later, however, without explanation Fasken withdrew its motion to reopen the closed record.¹⁸

As directed by the Commission,¹⁹ we addressed Fasken Contention 2 in LBP-20-6.²⁰ As more fully explained in that decision, we denied Fasken's motion for leave to file because (1) having withdrawn its motion to reopen, Fasken failed to address the requirements for reopening a closed record; and (2) Fasken failed to show that Contention 2 satisfied even the less stringent requirements for filing out of time if the record had remained open.²¹ Because Holtec's Environmental Report and correspondence with the NRC had previously acknowledged the State of New Mexico's authority over mineral rights at the proposed site, we concluded that Fasken Contention 2 was based not on new information, but rather "on information that was available in Holtec's application materials long before Fasken moved for leave to file it."²²

III. FASKEN AMENDED CONTENTION 2

Fasken initiated its efforts to proffer Fasken Amended Contention 2 while petitioners' (including Fasken's) appeals of LBP-19-4 were still pending before the Commission. On March 20, 2020, the NRC announced publication of the NRC staff's draft Environmental Impact Statement (DEIS) concerning Holtec's proposed interim storage facility.²³ On April 7, 2020, at Fasken's request, the

¹⁵ *Id.*

¹⁶ Holtec's Answer Opposing Fasken's Late-Filed Motion for Leave to File a New Contention at 11-13 (Aug. 26, 2019); NRC Staff Answer in Opposition to Fasken's Motion to File a New Contention at 9-10 (Aug. 26, 2019).

¹⁷ Fasken Motion for Leave to Reopen and Incorporate Contention Filed August 1, 2019 (Sept. 3, 2019).

¹⁸ Fasken's Withdrawal of Their "Motion for Leave to Reopen and Incorporate Contention Filed August 1, 2019" (Sept. 12, 2019).

¹⁹ CLI-20-4, 91 NRC at 172-73, 211.

²⁰ LBP-20-6, 91 NRC at 254.

²¹ *Id.* at 255.

²² *Id.* at 256.

²³ See Holtec International HI-STORE Consolidated Interim Storage Facility Project, 85 Fed. Reg. 16,150 (Mar. 20, 2020); see also Office of Nuclear Material Safety and Safeguards (NMSS),

(Continued)

Secretary extended the deadline for filing new or amended contentions based on the DEIS until May 11, 2020.²⁴

Hence on May 11, 2020 — some twenty months after the September 2018 deadline for submitting hearing requests and contentions challenging Holtec’s license application²⁵ — Fasken filed a second motion to reopen the record, together with a motion for leave to file Fasken Amended Contention 2.²⁶ Although purporting to challenge statements “made for the very first time in the recent Holtec DEIS,”²⁷ Fasken Amended Contention 2 also repeatedly challenges statements in “Holtec’s application.” Indeed, Fasken Amended Contention 2 states:

Holtec’s application fails to adequately, accurately, completely and consistently describe the control of subsurface mineral rights and oil and gas and mineral extraction operations beneath and in the vicinity of the proposed Holtec [Consolidated Interim Storage] Facility site, which precludes a proper analysis under NEPA and further nullifies Holtec’s ability to satisfy NRC’s siting evaluation factors now and anticipated in the future and is in further violation of NRC regulations.²⁸

The Board heard oral argument on Fasken’s motions from each participant’s counsel, by telephone, on August 5, 2020.²⁹

IV. MOTION TO REOPEN THE RECORD

To reopen a closed record, a petitioner must file a motion that demonstrates (1) its new contention is timely; (2) the contention addresses a significant safety

NUREG-2237, Environmental Impact Statement for the Holtec International’s License Application for Consolidated Interim Storage Facility for Spent Nuclear Fuel and High Level Waste, Draft Report for Comment (Mar. 2020) (ADAMS Accession No. ML20069G420) [hereinafter DEIS].

²⁴ Order (Granting Extension of Time) (Apr. 7, 2020) [hereinafter Commission Extension].

²⁵ See Holtec’s HI-STORE Consolidated Interim Storage Facility for Interim Storage of Spent Nuclear Fuel, 83 Fed. Reg. 32,919, 32,919 (July 16, 2018).

²⁶ Motion to Reopen; Amended Motion for Leave.

²⁷ Amended Motion for Leave at 11.

²⁸ *Id.* at 10-11 (emphasis added).

²⁹ Licensing Board Order (Scheduling Oral Argument) (June 25, 2020). During the argument, Fasken’s counsel asked whether its expert geologist, Mr. Pollock, might respond to some of the Board’s questions directly. Tr. at 456. The Board has considered Mr. Pollock’s Amended Declaration, which was submitted as Exhibit 4 to Fasken’s Amended Motion for Leave. However, the Board declined (without timely objection from Fasken) to permit Mr. Pollock to present information orally. Tr. at 456-57, 470. Licensing boards may exercise broad discretion to limit oral argument or to allow it at all. See 10 C.F.R. § 2.331. Generally, we do not hear from a petitioner’s experts at oral argument on whether the petitioner’s written pleadings are sufficient to merit an evidentiary hearing at which the experts would then testify.

or environmental issue; and (3) a materially different result would be or would have been likely had the newly proffered evidence been considered initially.³⁰ The petitioner must attach an affidavit from “experts in the disciplines appropriate to the issues raised” or from “competent individuals with knowledge of the facts alleged” that separately addresses each of these criteria, explaining how each criterion has been satisfied.³¹ Moreover, the evidence in any such affidavit must meet the admissibility standards in 10 C.F.R. § 2.337.³² In other words, the affidavit must be of such quality as to be admissible into evidence at an evidentiary hearing.

The Commission considers “reopening the record for any reason to be ‘an extraordinary’ action,”³³ and places “an intentionally heavy burden on parties seeking to reopen the record.”³⁴ The Commission’s rules mandate that “the standard for admitting a new contention after the record is closed is higher than for an ordinary late-filed contention.”³⁵ Fasken fails to carry this intentionally heavy burden.

Both Holtec and the NRC Staff assert that Fasken has not even satisfied a threshold requirement. They claim that Fasken’s motion to reopen the record is not accompanied by an appropriate affidavit.³⁶

To support its motion, Fasken attaches an affidavit by its lawyer, Mr. Kanner.³⁷ But 10 C.F.R. § 2.326(b) does not generally call for the affidavit of a petitioner’s lawyer. On the contrary, when the rules for reopening a closed record were proposed, commentators expressed concern that “affidavits of lawyers repeating allegations of undisclosed principals should not be sufficient.”³⁸ In response, the Commission codified the requirement that the supporting affidavit

³⁰ 10 C.F.R. § 2.326(a)(1)-(3). An “exceptionally grave” issue may be considered in the discretion of the presiding officer even if untimely presented. *Id.* § 2.326(a)(1).

³¹ *Id.* § 2.326(b).

³² *Id.*

³³ *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), CLI-15-19, 82 NRC 151, 156 (2015).

³⁴ *Id.* at 155.

³⁵ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-05-12, 61 NRC 345, 350 (2005).

³⁶ *See* Holtec Answer at 13-15; NRC Staff Answer at 26-27.

³⁷ Affidavit of Allan Kanner (May 11, 2020) [hereinafter Kanner Affidavit]. Although the Kanner Affidavit does not reflect that it was executed under oath before a notary public, Mr. Kanner represented at oral argument (Tr. at 432-33) that such formality is not required for a lawyer’s affidavit under Louisiana law. No party has challenged the sufficiency of Mr. Kanner’s affidavit on this ground.

³⁸ Final Rule, Criteria for Reopening Records in Formal Licensing Proceedings, 51 Fed. Reg. 19,535, 19,537 (May 30, 1986).

must be from either “competent individuals with knowledge of the facts alleged” or from “experts in the disciplines appropriate to the issues raised.”³⁹

Although Mr. Kanner’s affidavit states that he reviewed the sworn declarations of other individuals,⁴⁰ he claims no technical expertise. For the most part, Mr. Kanner also claims no personal knowledge, relying on the knowledge of others for criticisms of the DEIS and for factual support for his conclusion that information in the DEIS “implicates significant environmental and safety issues.”⁴¹ We do not question whether Mr. Kanner is a qualified lawyer. But, because Mr. Kanner claims neither technical expertise nor personal knowledge of critical facts, we likely would not admit most or all of Mr. Kanner’s affidavit as evidence at an evidentiary hearing under 10 C.F.R. § 2.337. It is questionable, therefore, whether Mr. Kanner’s affidavit can properly support a motion to reopen the record in accordance with 10 C.F.R. § 2.326(b).

We need not rely on this possible pleading defect to deny Fasken’s motion, however, because Fasken fails to carry the heavy burden to reopen a closed record for more substantial reasons.

Most importantly, Fasken’s motion is not timely. Fasken submitted its amended contention challenging the DEIS within the extended deadline permitted by the Commission.⁴² But Fasken Amended Contention 2 and Fasken’s associated motion to reopen the record are based on statements in the DEIS that do not differ materially from information that was publicly available in Holtec’s application materials much earlier.⁴³ This is fatal to Fasken’s motion.

Under 10 C.F.R. § 2.309(f)(2), “[o]n issues arising under the National Environmental Policy Act, participants shall file contentions based on the applicant’s environmental report.”⁴⁴ Petitioners such as Fasken therefore have “an ironclad obligation”⁴⁵ to examine the relevant application documents to uncover information that might prompt a contention.

³⁹ *Id.*

⁴⁰ Kanner Affidavit at 6 (citing Amended Motion for Leave, Ex. 1 (Declaration of Tommy Taylor) & Ex. 4 (Amended Declaration of Stonnie Pollock) (May 11, 2020) [hereinafter Pollock Declaration]).

⁴¹ Kanner Affidavit at 7.

⁴² See Commission Extension at 1.

⁴³ In Exhibit 2 to its Amended Motion for Leave, Fasken lists allegedly new statements in the DEIS, but fails to show that they differ significantly from previously available information or that any difference is material to Fasken Amended Contention 2. See Amended Motion for Leave, Ex. 2, (Facts Petitioners Intend to Reply on to Support New and Amended Contentions) at 1-3 (May 11, 2020).

⁴⁴ 10 C.F.R. § 2.309(f)(2).

⁴⁵ *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 338 (1999).

Under 10 C.F.R. § 2.309(f)(2), the NRC expects a petitioner “to evaluate all available information at the earliest possible time to identify the potential basis for contentions and preserve their admissibility.”⁴⁶ Fasken may not seize upon publication of the NRC staff’s DEIS in March 2020 as an excuse to raise challenges to Holtec’s license application that Fasken could have timely raised in September 2018, but did not.

Fasken’s fundamental argument is that statements in the DEIS “continue to misrepresent” information that Fasken claims was misrepresented or wrongfully omitted from Holtec’s Environmental Report and other application documents.⁴⁷ This includes, Fasken claims, information concerning “the control and ownership of subsurface mineral rights, the status of [petroleum] industry operations, and geologic characteristics in the region.”⁴⁸

Thus, Fasken describes Fasken Amended Contention 2 as challenging “material omissions, inadequacies and inconsistencies contained in *Holtec’s licensing application documents*.”⁴⁹ By its terms, Fasken Amended Contention 2 alleges deficiencies in “Holtec’s application” and does not even mention the DEIS.⁵⁰ Likewise, the supporting declaration of Fasken’s geologist, Mr. Pollock,⁵¹ repeatedly references “Holtec’s application,” but does not mention or directly address the DEIS.

Elsewhere, Fasken challenges the accuracy of statements “in Holtec’s application documents *and* the most recent Holtec DEIS.”⁵² Throughout its supporting discussion, Fasken confirms that Amended Contention 2 is intended to challenge “inconsistent statements in Holtec’s application,”⁵³ incorrect statements in “Holtec’s application documents,”⁵⁴ inadequacies in “[t]he Holtec application,”⁵⁵

⁴⁶ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-99-43, 50 NRC 306, 313 (1999) (citing *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1050 (1983)).

⁴⁷ Amended Motion for Leave at 11.

⁴⁸ *Id.*

⁴⁹ *Id.* at 1 (emphasis added).

⁵⁰ *Id.* at 10.

⁵¹ *Id.*, Ex. 4 (Pollock Declaration). Although Mr. Pollock’s declaration was neither executed under oath nor drafted strictly in compliance with 28 U.S.C. § 1746, absent objection the Board waived any technical deficiency and ruled Mr. Kanner’s offer to resubmit the declaration unnecessary. Tr. at 437.

⁵² Amended Motion for Leave at 13 (emphasis added).

⁵³ *Id.* at 18.

⁵⁴ *Id.* at 19.

⁵⁵ *Id.* at 25.

failures common to “[b]oth” Holtec’s Environmental Report and the DEIS,⁵⁶ and deficiencies in “Holtec’s application.”⁵⁷

But it is too late for Fasken to challenge anything in Holtec’s application that could have been challenged in September 2018, unless the challenge is premised on materially new information. Repetition in the DEIS of information similar to that in Holtec’s Environmental Report does not qualify. And, although Fasken makes general references to other “newly disclosed and highly pertinent information,”⁵⁸ neither Fasken’s motions nor its supporting affidavit and declarations tell us when Fasken first learned of any new information on which it relies.

The closest Fasken comes to dating any “new” information is to reference Ms. Richard’s June 19, 2019 letter, which Fasken claimed to supply new information sufficient to justify filing its original Contention 2 several weeks after this proceeding was closed. According to Fasken, “Petitioners’ original Contention No. 2 was timely,” and “[a]s such, it is permissible to incorporate the arguments and facts relied on in Contention No. 2” to justify the timeliness of Amended Contention 2.⁵⁹

Unfortunately for Fasken, it failed to anticipate our ruling in LBP-20-6. In LBP-20-6, we ruled that Fasken’s original Contention 2 was not timely because the information in Ms. Richard’s letter was available in Holtec’s application materials long before Fasken moved for leave to file it.⁶⁰ Moreover, in addition to the facts on which we relied in LBP-20-6, Holtec points out that Fasken’s vice president, Mr. Taylor (who also submitted a declaration supporting Fasken’s motion for leave to file Amended Contention 2⁶¹), wrote to the NRC nearly a year before Contention 2 was filed with the same information in Ms. Richard’s letter.⁶²

Fasken’s claims concerning the cumulative impact analysis in the DEIS exhibit a similar defect. Fasken states that the DEIS “recently concluded that the project would have a ‘small cumulative impact’ for geology and soils, which when combined with regional activities would result in an ‘overall MODERATE cumulative impact.’”⁶³ This conclusion, according to Fasken, represents “new and material information that is significantly different” from the conclusion in

⁵⁶ *Id.* at 26.

⁵⁷ *Id.* at 28.

⁵⁸ *Id.* at 1.

⁵⁹ Amended Motion for Leave at 11 n.39.

⁶⁰ LBP-20-6, 91 NRC at 255.

⁶¹ Amended Motion for Leave, Ex. 1 (Declaration of Tommy Taylor) (May 11, 2020).

⁶² See Letter from Tommy E. Taylor, Fasken Oil and Gas Development Director, to Michael Layton, Division of Spent Fuel Management, NRC Office of Nuclear Material Safety and Safeguards (NMSS) at 2-3 (July 30, 2018) (ADAMS Accession No. ML18219A710).

⁶³ Amended Motion for Leave at 12 & n.43 (citing DEIS at 5-10 to 5-11).

Holtec's Environmental Report that the cumulative impacts of its proposed facility on geology and soils would be "minimal."⁶⁴

Fasken does not show that the difference in language is material. On the contrary, Holtec and the NRC staff use "minimal" and "small" interchangeably. Nothing requires Holtec to use the same terminology as the NRC staff to describe potential environmental impacts.⁶⁵ In the DEIS, the NRC staff concluded that the "small" (i.e., "minimal") incremental impact of Holtec's proposed facility on geology and soils, when added to the overall "moderate" impacts from all other past, present, and reasonably foreseeable actions within the region, does not change the overall "moderate" cumulative impacts determination for geology and soils.⁶⁶ In other words, the expected incremental impact of the proposed facility does not alter, in any way, the NRC staff's overall cumulative impacts determination for geology and soils within the region analyzed.

Moreover, it surely does not appear that any difference could be material to Fasken, which had the opportunity to challenge Holtec's characterization of "minimal" impacts in September 2018, but did not. Moreover, Fasken does not identify any new facts that are presented in, or support the conclusions in, the NRC staff's DEIS. The dispositive issue is not whether there are differences between Holtec's Environmental Report and the DEIS, but whether Fasken Amended Contention 2 is "*based on new facts* not previously available."⁶⁷

Another example is Fasken's claim that a six-mile radius for assessing the cumulative impacts on land use was "applied for the first time in the Holtec DEIS."⁶⁸ However, Holtec's Environmental Report uses a six-mile radius to describe land uses surrounding its proposed facility⁶⁹ and a larger, 50-mile radius for its cumulative impact analysis.⁷⁰ The information on which the DEIS relies is merely a subset of the information in Holtec's Environmental Report. Fasken identifies no regulation that prevents the NRC staff from using only some of the information in Holtec's Environmental Report. Nor has Fasken identified any new information, much less new information that is materially different.

Likewise, Fasken fails to show that its claims concerning the DEIS's description of oil and gas operations in the vicinity of the proposed facility are

⁶⁴ *Id.* (citing Holtec International's Environmental Report on the HI-STORE CIS Facility at 5-3 (rev. 6 May 2019) (ADAMS Accession No. ML19163A146) [hereinafter Environmental Report]).

⁶⁵ See NMSS, NUREG-1748, Environmental Review Guidance for Licensing Actions Associated with NMSS Programs, Final Report at 4-14 (Aug. 2003) (ADAMS Accession No. ML032450279).

⁶⁶ DEIS at 5-11.

⁶⁷ *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-10, 75 NRC 479, 493 n.70 (2012) (emphasis in original).

⁶⁸ Amended Motion for Leave at 13 & n.44 (citing DEIS at 5-17).

⁶⁹ Environmental Report at 3-16.

⁷⁰ *Id.* at 5-1.

based on new or materially different information. The description in the DEIS of currently known operations is based on information cited in Holtec's Environmental Report, including information from a 2007 report by the Eddy-Lea Energy Alliance, LLC (ELEA).⁷¹ Fasken does not demonstrate how any other source cited in the DEIS is inconsistent.

Fasken compares statements in the DEIS, indicating that oil and gas extraction will occur under the proposed facility at depths greater than 3,050 feet, to Holtec's statements indicating that these activities will occur at depths greater than 5,000 feet.⁷² But Fasken does not demonstrate how this difference is material to the impacts analysis in the DEIS. And again, Fasken does not explain how the difference is material to Fasken. If Fasken — which has “been drilling and extracting oil in the region for over 80 years”⁷³ — now asserts that petroleum activities might occur even closer to the surface than 3,050 feet,⁷⁴ why did it not timely challenge Holtec's initial representation they would occur no closer to the surface than 5,000 feet?

Mr. Pollock's supporting declaration is nearly identical to a declaration he submitted in August 2019⁷⁵ — setting forth information that obviously did not first come to light in the NRC staff's March 2020 DEIS. Two points have been added. First, Mr. Pollock now speculates that drilling at depths shallower than 3050 feet, beneath and surrounding Holtec's proposed site, is “a real possibility.”⁷⁶ Second, Mr. Pollock now speculates that revisiting old wells, beneath and around Holtec's proposed site, is likewise “a real possibility.”⁷⁷

Mr. Pollock does not assert, however, that he was unaware of these possibilities before March 2020. Nor would it appear he could credibly do so. Mr. Pollock is Fasken's senior geologist, and has worked for Fasken since 2003.⁷⁸ He recently served as president of the West Texas Geological Society.⁷⁹ He was described at oral argument by Fasken's counsel — with perhaps little or no hyperbole — as being “more knowledgeable about this area than any other human being.”⁸⁰ Not surprisingly, Mr. Pollock does not claim newly acquired knowledge about drilling in the Permian Basin.

⁷¹ *Id.* at 3-2 to 3-3.

⁷² Amended Motion for Leave at 17-18.

⁷³ *Id.* at 2.

⁷⁴ *Id.* at 18.

⁷⁵ *Compare* Pollock Declaration *with* Initial Motion for Leave, Ex. 1 (Declaration of Stonnie Pollock) (July 30, 2019).

⁷⁶ Pollock Declaration at 2.

⁷⁷ *Id.* at 3.

⁷⁸ *Id.* at 6.

⁷⁹ *Id.*

⁸⁰ Tr. at 437.

Nor, apart from a brief reference to the region's being "historically known for surface subsidence"⁸¹ due to potash extraction, does Mr. Pollock explain the significance of oil or gas drilling at any particular depth. He certainly does not claim that drilling at any specific depth is potentially unsafe, or challenge Holtec's ultimate conclusion that drilling will not take place at depths that raise a subsidence issue.

Fasken does claim that the DEIS discusses "for the very first time" an active oil and gas well near the site that operates at a minimum level of production to maintain mineral rights.⁸² But Holtec disclosed exactly that information in its Safety Analysis Report (SAR). SAR section 2.2.2 states: "One active oil/gas well on the southwest portion of Section 13 operates at a minimum production to maintain mineral rights."⁸³

Simply put, Fasken never demonstrates that any information supporting Amended Contention 2 is materially new or, if new, when Fasken first became aware of it. Perhaps sensing the difficulty of arguing that its claims are not too late, at oral argument Fasken sought to invoke — admittedly for the first time⁸⁴ — the Board's discretion under 10 C.F.R. § 2.326(a)(1) to consider an "exceptionally grave" issue even if untimely presented.⁸⁵

We decline to do so on multiple grounds. First, because we do not entertain arguments that are advanced for the first time in a reply brief,⁸⁶ we surely should not consider positions that are advanced for the first time at oral argument. Second, the "exceptionally grave issue" exception is a narrow one, to be granted rarely and only in truly exceptional circumstances.⁸⁷ As explained *infra*, Fasken fails to proffer an admissible contention, much less one that raises an exceptionally grave issue. Third, insofar as 10 C.F.R. § 2.326(a)(1) permits the Board to exercise discretion, we exercise it to deny Fasken's request in the circumstances presented.

⁸¹ Pollock Declaration at 2.

⁸² Amended Motion for Leave at 18-19 (citing DEIS at 3-7).

⁸³ See Holtec's HI-STORE CIS Facility Safety Analysis Report at 2-44 (rev. 0F Jan. 2019) (ADAMS Accession No. ML19052A379).

⁸⁴ Tr. at 423.

⁸⁵ *Id.* at 421-23.

⁸⁶ See *Nuclear Management Co.* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 732 (2006). Allowing new claims in a reply would defeat the contention-filing deadline and unfairly deprive other participants an opportunity to rebut the new claims. *Exelon Generation Co.* (Dresden Nuclear Power Station, Units 2 and 3), LBP-14-4, 79 NRC 319, 330 (2014) ("It is well established in NRC proceedings that a reply cannot expand the scope of the arguments set forth in the original hearing request") (quoting *Palisades*, CLI-06-17, 63 NRC at 732).

⁸⁷ See, e.g., *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-21, 76 NRC 491, 500-01 (2012).

Despite Fasken's demonstrated familiarity with drilling in the relevant region, it did not proffer a timely contention when petitions were due. Unlike several other petitioners,⁸⁸ Fasken never sought to proffer new or amended contentions while this adjudication was pending. When, after the proceeding had been terminated, Fasken for the first time proffered a contention concerning drilling, it declined to move to reopen the closed record. Now, having admittedly failed to make the argument in its pleadings, Fasken tries to invoke the "exceptionally grave issue" exception to excuse its lateness.

The Board's rejecting Fasken's argument does not mean that the NRC staff will not independently consider safety issues as it completes its evaluation of Holtec's license application. The NRC staff's requests for additional information (RAI's) from Holtec, discussed *infra*, demonstrate that the staff is doing exactly that. But Fasken has not demonstrated that it is entitled to a separate evidentiary hearing on any of the issues it has raised.

For the foregoing reasons alone, we must deny Fasken's motion to reopen the record. Moreover, we conclude that Fasken's motion also does not address a significant safety or environmental issue. As explained *infra*, in our discussion of contention admissibility, Fasken Amended Contention 2 does not raise a genuine dispute on *any* material issue of fact or law. Thus, these same claims cannot possibly meet the higher standard of presenting a *significant* issue that must be adjudicated by reopening this closed proceeding.

Finally, Fasken's motion to reopen the record also does not demonstrate that, if it were granted, a materially different result would be likely. Because Fasken Amended Contention 2 is not admissible, as explained *infra*, no materially different result would have occurred had it been considered initially.

V. MOTION FOR LEAVE TO FILE CONTENTION OUT OF TIME

Even if we were to allow Fasken to reopen the record at this late date, we would necessarily deny its motion for leave to file Amended Contention 2 out of time in any event. Fasken's more recent motion fails for the same reasons that Fasken's original motion to file Contention 2 failed to demonstrate good cause for filing out of time. Additionally, we conclude that Fasken Amended Contention 2 is not admissible.

Again, we agree that Fasken Amended Contention 2 was timely submitted in the sense that it was filed within the timeframe prescribed by the Secretary for contentions challenging the DEIS. But the Secretary's extension did not

⁸⁸ See, e.g., Motion by [Joint Petitioners] to File a New Contention (Jan. 17, 2019); Sierra Club's Motion to File New Late-Filed Contentions 27, 28, and 29 (Feb. 25, 2019); Sierra Club's Motion to File a New Late-Filed Contention (Oct. 23, 2019).

alter Fasken's obligation to show that Amended Contention 2 is based on new, previously unavailable information that differs materially from information that was previously available. For all the reasons addressed *supra*, Fasken makes no such showing.

VI. ADMISSIBILITY OF FASKEN AMENDED CONTENTION 2

Fasken's failure to satisfy either the requirements for reopening a closed record or for proffering a contention out of time, without more, necessarily requires us to reject Fasken Amended Contention 2.⁸⁹ In addition, the contention does not satisfy the admissibility requirements in 10 C.F.R. § 2.309(f)(1).⁹⁰

Although the NRC's contention admissibility requirements are not intended to be a "fortress to deny intervention,"⁹¹ nonetheless they are "strict by design."⁹² They result from the Commission's "conscious effort to raise the threshold bar for an admissible contention."⁹³ Failure to satisfy any one of the NRC's pleading requirements requires a licensing board to reject a contention.⁹⁴ Rather than expend agency time and resources on litigating vague and unsupported claims, the Commission strengthened the contention admissibility requirements to provide evidentiary hearings only to those who "proffer at least some minimal factual and legal foundation in support of their contentions."⁹⁵

Therefore, although a petitioner need not prove its contention at this stage, mere notice pleading of proffered contentions is insufficient.⁹⁶ The NRC requires a petitioner to read the pertinent portions of the license application or amendment request, state the applicant's or licensee's position and the petitioner's opposing view, and explain why it disagrees with the applicant or licensee.⁹⁷

Among other things, an admissible contention must (1) demonstrate that the issue raised in the contention is material to the findings the NRC must make

⁸⁹ See *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-09-5, 69 NRC 115, 124 (2009).

⁹⁰ 10 C.F.R. § 2.309(f)(1)(i)-(vi).

⁹¹ *Oconee*, CLI-99-11, 49 NRC at 335.

⁹² *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001).

⁹³ *Oconee*, CLI-99-11, 49 NRC at 334.

⁹⁴ See *Entergy Nuclear Operations, Inc.* (Indian Point, Unit 2), CLI-16-5, 83 NRC 131, 136 (2016).

⁹⁵ *Oconee*, CLI-99-11, 49 NRC at 334.

⁹⁶ *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

⁹⁷ Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170-71 (Aug. 11, 1989).

to support the action involved in the proceeding;⁹⁸ and (2) provide sufficient information to show that a genuine dispute exists with the applicant or licensee on a material issue of law or fact.⁹⁹ This must include references to specific portions of the disputed document, as well as to the supporting reasons for each dispute.¹⁰⁰ Likewise, if a petitioner claims that a document fails to contain relevant information that is legally required, it must identify each such failure and the reason why the missing information is required.¹⁰¹

The claims in Fasken Amended Contention 2 do not satisfy these requirements, often for reasons similar to those previously discussed in connection with their untimeliness.

First, Fasken claims that the difference in phrasing between Holtec's application and the DEIS creates a "seriously distorted and materially different picture."¹⁰² Fasken states that, while Holtec's Environmental Report asserted there would be "minimal potential" for any cumulative impact on geology and soils at the site, the DEIS concludes that Holtec's facility would have a "small" incremental impact that, "when added to the MODERATE impacts from other past, present, and reasonably foreseeable future actions [would] result in an overall MODERATE cumulative impact."¹⁰³

Fasken claims this difference "constitutes new and material information that is significantly different."¹⁰⁴ As explained *supra*, however, Fasken fails to show that any difference in terminology represents a material difference between Holtec's and the NRC staff's assessment of the expected incremental impact of the proposed facility on geology and soils.

Moreover, Fasken does not specify what aspect of the DEIS's conclusions it disputes. Simply pointing to a difference between Holtec's Environmental Report and the DEIS, without more, does not raise a genuine dispute on a material issue as required by 10 C.F.R. § 2.309(f)(1)(iv) and (vi). A significant difference may give rise to an opportunity to proffer a new contention, but it does not relieve a petitioner of the burden to demonstrate that the contention satisfies the requirements of 10 C.F.R. § 2.309(f)(1).

Second, Fasken claims there are "glaring omissions, inaccuracies, and inconsistencies" in the DEIS regarding ownership of mineral rights under the site.¹⁰⁵ It asserts that these alleged misrepresentations implicate "serious and important

⁹⁸ 10 C.F.R. § 2.309(f)(1)(iv).

⁹⁹ *Id.* § 2.309(f)(1)(vi).

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² Amended Motion for Leave at 12.

¹⁰³ *Id.* (quoting DEIS at 5-11).

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 7.

safety and environmental issues.”¹⁰⁶ Specifically, Fasken claims that, “contrary to statements in . . . the most recent Holtec DEIS,” Holtec “does not own the mineral rights below the site and does not have the ability to control extraction activities adjacent to the site.”¹⁰⁷

Fasken misreads the DEIS. In actuality, the DEIS acknowledges (as did Holtec’s Environmental Report) that the State of New Mexico and the Bureau of Land Management (BLM) own the subsurface property rights within and surrounding the site of Holtec’s proposed project. For example, section 3.2.1 of the DEIS states: “The State of New Mexico owns subsurface property rights within the proposed [storage facility] project area, and BLM or the State of New Mexico owns subsurface property rights on privately-owned land surrounding the proposed [storage facility] project area (DEIS Figure 3.2-2).”¹⁰⁸ Fasken therefore fails to raise a genuine dispute, as required by 10 C.F.R. § 2.309(f)(1)(vi).

Moreover, Fasken does not explain how ownership of subsurface mineral rights and control of subsurface activities would affect, much less contradict, the NRC staff’s environmental analysis presented in the DEIS. Because Fasken does not show how these matters are material to the NRC staff’s environmental review, its claims also fail to raise an issue that is material to the findings the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv).

Third, Fasken claims that using a radius greater than six miles to evaluate land use is necessary to “truly evaluate cumulative impacts” associated with Holtec’s proposed facility.¹⁰⁹ The Commission instructs us, however, that contentions must identify a deficiency in the NRC staff’s environmental analysis and may not merely offer “suggestions” of other ways the analysis could have been done.¹¹⁰ The National Environmental Policy Act (NEPA) “gives agencies broad discretion to keep their inquiries within appropriate and manageable boundaries.”¹¹¹

In this instance, the NRC staff applied the guidance in NUREG-1748 and determined that a six-mile radius is reasonable “because of the small footprint, low profile, and passive nature of the project.”¹¹² Although Fasken may favor an expanded analysis, it does not explain how the NRC staff’s approach violates the requirements of NEPA. Fasken therefore fails to raise a genuine dispute, as required by 10 C.F.R. § 2.309(f)(1)(vi).

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 13.

¹⁰⁸ DEIS at 3-2; *see also* DEIS at 4-3, 4-4.

¹⁰⁹ Amended Motion for Leave at 15-16.

¹¹⁰ *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 323 (2012).

¹¹¹ *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 103 (1998).

¹¹² DEIS at 3-1.

Fourth, Fasken claims that the DEIS contains misleading or inaccurate information on the scope of oil and gas operations in the region.¹¹³ In support, Fasken describes the number and types of wells in the region.¹¹⁴ Fasken does not, however, identify any statement in the DEIS that is inaccurate or misleading, or explain how any alleged inaccuracies might affect a material issue.

In further support of its claim that the description of drilling operations is inaccurate, Fasken states that the DEIS “defies all logic” when it “bizarrely and unjustifiably” relies on a 1978 study to reach conclusions about the depth of oil and gas production zones, given available “advancements in drilling technologies.”¹¹⁵ However, Fasken does not explain why advancements in drilling technologies impact the 1978 study’s conclusions about the depths of oil and gas deposits in the vicinity of the site. And Fasken simply ignores the fact that the DEIS did not base its conclusions solely on the 1978 study, but also relied on the 2007 ELEA study.¹¹⁶

Fasken must show some reason why “resolution of the dispute would make a difference in the outcome of the licensing proceeding.”¹¹⁷ For example, as discussed *supra*, Fasken’s petroleum geologist, Mr. Pollock, asserts that recent technological advances make drilling at shallower depths and revisiting existing wells a “real possibility.”¹¹⁸ But Fasken does not explain how the existence of wells at any depth is material to the NRC staff’s assessment of environmental and cumulative impacts. Therefore, Fasken does not satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(iv) and (vi).

Fifth, citing a March 26, 2020 5.0 magnitude earthquake that took place approximately 50 miles from Holtec’s proposed facility, Fasken claims it is “unclear” if adequate consideration has been given to the risks of seismicity.¹¹⁹ But Fasken does not specify whether it is challenging the NRC staff’s NEPA assessment or Holtec’s safety analysis. In any event, the DEIS discusses seismicity, and provides a history of earthquakes in the area of the proposed site.¹²⁰

¹¹³ Amended Motion for Leave at 15.

¹¹⁴ *Id.*

¹¹⁵ *Id.* at 16, 19.

¹¹⁶ DEIS at 4-4, 4-5 (“[A]ll oil and gas production zones in the area of the proposed [consolidated interim storage facility] occur beneath the Salado Formation at depths greater than 914 m [3,000 ft] [O]il and gas exploration targets within and surrounding the proposed project area range from relatively shallow oil and gas at approximately 930 to 1,524 m [3,050 to 5,000 ft] in upper to middle Permian formations to deep gas targets in middle Paleozoic formations in excess of 4,877 m [16,000 ft] deep (ELEA, 2007)”).

¹¹⁷ Final Rule, Rules of Practice of Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989). *See also* 10 C.F.R. § 2.309(f)(1).

¹¹⁸ Amended Motion for Leave at 18; *see* Pollock Declaration at 2-3.

¹¹⁹ Amended Motion for Leave at 27.

¹²⁰ DEIS at 3.4.4.

And Holtec's SAR Section 2.6.2 contains an analysis for the 10,000-year return earthquake, including ground acceleration. Fasken does not acknowledge or address either of these discussions. Accordingly, Fasken fails to demonstrate a genuine dispute, as required by 10 C.F.R. § 2.309(f)(1)(vi).

Finally, as another basis for Amended Contention 2, Fasken points out that Holtec has not yet responded to various RAIs from the NRC staff concerning regional drilling activities, orphaned and abandoned wells, potash mining, and seismicity.¹²¹ As the Commission instructs, however, "[p]etitioners must do more than rest on the mere existence of RAIs as a basis for their contention."¹²² This is because the issuance of RAIs alone does not establish deficiencies in the application or that the staff will find any applicant responses unsatisfactory.¹²³

Fasken claims that the DEIS "allegedly relied" on information that Holtec has yet to provide in response to outstanding RAIs and that the NRC staff "cannot feasibly conduct an independent review and analysis without considering Holtec's RAI responses."¹²⁴ But Fasken does not identify any section of the DEIS that relies on information that may be provided by Holtec's responses to outstanding RAIs. Moreover, the NRC Staff represents that all pending RAIs cited by Fasken pertain to the staff's safety review.¹²⁵ With no showing of how the DEIS is deficient, Fasken fails to raise a genuine dispute, as required by 10 C.F.R. § 2.309(f)(1)(vi).

Fasken Amended Contention 2 is not admitted.

VII. ORDER

For the reasons stated:

- A. Fasken's motion to reopen the record is *denied*.
- B. Fasken's motion for leave to file its Amended Contention 2 is *denied*.
- C. Fasken Amended Contention 2 is *not admitted*.
- D. No contention having been admitted, and no proffered contention pending, this adjudicatory proceeding remains *terminated*.

¹²¹ Amended Motion for Leave at 20.

¹²² *PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 and 2), CLI-15-8, 81 NRC 500, 506 n.47 (2015) (quoting *Oconee*, CLI-99-11, 49 NRC at 336).

¹²³ *Id.*

¹²⁴ Amended Motion for Leave at 21.

¹²⁵ NRC Staff Answer at 22.

It is so ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Paul S. Ryerson, Chairman
ADMINISTRATIVE JUDGE

Nicholas G. Trikouros
ADMINISTRATIVE JUDGE

Dr. Gary S. Arnold
ADMINISTRATIVE JUDGE

Rockville, Maryland
September 3, 2020

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

Docket No. 40-8943-OLA

CROW BUTTE RESOURCES, INC.
(In Situ Leach Uranium Recovery
Facility)

October 8, 2020

CONTENTIONS, TIMELINESS

Standards governing the timeliness of new or amended contentions are applied on a case-specific basis.

CONTENTIONS, TIMELINESS

The Board did not err at law or abuse its discretion in admitting a contention based on the Staff's draft environmental assessment. The Board found that it was not clear that a "draft cultural resources assessment," posted on the agency website prior to release of the environmental assessment, constituted the Staff's environmental analysis relating to cultural resources. Moreover, both a prior Commission decision and Board decisions created the expectation that the time for filing a cultural resources contention was following publication of the draft environmental assessment.

PETITIONS FOR REVIEW

Petitioners did not show that the Board's factual findings were not even plausible in light of the whole record.

MEMORANDUM AND ORDER

This proceeding stems from challenges to the Crow Butte Resources, Inc. application to renew its source materials license for an *in situ* leach uranium recovery facility located near Crawford, Nebraska. Following an evidentiary hearing on admitted contentions, the Atomic Safety and Licensing Board issued a Partial Initial Decision addressing Contention 1 (Consultation and Tribal Cultural Properties) and related procedural matters.¹ In LBP-16-7, the Board resolved Contention 1 in part in favor of the two intervenors, the Oglala Sioux Tribe and Consolidated Intervenors (together Intervenors). The Board found that the NRC Staff did not comply with certain obligations under the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA).² More specifically, the Board concluded that the Staff neither “satisfied NHPA’s requirement to identify, assess, and . . . attempt to mitigate impacts on [Traditional Cultural Properties (TCPs)] within the license area, nor NEPA’s requirement to take a hard look at cultural resources within the license area.”³

Crow Butte seeks review of LBP-16-7.⁴ Crow Butte additionally seeks review of an earlier Board decision, LBP-15-11, insofar as that decision admitted Contention 1 for hearing.⁵ For the reasons outlined below, we decline to take review of the challenged decisions.

I. INTRODUCTION

Crow Butte raises two primary claims on appeal. First, Crow Butte argues that the Board erred in finding Contention 1 timely and therefore should not have admitted the contention for hearing.⁶ Second, Crow Butte claims that in resolving Contention 1 on the merits the Board “misapplied Commission precedent and ignored NEPA’s ‘rule of reason’” standard.⁷ Crow Butte argues that “contrary to the Licensing Board’s decision, the Staff fully complied with the [NHPA] and NEPA.”⁸ The Intervenors oppose Crow Butte’s petition for review.⁹

¹ LBP-16-7, 83 NRC 340 (2016).

² See *id.* at 411-12. The Board also partially ruled in favor of the Staff by concluding that the Staff had “met its Consultation Obligations under the NHPA.” See *id.* at 411.

³ *Id.* at 412.

⁴ Petition for Review of LBP-15-11 and LBP-16-7 (June 20, 2016) (Petition).

⁵ *Id.* at 1, 5-14; see also LBP-15-11, 81 NRC 401, 411-15 (2015).

⁶ Petition at 1.

⁷ *Id.*

⁸ *Id.* at 2.

⁹ See Consolidated Intervenors Answer to Petition for Review (July 14, 2016) (CI Answer); Oglala
(Continued)

At our discretion, we may grant a petition for review, giving due weight to the existence of a substantial question with respect to the following considerations:

- (i) A finding of material fact is clearly erroneous or in conflict with a finding as to the same fact in a different proceeding;
- (ii) A necessary legal conclusion is without governing precedent or is a departure from or contrary to established law;
- (iii) A substantial and important question of law, policy, or discretion has been raised;
- (iv) The conduct of the proceeding involved a prejudicial procedural error; or
- (v) Any other consideration which we may deem to be in the public interest.¹⁰

Regarding contention admissibility rulings, we “generally defer to the Board unless we find either an error of law or abuse of discretion.”¹¹ We “accord the Board’s judgment at the pleading stage substantial deference.”¹² We are highly deferential “particularly where much of [the] evidence is subject to interpretation.”¹³

II. BACKGROUND

Following a notice of opportunity for hearing, a Licensing Board was established in 2007.¹⁴ In its threshold ruling on intervention, the Board granted a

Sioux Tribe’s Answer to Crow Butte’s Petition for Review of the Board’s Contention 1 Decision (July 22, 2016) (Tribe’s Answer).

¹⁰ 10 C.F.R. § 2.341(b)(4)(i)-(v).

¹¹ *FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), CLI-12-8, 75 NRC 393, 397 (2012); *see also NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 307 (2012).

¹² *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-09-5, 69 NRC 115, 119 (2009); *see also, e.g., Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-08-17, 68 NRC 231, 234 (2008) (the “Commission gives substantial deference to Board conclusions on standing and contention admissibility unless the appeal points to an error of law or abuse of discretion”).

¹³ *In the Matter of David Geisen*, CLI-10-23, 72 NRC 210, 225 (2010).

¹⁴ Notice of Opportunity for Hearing, 73 Fed. Reg. 30,426 (May 27, 2008); Crow Butte Resources, Inc.; Establishment of Atomic Safety and Licensing Board, 73 Fed. Reg. 49,496 (Aug. 21, 2008). *See generally* Ex. CBR-011, Application for 2007 Renewal of USNRC Source Materials License SUA-1534, Crow Butte License Area (Nov. 27, 2007) (ADAMS accession no. (ML073480264) (package)).

hearing to the Tribe and the Consolidated Intervenor.¹⁵ On appeal, we affirmed the admission of four contentions for hearing.¹⁶

In LBP-16-7, the Board outlined the history of this proceeding, which we need not repeat here.¹⁷ We address today only the case history that bears on Crow Butte's petition for review. Because much of Crow Butte's petition challenges Contention 1's timeliness, we begin with brief summaries of Contention 1, the NRC's contention timeliness standards, and earlier procedural history that the Board found relevant in finding Contention 1 timely.

A. Contention 1

In October 2014, the Staff informed the Board and the parties that the Staff had issued its final Environmental Assessment (EA) for the Crow Butte license renewal application and that the EA had been made publicly available in ADAMS.¹⁸ The Board then promptly established a deadline for any new or amended contentions based on the Staff's EA.¹⁹ Both the Tribe and the Consolidated Intervenor filed various new and amended contentions challenging the final EA.²⁰

Relevant here, each of the Intervenor submitted nearly identical versions of two contentions (Contention 1 and Contention 2) challenging the EA's analysis

¹⁵ See LBP-08-24, 68 NRC 691, 698, 760 (2008). Consolidated Intervenor include the Western Nebraska Resources Council, Owe Aku/Bring Back the Way, Debra White Plume, Joe American Horse & Tiospaye, Loretta Afraid-of-Bear Cook & Tiwahe, Thomas Kanatakeniate Cook, and Beatrice Long Visitor Holy Dance (now deceased). Debra White Plume, Joe American Horse, and Loretta Afraid-of-Bear Cook also are members of the Oglala Sioux Tribe. See CI Answer at 1; see also LBP-08-24, 68 NRC at 698. The Board found that the Great Sioux Nation Treaty Council had no standing to participate as a party but could participate as an interested local governmental body. See *id.* at 698, 760; 10 C.F.R. § 2.315(c).

¹⁶ See CLI-09-9, 69 NRC 331 (2009).

¹⁷ See LBP-16-7, 83 NRC at 347-49.

¹⁸ See Letter from Marcia Simon, Counsel for NRC Staff, to the Administrative Judges (Oct. 27, 2014).

¹⁹ See Order (Scheduling Filing of New/Amended Contentions and Requesting Proposed Evidentiary Hearing Dates) (Oct. 28, 2014) (unpublished). Based on the public availability of the final EA, the Board set a thirty-day deadline, with contentions due on November 26, 2014. See *id.* at 2; Order (Granting Intervenor's Unopposed Motion for Extension of Time to File New/Amended Contentions) (Nov. 4, 2014) (unpublished) (extending the filing deadline to January 5, 2015).

²⁰ See The Oglala Sioux Tribe's Renewed and New Contentions Based on the Final Environmental Assessment (October 2014) (Jan. 5, 2015) (Tribe's New Contentions Based on EA); Consolidated Intervenor's New Contentions Based on the Final Environmental Assessment (October 2014) (Jan. 5, 2015) (CI's New Contentions Based on EA).

of historical and cultural resources.²¹ The contentions raised claims under the NHPA and NEPA, including arguments that the Staff failed to consult all interested tribes in a meaningful fashion as required by the NHPA, and that the EA lacked an adequate description of potential project impacts on archaeological, historical, and traditional cultural resources.

Citing the overlap in issues, the Board addressed the contentions together and found them admissible in part. In LBP-15-11, the Board described the contentions as raising the following admissible issues: (1) whether there was meaningful consultation with the Tribe pursuant to the National Historic Preservation Act; (2) whether a class III archaeological study represented a hard look under NEPA; and (3) whether cultural surveys performed and incorporated into the EA adequately supported the EA's conclusions.²² The Board consolidated the contentions into one, which it titled EA Contention 1: "Whether the cultural surveys performed and incorporated into the EA formed a sufficient basis on which to renew Crow Butte's permit."²³

B. Timeliness Standards for New and Amended Contentions

The NRC has strict contention admissibility standards, which include standards governing the timeliness of contentions. Our adjudicatory process requires petitioners to "carefully review" the application at issue "and raise all their distinct challenges at the outset, avoiding piecemeal supplemental contentions unless they could not have been raised earlier."²⁴ Our rules therefore specify that contentions submitted in initial petitions to intervene must be based on "documents or other information available at the time the petition is to be filed," such as the application, supporting safety analysis report, the environmental report, or other supporting document "filed by an applicant or licensee, or otherwise available to a petitioner."²⁵ For NEPA issues, contentions submitted in an intervention petition are based on the applicant's environmental report.²⁶

Following the intervention petition deadline, participants may still file new or amended environmental contentions challenging the Staff's environmental review documents, such as "a draft or final NRC environmental impact statement,

²¹ See Tribe's New Contentions Based on EA at 14-40; CI's New Contentions Based on EA at 4-28.

²² See LBP-15-11, 81 NRC at 415.

²³ *Id.* at 411, 451. Further references in this decision to "Contention 1" refer to this consolidated contention.

²⁴ See *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-10, 75 NRC 479, 482-83 (2012).

²⁵ 10 C.F.R. § 2.309(f)(2).

²⁶ *Id.*

environmental assessment, or any supplements to these documents,” *if* the timeliness requirements in 10 C.F.R. § 2.309(c) are met.²⁷ Under these requirements, new or amended contentions “will not be entertained” unless the presiding officer determines that there is good cause for the filing, which can be demonstrated if a contention is based on information that: (i) “was not previously available”; (ii) “is materially different from information previously available”; and (iii) “has been submitted in a timely fashion based on the availability of the subsequent information.”²⁸

C. Board’s Decision in LBP-15-11 and Related Early Case History

In LBP-15-11, the Board addressed the admissibility of the Intervenor’s proposed contentions challenging the EA. The Board described at length the timeliness rules.²⁹ Applying those rules, the Board went on to reject — strictly on timeliness grounds — two of the Intervenor’s proffered new contentions in their entirety, finding them based on information that had already been available in the license renewal application.³⁰ On similar timeliness grounds, the Board partially rejected two other contentions.³¹

As to Contention 1, the Board found early case history pertinent. As the Board noted, Contention 1 reflected the Intervenor’s effort “to renew” an earlier cultural resources contention that the Board had admitted in 2008, but that we had dismissed on appeal as not yet ripe for adjudication.³² In LBP-08-24 — the Board’s threshold decision on hearing requests — the Board had admitted the Tribe’s “Contention B,” a contention that challenged the cultural resources discussion in Crow Butte’s environmental report.

1. History of Contention B

In Contention B, which encompassed arguments under both the NHPA and NEPA, the Tribe had claimed that it had “not been consulted . . . regarding the

²⁷ *Id.*

²⁸ *Id.* § 2.309(c)(1).

²⁹ *See* LBP-15-11, 81 NRC at 407-08 (quoting, in full, 10 C.F.R. § 2.309(c)(1)(i)-(iii)).

³⁰ *See id.* at 418-19, 429 (challenged air quality issues “previously discussed” in the renewal application); *see also id.* at 418-19 (challenge to water quality studies could have been brought based on information in the application).

³¹ *See id.* at 425-26, 437.

³² *Id.* at 414; *see also* Tribe’s New Contentions Based on EA at 14 (“By these Environmental Assessment Contentions 1 and 2 jointly asserted herein with the Consolidated Intervenor, the Tribe hereby renews its previous Contention B which the Commission ruled had been prematurely asserted”); LBP-08-24, 68 NRC at 719.

cultural resources that may be in the license renewal area,” and further claimed that the cultural resources identified in the environmental report could not be “complete” because “the Tribe . . . had no input on this list.”³³ In admitting Contention B, the Board found that the Tribe raised genuine and material disputes with the application by claiming that “the legal requirement of consultation did not occur,” and “by specifically disputing Crow Butte’s finding . . . that there will be no significant impacts to cultural resources as a result of continued operation of the [*in situ* leach] uranium mine.”³⁴

Crow Butte and the Staff appealed the admission of Contention B, arguing that the contention was premature for adjudication. In CLI-09-9, we agreed that the contention was not ripe and reversed the Board’s contention admissibility determination, given that the contention centered on claimed deficiencies (under the NHPA and NEPA) said to stem from a failure to consult the Tribe, while Crow Butte itself had no obligation under the NHPA to consult the Tribe.³⁵

In our decision, however, we made a point of addressing a Board concern regarding timeliness. In admitting the contention, the Board had expressed the concern that if the Intervenor were made to wait until the Staff’s environmental analysis to file a consultation-related cultural resources contention, the Staff or applicant might characterize a subsequent contention as untimely — for failure to meet the additional, “more rigorous” timeliness standards that are applied to contentions filed after the initial petition deadline.³⁶ The Board reasoned that to require the Tribe to defer its cultural resources contention until the Staff’s NEPA review was complete would impose an added and undue “hardship” on the Tribe, thereby “tilt[ing] the balance in favor of determining that [Contention B was] ripe for adjudication.”³⁷

We responded by reaffirming that our rules expressly allow for new contentions based on “the draft or final environmental impact statement where that

³³ See LBP-08-24, 68 NRC at 719; LBP-15-11, 81 NRC at 414 n.69; Request for Hearing and/or Petition to Intervene (July 28, 2008) (Tribe’s Petition to Intervene), at 13-15.

³⁴ LBP-08-24, 68 NRC at 723. As the Board described, the Tribe disputed the environmental report’s “representations regarding cultural resources found on the site” because the conclusions were reached without the input of Tribal Historic Preservation Officers who were “singularly qualified to identify cultural resources and to determine their importance and how they should be protected.” See *id.*

³⁵ See CLI-09-9, 69 NRC at 348-51; see also NRC Staff’s Notice of Appeal of LBP-08-24, Licensing Board’s Order of November 21, 2008, and Accompanying Brief (Dec. 10, 2008), at 21-22 (Staff stating that it was “not required at this time to engage that [NHPA consultation] process and has not yet begun” the process); Crow Butte Resources’ Notice of Appeal of LBP-08-24 (Dec. 10, 2008), at 7 (“[i]f the NRC fails to consult during the environmental review process, a new contention could be filed”).

³⁶ See LBP-08-24, 68 NRC at 720; CLI-09-9, 69 NRC at 350-51.

³⁷ LBP-08-24, 68 NRC at 720.

document contains information that differs ‘significantly’ from the information that was previously available.”³⁸ We therefore stated that “whether and how the Staff fulfills its NHPA obligations are issues that could form the basis for a new contention,” pursuant to our rules for new and amended contentions.³⁹

When we issued our decision, we expected that the Staff would address its NHPA-related obligations (including cultural resources issues) at the time that it issued a draft or final NEPA document, such as a draft or final EA or environmental impact statement (EIS). The Staff initially predicted that it would complete the environmental review by December 2009.⁴⁰ The Staff, however, experienced delays in performing its environmental review of the license renewal application and ultimately issued a final EA in October 2014, nearly five years after its initial estimate and seven years after Crow Butte filed its application.⁴¹ The Board promptly set a thirty-day deadline for contentions challenging the final EA.⁴² The Intervenor’s contentions followed.

2. Board Ruling on Contention 1

In LBP-15-11, the Board found Contention 1 to be a timely (and otherwise admissible) challenge to the Staff’s final EA. In doing so, the Board highlighted the Tribe’s earlier-admitted cultural resources contention and our decision to dismiss that contention as premature.⁴³ The Board noted that in CLI-09-9 we had stated that the Staff’s fulfillment of its obligations under the NHPA could serve as a basis for a new cultural resources contention.⁴⁴ Because the Staff did not publish a draft EA, the Board described the final EA as the first opportunity

³⁸ CLI-09-9, 69 NRC at 351 & n.104. In CLI-09-9, we referenced the rule in place at the time. Compare 10 C.F.R. § 2.309(c)(1)(ii) (2016) with 10 C.F.R. § 2.309(f)(2) (2009). The NRC revised the rules governing new and amended contentions in 2012; those revisions do not affect our decision today. See generally Revisions to Rules of Practice, 77 Fed. Reg. at 46,571-72; see also LBP-11-15, 81 NRC at 408 n.30.

³⁹ See CLI-09-9, 69 NRC at 351.

⁴⁰ See Initial Scheduling Order (Jan. 8, 2009) (unpublished), at 2; Letter from Brett Klukan, Counsel for NRC Staff, to the Administrative Judges (Apr. 16, 2009), at 1 (status report noting that expected date of December 2009 for issuance of final environmental review document had not changed); LBP-11-30, 74 NRC 627, 634 (2011).

⁴¹ See Letter from Marcia Simon, Counsel for NRC Staff, to the Administrative Judges (Oct. 27, 2014); see also LBP-15-2, 81 NRC 48, 62-63 (2015) (summarizing monthly status reports regarding the Staff’s environmental review schedule).

⁴² See Order (Scheduling Filing of New/Amended Contentions and Requesting Proposed Evidentiary Hearing Dates) (Oct. 28, 2014) (unpublished); Order (Granting Intervenor’s Unopposed Extension of Time to File New/Amended Contentions) (Nov. 24, 2014) (unpublished) (extending the deadline by 40 days)).

⁴³ See LBP-15-11, 81 NRC at 414.

⁴⁴ *Id.*

for the Intervenor to review the Staff's "analysis of the project's environmental impacts."⁴⁵ The Board added that in CLI-09-9 we also had stated that contentions based on new information in a NEPA document typically would be "considered timely if filed within 30 days of publication of the draft" NEPA document.⁴⁶ Given that the Intervenor in Contention 1 sought to renew the previously-dismissed cultural resources Contention B, and given further that the Staff never published a draft EA, the Board found the new cultural resources claims in Contention 1 to be a timely-raised challenge to the Staff's final EA.⁴⁷

We turn now to Crow Butte's arguments challenging the Board's timeliness and merits rulings on Contention 1. We begin with Crow Butte's challenge to LBP-15-11.

III. ANALYSIS

A. LBP-15-11: Timeliness of Contention 1

Crow Butte claims that "Contention 1 should never have been admitted" for hearing because the Board "incorrectly applied the timeliness criteria" found in the NRC contention admissibility regulations.⁴⁸ Crow Butte therefore seeks reversal of LBP-15-11 to the extent that the decision admitted Contention 1. Crow Butte's core claim is that the Board erred in basing its timeliness ruling on the Staff's final EA because "the exact same information, analysis, and conclusions on cultural resources had been available to the intervenors *for more than a year prior* to publication of the final EA."⁴⁹ Crow Butte therefore argues that the Board failed to examine "whether the contention was based on new and materially different information or was filed promptly once the new information became available."⁵⁰ Specifically, Crow Butte claims that Contention 1 challenges information that either (1) had been available in Crow Butte's 2007 application, or (2) was made available in the Staff's "draft cultural resources assessment" posted on the NRC's public website on September 30, 2013.⁵¹

Crow Butte's reference to the "draft cultural resources assessment" is shorthand for information that the Staff made available during the course of its NEPA

⁴⁵ See *id.* at 409 n.36.

⁴⁶ See *id.* at 414-15; CLI-09-9, 69 NRC at 351 & n.105.

⁴⁷ Crow Butte sought interlocutory review of the Board's decision to admit Contention 1. We denied the request for failure to meet the interlocutory review standards. See CLI-15-17, 82 NRC 33, 42-45 (2015).

⁴⁸ Petition at 5.

⁴⁹ *Id.*

⁵⁰ *Id.* at 8.

⁵¹ See *id.* at 8-11.

review. On October 1, 2013, the Staff notified the Board and the parties that the Staff had posted on the NRC website “information related to its cultural resources evaluation per Section 106 of the National Historic Preservation Act.”⁵² The Staff’s notification contained a link for accessing the website and sought “comments from the public as well as any information relevant to any of the posted conclusions made by the Staff.”⁵³

Crow Butte claims that this information “included the NRC Staff’s basis for NHPA compliance and the cultural resource evaluation in the final EA.”⁵⁴ In its petition, Crow Butte provides a table comparing a description of TCPs that appeared in the “draft consultation documents” posted on the NRC website with nearly-identical descriptions of TCPs that appear in the final EA.⁵⁵ Crow Butte therefore concludes that “the information on which the [Intervenors’] proposed contention was based, and the conclusions it challenged, were available at least as early as September 30, 2013 — that is, more than one year prior to the final EA, which was published in November 2014.”⁵⁶

Crow Butte, in short, claims that the Staff’s issuance of the final EA did not establish good cause that would demonstrate timeliness under our rules governing admissibility of contentions filed after the initial petition.⁵⁷ Rather, Crow Butte argues that the applicable “trigger for a timely contention” was the “availability of the *information* upon which the contention was based — in this case, the [license renewal application] and the NRC Staff’s draft cultural resources assessment.”⁵⁸ Crow Butte therefore contests “the Board’s sole focus on the final EA as the trigger for new cultural resources contentions — rather than the [license renewal application], the draft EA documentation, or the availability of new and materially different information.”⁵⁹ Crow Butte argues that the final EA “merely compile[d] pre-existing, publicly available information” from the license renewal application and the “draft cultural resource[s] assessment,” and did not serve to “render ‘new’ the summarized or compiled information” in the EA.⁶⁰

⁵² See Letter from Brett Klukan, Counsel for NRC Staff, to the Administrative Judges (Oct. 1, 2013) (Staff Notification).

⁵³ See *id.* at 1 (stating that information could be found at <http://www.nrc.gov/info-finder/materials/uranium/licensed-facilities/crow-butte/section-106-license-renewal-docs.html>).

⁵⁴ Petition at 11.

⁵⁵ *Id.* at 11-12.

⁵⁶ *Id.* at 13.

⁵⁷ *Id.* at 9.

⁵⁸ *Id.*

⁵⁹ *Id.* at 13.

⁶⁰ *Id.* at 13-14.

We have carefully reviewed Crow Butte’s arguments. Although Crow Butte accurately describes our standards governing timeliness of new or amended contentions, those standards are applied on a case-specific basis. Here, given the facts of this case, we do not discern an error of law or abuse of discretion warranting reversal or further review of the Board’s decision to admit Contention 1 as timely. We find unpersuasive Crow Butte’s claim that Contention 1 was late because it should have been based on the license renewal application. We also conclude that the significance of the Staff’s posted information relating to its NHPA section 106 evaluation — that is, whether the information constituted the appropriate basis and deadline trigger for new or refiled cultural resource contentions — was insufficiently clear. For several reasons, we defer to the Board’s judgment on the timeliness of Contention 1.

First, Crow Butte incorrectly asserts that the Intervenor should have challenged — but did not — the application’s cultural resources discussion.⁶¹ Specifically, Crow Butte claims that “[t]o the extent that proposed Contention 1 disputed the adequacy of the final EA’s identification of cultural resources or TCPs,⁶² the contention should have been based on the [application].”⁶³ Crow Butte maintains that the Intervenor “did not dispute the cultural resources identified” in the application, adding further that “[h]ad they done so, the NRC Staff and Crow Butte would have had an opportunity to address their concerns during the review process.”⁶⁴ In short, Crow Butte — which previously and successfully sought to have the earlier Contention B dismissed as “premature” for adjudication — now argues that the Intervenor failed to meet contention timeliness standards because their claims should have been raised at the time of the application.

But the Tribe in Contention B *did* dispute the adequacy of the cultural resources identified in Crow Butte’s environmental report. Crow Butte mistakenly claims that the contention only asserted a failure to comply with NHPA tribal *consultation* requirements and did not challenge “the adequacy of Crow Butte’s *identification* of cultural resources.”⁶⁵ On the contrary, by its own terms Contention B also challenged the cultural resources identified by Crow Butte in the application.⁶⁶ Although Contention B was rooted in an asserted failure

⁶¹ See *id.* at 10.

⁶² Traditional Cultural Properties reflects the “subset of cultural resources that relate to Native American history and culture.” See LBP-16-7, 83 NRC at 349 n.23; see also Ex. NRC-083, National Register Bulletin, Guidelines for Evaluating Traditional Cultural Properties (1998).

⁶³ See Petition at 9-10.

⁶⁴ See *id.* at 9 n.21.

⁶⁵ See *id.* at 10 n.25; see also *id.* at 13 n.30.

⁶⁶ Among its claims, the Tribe in Contention B stated that while the “Applicant has identified
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to consult the Tribe, the contention's claims spanned both NHPA and NEPA issues, encompassing the completeness and accuracy of the identified cultural resources.⁶⁷ In support of Contention B, the Tribe expressly cited to a table in the application that listed cultural resources and challenged the list because the Tribe "neither had the opportunity to evaluate the completeness of this list, nor the opportunity to evaluate the accuracy of the significance ascribed to the items on the list."⁶⁸ We reject, therefore, Crow Butte's argument that Contention 1 is untimely because the Intervenor failed to challenge cultural resources identified in the application. The Tribe's challenge to the identified cultural resources was part of Contention B's core claim that consultation requirements had not been satisfied; as such it was not error for the Tribe to re-propose and for the Board to reconsider the identification claim when it was raised again after the final EA.

We also are unpersuaded by Crow Butte's claims regarding the information posted on the NRC website and decline to disturb or revisit further the Board's timeliness ruling. At bottom, taking all relevant factors into account, ambiguity existed regarding the Staff's notification and associated posted information. While Crow Butte refers to the information posted on the NRC website as the "draft cultural resources assessment,"⁶⁹ the Staff's notification did not characterize any of the information posted as part of its draft EA or otherwise equivalent to a draft EA in content or significance. Therefore, it may not have been clear at the time that the items posted on the website for public comment — as opposed to an anticipated Staff final environmental review document — constituted the Staff environmental analysis on which the Intervenor were to base new or amended contentions on cultural resources.

First, in this case both our decision and those of the Board created the expect-

what it believes to be cultural resources in the area, . . . the Tribe has had no input on this list, and it therefore cannot be complete." See Tribe's Petition to Intervene at 13.

⁶⁷ See *id.* (stating that the Tribe was the most "qualified to judge [the] existence and importance" of potential cultural sites and artifacts, "which is precisely why consultation is required and those determinations are not left to the federal agency or company proposing [an] action"); see also *id.* at 15 ("The Tribe has its own [Tribal Historic Preservation Officer], who should be consulted before determining that there are no significant cultural resources in the area The Application also states . . . that the Nebraska [State Historic Preservation Officer] has determined that the identified sites or artifacts are not eligible for inclusion on the National Register, but the Tribe has not been consulted . . . regarding any sites or potential sites").

⁶⁸ *Id.* at 15 (citing Table 2.4-1 from the environmental report); see also, *e.g.*, Tr. at 361-63 (contention questions "the accuracy" of the identified resources "because the reason why there is the requirement of consultation is for accuracy and completeness"). When it admitted Contention B, the Board understood the contention to challenge the application's findings regarding impacts to cultural resources. See LBP-08-24, 68 NRC at 723.

⁶⁹ *Id.* at 10; see also, *e.g.*, *id.* at 8 n.17, 9 & n.21, 13 (referring to "draft EA documentation").

tation that the appropriate time for the Intervenor to refile a cultural resources contention would be when the Staff actually completed or fulfilled its NHPA-related requirements and NEPA review — that is, when it issued a final or at least a draft EA or EIS.⁷⁰ When we issued CLI-09-9, we expected that the Staff, following appropriate consultations, would provide its conclusions on cultural resources in its draft or final NEPA review document. After all, as we earlier noted, the Staff originally expected to issue a final NEPA document in 2009. Our decision accordingly referred to the Tribe “defer[ring] its contention until the NEPA review is complete,” and to “the filing of new contentions on the basis of the draft or final [environmental review document].”⁷¹ Similarly, in commenting on Staff delays in completing the environmental review, the Board referred to the earlier-dismissed Contention B, stating that “once the Staff *completes its environmental analysis*, if the Tribe remains unsatisfied with the results of the consultative process, a new contention could be filed.”⁷²

Second, the Staff’s notification stated only that “information related to” the Staff’s “cultural resources evaluation per Section 106 of the National Historic Preservation Act” had been posted on the NRC website, and that the Staff was “seeking comments from the public as well as any information relevant” to posted conclusions.⁷³ How the information was to be considered vis-à-vis the Staff’s pending NEPA review was not specified. Just two weeks before, the Staff had informed the Board and the parties that it expected to issue its “final environmental review document” by the end of November 2013.⁷⁴ At the

⁷⁰ See, e.g., CLI-09-9, 69 NRC at 349 (describing argument on appeal as whether “issue will not ripen until the Staff completes its NEPA review”).

⁷¹ CLI-09-9, 69 NRC at 351. Although we specified that new contentions based on a draft or final Staff NEPA document must be based on “information that differs ‘significantly’ from” that previously available, the particular example that we gave (taken from the 2009 version of the rule) was that of “‘data or conclusions in the NRC draft or final environmental impact statement . . . that differ significantly from the data or conclusions in the *applicant’s* documents.’” See *id.* at 351 & n.104 (emphasis added) (quoting 10 C.F.R. § 2.309(f)(2) (2009)). Crow Butte is correct that it was not our intent in CLI-09-9 to declare that cultural resource/consultation contentions would *only* be ripe if based on a draft or final EA or EIS, regardless of what other NEPA-related document the Staff might potentially issue in the interim. But we acknowledge that the Board and the Intervenor relied on statements in our decision in forming their understanding that the Intervenor should await the Staff’s draft or final NEPA review document.

⁷² See LBP-11-30, 74 NRC at 632 n.25 (emphasis added).

⁷³ See Staff Notification at 1.

⁷⁴ See Letter from Brett Klukan, Counsel for NRC Staff, to the Administrative Judges (Sept. 16, 2013), at 1. The Staff’s September 2013 status report also indicated, without further comment, that the Staff anticipated “in the near future releasing for public comment information related to its Section 106 evaluation.” See *id.* In its first status report following its notification, the Staff informed the Board that although it believed it could no longer meet the November estimate, it was

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time of the Staff's notification, therefore, the Staff was expected to issue its *final* NEPA review document relatively soon — a document also expected to contain information on the Staff's consultation and cultural resources evaluation pursuant to the NHPA.⁷⁵

In other words, in the same relative time frame as the Staff's notification requesting public comment on its NHPA-related efforts, the Board and parties had reason to expect that the Staff's NEPA review was concluding and that a final NEPA document — on which a potential cultural resources contention might be based — would be issued in short order. Neither the Board nor the parties could have envisioned in October 2013 that the Staff would not issue its NEPA review document for another year. We find unpersuasive, therefore, Crow Butte's suggestion that the Intervenor chose or were "allowed" to "lie in wait" until the Staff issued its final EA before raising contentions.⁷⁶ Having *already* raised a similar cultural resources contention before, the Intervenor sought to refile their contention at the appropriate time. By waiting until the first Staff NEPA review document of record, the Intervenor reasonably assumed that they were following Commission and Board guidance.⁷⁷ The record likewise reflects that the Board itself had established deadlines to file new or amended contentions based on its understanding of Commission direction.⁷⁸

Further, the Staff's notification did not highlight the potential significance of the material that the Staff had posted. If the Staff sought to have the information effectively treated as akin to a draft EA in significance, some clarification of the nature of the information would have been helpful to the Board and parties, particularly given that all parties understood that the Intervenor likely were awaiting the issuance of a NEPA document on which to base refiled cultural resources contentions.⁷⁹ We therefore agree with the Tribe that the Staff's Board

"finalizing" its final environmental review document and that "issuance of the document will occur in December [2013]." See Letter from Brett Klukan, Counsel for NRC Staff, to the Administrative Judges (Nov. 5, 2013), at 1.

⁷⁵ As we stated in CLI-09-9, typically "[t]he NRC implements its responsibilities under NHPA in conjunction with the NEPA process." See CLI-09-9, 69 NRC at 348 n.89.

⁷⁶ Petition at 8.

⁷⁷ See CI's Answer at 4 ("The Commission and the Board gave Intervenor the understanding that there would be one opportunity to file on the Environmental Assessment and that the deadline would be 30 days after the publication of that final Environmental Assessment"); see also Consolidated Intervenor's Combined Reply to NRC Staff and Applicant's Responses to Newly Filed EA Contentions (Feb. 6, 2015), at 4 (quoting CLI-09-9, 69 NRC at 350-51).

⁷⁸ See, e.g., LBP-16-7, 83 NRC at 350 n.27 ("In rejecting this earlier contention as premature, the Commission instructed that the Contention be refiled after the EA was issued") (citing LBP-15-11, 81 NRC at 414-15).

⁷⁹ The Staff prepared a draft EA, although it was not made publicly available. The Staff provided
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notification and the associated information did not clearly appear to be “the equivalent of [a draft EA] that would provide the Tribe with sufficient notice and information to trigger the filing deadline for a contention challenging an EA’s analysis of Tribal, historic, cultural, religious, and spiritual interests.”⁸⁰

New or amended NEPA contentions are often based on a draft or final NEPA review document (e.g., an EA or EIS). When other documents are prepared during the Staff’s NEPA review that are of sufficient significance as to be the subject of a Board notification it should not be necessary to wonder whether the documents serve as a contention-deadline trigger. Here, for instance, the Board — or any party — appropriately might have sought clarification regarding the significance of the notification to the adjudication, particularly on the question of whether the time was ripe, in terms of the Staff’s review, to re-submit the consultation and related cultural resources claims that we had previously excluded as premature. But no clarification regarding the notification was sought or given by the Board or any party.

Moreover, “[l]icensing boards have considerable discretion in their management of adjudicatory proceedings.”⁸¹ While the Board must apply our contention admissibility rules, it still has leeway to structure the proceeding as it views appropriate to best promote efficiency.⁸² In its case management role, the Board here reasonably directed that all new and amended contentions based on the final EA were to be filed on a single, clearly identified schedule.⁸³

Considering all of the case-specific factors before us, we conclude that the Board’s finding of Contention 1 as timely constituted neither legal error nor

a draft EA in March 2014 (and a revised version in September of that year) to the State of Nebraska, Department of Environmental Quality. *See* Ex. NRC-010, Final EA, at 129.

⁸⁰ *See* Tribe’s Answer at 6; *see also id.* at 8.

⁸¹ *See Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-16-11, 83 NRC 524, 539 & n.101 (2016).

⁸² In LBP-15-11, the Board expressed its general view that while “timely filing . . . is triggered on the date of public disclosure” of information, “[t]his requirement also must be considered keeping in mind . . . promoting efficient adjudication,” which might “not be served by a licensing board having to rule on contention admissibility after every minor Staff publication.” *See* LBP-15-11, 81 NRC at 409 & n.32.

⁸³ We note that a cultural resources contention, while not definite, nonetheless was expected, given the earlier-dismissed Contention B. This was not the case, then, of a late effort to introduce a wholly new or unexpected matter. And the fact that the Intervenor filed Contention 1 based on the 2014 EA instead of the 2013 Board notification did not delay the evidentiary hearing. As we noted earlier in this proceeding, “[e]ven had Intervenor proposed their contentions earlier, the hearing could not take place until the Staff’s environmental review was complete,” that is, until the Staff issued its final EA. *See* CLI-15-17, 82 NRC at 45 (denying interlocutory review). Moreover, the Staff’s posted information pertained only to the NHPA evaluation and cultural resources, and therefore the Intervenor still would have had the opportunity to submit new or amended contentions challenging the EA on other environmental topics (as they in fact did).

abuse of discretion warranting the reversal of LBP-15-11 and dismissal of the contention. We therefore defer to the Board's judgment on Contention 1's timeliness.

B. LBP-16-7: Board's Merits Decision Resolving Contention 1

1. Board's Merits Findings

Following an evidentiary hearing, the Board issued its merits ruling on Contention 1 in LBP-16-7. Crow Butte seeks reversal of this decision to the extent that the Board resolved Contention 1 on the merits in favor of the Intervenor.

The Board first examined whether the Staff satisfied its obligations under the NHPA to provide "an opportunity for Indian tribes to consult meaningfully" on the Crow Butte license renewal action.⁸⁴ In what it termed a "close call," the Board found that the Staff, after much delay, ultimately afforded the Tribe reasonable opportunities for consultation, and therefore had satisfied its consultation obligations under the NHPA.⁸⁵

The Board next addressed whether the Staff met the NHPA requirements to "make a reasonable and good faith effort" to identify historic properties, their significance, the potential effects of the license renewal on them, and potential mitigation measures — requirements that the Board referred to as the Staff's "Identification Obligations."⁸⁶ The Board addressed the adequacy of each effort to identify historic properties. These efforts included the following: (1) a Class III archeological field inventory, called the Bozell & Pepperl Survey, conducted in two phases in the 1980s and published in a 1987 report; (2) NRC Staff literature reviews and interviews; (3) an information-gathering session with six tribes, held June 7-9, 2011, at the Pine Ridge Reservation; and (4) a TCP field survey conducted in November 2012.⁸⁷

The Board found these efforts to identify historic and cultural properties deficient. In LBP-16-7, the Board concluded that "potential TCPs and historic properties within the license area have not been identified and assessed, nor have attempts been made to mitigate potential impacts, in contravention of the NRC Staff's obligations under the NHPA."⁸⁸ The Board therefore found that the Staff had not satisfied its "Identification Obligations" as required by the NHPA.⁸⁹

⁸⁴ See LBP-16-7, 83 NRC at 382 (citing 54 U.S.C. § 302706 (West 2016)).

⁸⁵ See *id.* at 369-83 (detailing findings on this issue). This ruling has not been appealed.

⁸⁶ See *id.* at 354-56, 383-402 (referencing 54 U.S.C. § 306108 (West 2016) and Advisory Council on Historic Preservation regulations implementing the NHPA).

⁸⁷ See *id.* at 383-402.

⁸⁸ See *id.* at 402.

⁸⁹ See *id.*

The Board next considered Staff's obligations under NEPA, particularly whether the Staff took a "hard look" at the potential environmental impacts of the license renewal on TCPs and cultural resources.⁹⁰ Observing that a NEPA review "is not limited to a focus on historic properties in the same way as the NHPA," the Board went on to find that the Staff's EA gave "short shrift . . . to a review of tangible and intangible TCPs that do not rise to the level of historic properties under the" NHPA.⁹¹

As part of its NEPA findings, the Board noted that the final EA had not addressed comments from tribes that had objected to the TCP field survey conducted in late 2012. Specifically, the Board stated that while "comments were received objecting to" the field survey report, and moreover the EA "promised" to provide a "detailed assessment of the report and the comments in the Environmental Impacts section," the EA actually "did not discuss these comments by Indian tribes in opposition to the . . . approach taken" in the field survey.⁹² The Board found the EA deficient under NEPA "for failing to take a hard look at potential TCPs within the Crow Butte license area" and for failing "to analyze the objections raised by the tribes with respect to the inadequacy of the open site TCP survey."⁹³

Having found that the "NRC Staff satisfied neither the NHPA's requirement to identify, assess, and to attempt to mitigate impacts on TCPs within the license area, nor NEPA's requirement to take a hard look at cultural resources within the license area," the Board concluded that it was unable to determine whether license renewal would result in "no significant impacts," and that as a result the NRC's Finding of No Significant Impact (FONSI) had been placed "in doubt."⁹⁴ The Board nonetheless concluded that the NEPA and NHPA deficiencies it had found did not warrant either staying the effectiveness of the license renewal or denying the license renewal application because the Intervenor had not pre-

⁹⁰ *See id.* at 402-04.

⁹¹ *See id.* at 402-03.

⁹² *See id.* at 403 (quoting Ex. NRC-010, Final EA § 3.9.8).

⁹³ *See id.* at 404.

⁹⁴ *Id.* at 412. The Board acknowledged License Condition 9.8, which requires the licensee to "administer a cultural resource inventory if such survey has not been previously conducted," but concluded that by its terms the license condition would "exclude those areas already encompassed by the" same surveys (e.g., the Bozell & Pepperl survey) that the Board had found insufficient. *See id.* at 401 n.466. Similarly, the Board stressed that even if Crow Butte is not conducting "new mining activities in the license area," the Staff still needed to show that it had satisfied its obligations under the NHPA to make a reasonable and good faith effort to identify TCPs or other historic properties in the license area. *See id.* at 401. The Board noted, further, that Crow Butte intends to use the license area as a "centralized processing site" for expansion sites near the license area, and that the license area also will be subject to reclamation activities, both activities that potentially could pose "harm to unprotected TCPs." *See id.*

sented “evidence that imminent harm would result from granting the license [renewal] before the NRC Staff fulfills its NEPA and NHPA requirements.”⁹⁵

While the Board did not direct the Staff to take any particular remedial action, it suggested that “the most efficient method for curing these NEPA and NHPA deficiencies would be for the NRC Staff to publicly supplement its EA with additional analyses and findings with respect to possible TCPs.”⁹⁶ The Board also instructed the Staff to provide it with monthly status reports on its activities, including the status of any revised EA or EA supplement.⁹⁷

2. *Crow Butte’s Appeal*

Crow Butte argues that the Staff’s final EA satisfies both NEPA and the NHPA. Crow Butte therefore seeks reversal of the Board’s findings in favor of the Intervenor. For the reasons discussed below, we decline to take review of LBP-16-7 because Crow Butte’s petition fails to meet our review standard.

The Board’s decision in LBP-16-7 is rooted in its assessment of the evidence presented, including testimony and exhibits. We “expect our licensing boards to review testimony, exhibits, and other evidence carefully” to resolve factual disputes.⁹⁸ Our standard of “clear error” for overturning a Board’s factual findings following a merits hearing is high. Even where the “record evidence . . . may be understood to support a view sharply different from that of the Board” does not mean that the “Board’s own view of the evidence was ‘clearly erroneous’ — i.e., that its findings were not even plausible in light” of the full record.⁹⁹

⁹⁵ *Id.* at 413. The Intervenor earlier sought a stay of effectiveness of the renewed license; the Board denied the stay application. LBP-15-2, 81 NRC at 48, *aff’d*, CLI-15-17, 82 NRC at 37-42; *see also* LBP-15-2, 81 NRC at 57 n.66 (citing, among other things, 10 C.F.R. § 40.42(a)). The Board noted that under our timely renewal regulation, when a licensee applies to renew its license at least thirty days prior to expiration, the license is effectively extended until a final decision is made on the application. LBP-15-2, 81 NRC at 57 & n.66 (citing 10 C.F.R. § 40.42(a)). Section 40.42(a) implements Section 558 of the Administrative Procedure Act, 5 U.S.C. § 558(c)(2). Therefore, under applicable law, a stay (or revocation) of the renewed license would have only served to reinstate the prior license. The situation of a license in timely renewal is therefore distinguishable from that of a new license, and without more we do not consider the D.C. Circuit’s ruling in *Oglala Sioux Tribe v. NRC*, 896 F.3d 520 (D.C. Cir. 2018) to require action on the license at this time.

⁹⁶ *See* LBP-16-7, 83 NRC at 414.

⁹⁷ *Id.* at 414-15. In January 2017, the Staff notified the Board that, at the licensee’s request, it was suspending all work related to Contention 1 during the pendency of this appeal. *See* Letter from David M. Cylkowski, Counsel for NRC Staff, to the Administrative Judges (Jan. 17, 2017).

⁹⁸ *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-05-19, 62 NRC 403, 411 (2005).

⁹⁹ *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-03-8, 58 NRC 11, 26 (2003) (quoting *Kenneth G. Pierce* (Shorewood, Illinois), CLI-95-6, 41 NRC 381, 382

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Crow Butte outlines the Staff's efforts to identify cultural resources.¹⁰⁰ As Crow Butte describes, the "NRC Staff reviewed prior Class III archeological survey data, performed supplemental literature reviews, led field trips and meetings with [the Oglala Sioux Tribe] and others, solicited information on TCPs from [the Tribe] and others, and issued the draft EA for comment."¹⁰¹ The Board, however, provided grounds for finding each of these efforts deficient. Crow Butte does not address the Board's specific reasoning and therefore fails to point to any "clearly erroneous" material factual error in the Board's assessment of the efforts to identify potential TCPs. Nor does Crow Butte otherwise present a substantial question warranting review.

For example, the Board acknowledged that the Bozell & Pepperl Class III archaeological survey, conducted in the 1980s, was an "intensive, professionally conducted study," involving a "pedestrian 'by-foot' survey of a significant portion of the license area."¹⁰² Yet the Board found the study insufficient to satisfy the NHPA identification requirements because the survey team had "made no attempt to communicate with any of the neighboring tribes, such as the Oglala Sioux Tribe . . . to inquire whether those tribes had other literature resources or advice that might bear on the identification or evaluation of historic properties."¹⁰³

The Board additionally found significant that the Staff's obligations under the NHPA are now more extensive than they were at the time of the Bozell & Pepperl survey. Specifically, the Board highlighted that because federal agencies "are now required to assume responsibility for identifying, assessing and attempting to mitigate impacts to tribal cultural resources," the Staff now must "consider the cultural or religious significance that tribes might ascribe to TCPs," which was not an obligation in the 1980s.¹⁰⁴ As Crow Butte itself states, "[a]s an archeological field survey, Bozell and Pepperl was never intended to be the NRC's assessment of TCPs."¹⁰⁵ The Board also found "no evidence . . . presented" that the staff who performed the Bozell & Pepperl survey had "any specific expertise with Native American" TCPs and "a review of the report itself fails to identify any such expertise."¹⁰⁶ Crow Butte does not call into question these findings.

(1995) (internal quotation marks omitted)); *see also, e.g., Strata Energy, Inc. (Ross In Situ Uranium Recovery Project)*, CLI-16-13, 84 NRC 566, 586 (2016).

¹⁰⁰ Petition at 15; *see also id.* at 15-18.

¹⁰¹ *Id.* at 14.

¹⁰² *See* LBP-16-7, 83 NRC at 384.

¹⁰³ *Id.* at 384-85.

¹⁰⁴ *Id.* at 384.

¹⁰⁵ *See* Reply in Support of Petition for Review of LBP-15-11 and LBP-16-7 (Aug. 1, 2016), at 4.

¹⁰⁶ LBP-16-7, 83 NRC at 385.

Similarly, the Board explained why it found insufficient the other efforts to identify TCPs or historic properties. As to the Staff's literature reviews and related interviews, the Board found "no evidence that the NRC Staff enlisted anyone during its literature search, nor interviewed anyone" who had a "demonstrated familiarity with the range of potentially historic properties that may be encountered" and was qualified to evaluate whether the area contains TCPs or potentially eligible historic properties that may not yet have been identified.¹⁰⁷

Crow Butte stresses that the Staff "gathered information directly from Lakota experts, including the [Tribe's] Tribal Historic Preservation Officer" during a June 2011 visit to the Crow Butte area, which involved meetings and a bus tour.¹⁰⁸ But the Board found the June 2011 visit "inadequate to identify historic properties."¹⁰⁹ The Board concluded that "[w]hile the bus tour may have placed Indian tribal members within the license area, there never was an opportunity for attendees to exit the bus and examine the area," and that the meeting's " cursory discussions and the brief bus tour cannot be deemed to meet the NHPA's requirements to identify, assess, and attempt to mitigate impacts to potential historic properties of significance."¹¹⁰

Crow Butte points out that the Staff obtained information from the meeting that led it to identify in its EA four potential TCPs. But Crow Butte does not show clear error in the Board's conclusions regarding the overall comprehensiveness and adequacy of the June 2011 meeting and bus tour. The Board addressed the four new TCPs identified in the course of the June 2011 visit and

¹⁰⁷ See *id.* at 398 (internal quotation marks omitted). The Board stated, for example, that the literature reviews "focused largely on Euro-American resources and Euro-American cultural artifacts, and so those reviews would not be expected to uncover sites of significance to Indian tribes." See *id.* at 389. The Board also noted a Staff expert's statement that a literature review should be merely "a corollary" to other identification efforts, such as a field survey. See *id.* (quoting Tr. at 2024). More significantly, the Board found that the Staff had "overstate[d] the value" of interviews conducted with local archaeology experts because the Staff's "primary focus was, not on the license area itself, but rather on Crow Butte's expansion sites." See *id.* at 389-90. The Board further concluded that the purpose of the Staff expert's "travel to the Crow Butte sites was not to search for more TCPs" that may exist, but instead was "to check on those historic properties that had previously been identified in the Bozell & Pepperl Survey," and therefore "not to find new TCPs or historic properties within the license area." See *id.* at 390.

Crow Butte notes that the Staff's "literature review did not indicate the presence of mid-19th century Lakota ['sign-or-starve'] encampments within or close to the current" Crow Butte license area, and that there was no evidence "in the archaeological data" of a "sizable historic period Native American camp." See Petition at 20 (quoting Staff testimony). But the Board considered the same evidence and concluded that the literature review was "inferior to the expertise" of the Tribe "witnesses who testified to the contrary." See LBP-16-7, 83 NRC at 387.

¹⁰⁸ See Petition at 16.

¹⁰⁹ See LBP-16-7, 83 NRC at 394.

¹¹⁰ *Id.*

rejected the argument that the identification of these properties was evidence of an adequate effort to identify TCPs.¹¹¹ Crow Butte does not demonstrate that the Board improperly weighed the evidence presented or reached implausible conclusions unsupported by the record as a whole. Merely because in the course of the visit tribal members identified four properties that the Staff added to its EA does not by itself suggest that the meeting and bus tour represented adequate efforts to identify potential TCPs.¹¹² Crow Butte simply repeats arguments rejected by the Board without demonstrating that the Board's conclusions were clearly erroneous.

In its EA, the Staff also relies on a TCP field survey conducted in November 2012. As the EA describes, the Staff “invited all the consulting Tribes to complete” a TCP field survey of the Crow Butte facility and “proposed expansion areas in the vicinity.”¹¹³ The Staff proposed an “open site”¹¹⁴ field survey, where Crow Butte would open the site to tribal representatives, with participating tribes to receive a \$10,000 flat fee regardless of the time spent at the site or the nature of the work performed.¹¹⁵ Two tribes agreed to participate in the field survey, the Crow Nation and the Santee Sioux Nation. Following the survey, the Santee Sioux Nation Tribal Historic Preservation Office submitted a survey report to the NRC.

In LBP-16-7, the Board detailed various reasons for finding the 2012 TCP survey deficient. Those reasons included that “neither the Crow Nation nor the Santee Sioux Nation . . . has a sufficient relationship to the license area,” and that therefore the surveyors were “inappropriate for the task” of conducting the TCP field survey for the Crow Butte area.¹¹⁶ The Board moreover emphasized that neither the Crow Nation nor the Santee Sioux Nation “actually surveyed the license area — and this alone renders the November 2012 . . . Survey deficient.”¹¹⁷ The Board therefore found fault with the EA's description of the

¹¹¹ See LBP-16-7, 83 NRC at 393-94. Crow Butte also argues that during this visit, the Oglala Sioux representatives did not specifically “note the potential for mid-19th century Lakota encampments to be located within the project area boundaries.” See Petition at 21 n.48 (citing Ex. NRC-076-R2, NRC Staff's Rebuttal Testimony (June 8, 2015), at 61 (Staff Rebuttal Testimony)). But again, the Board found that the visit did not provide a meaningful opportunity to identify properties at the Crow Butte site, “as the tour covered four sites, was constrained by driver delays, and did not allow the tribal members to exit the bus.” See LBP-16-7, 83 NRC at 372; *see also id.* at 393-94.

¹¹² See Ex. NRC-010, Final EA § 3.9.8.

¹¹³ See *id.*

¹¹⁴ The Board described the “open site” approach as not having any particular “formal structure,” but instead allowing surveyors to enter “the license area to search for TCPs as they deemed appropriate.” See LBP-16-7, 83 NRC at 394.

¹¹⁵ See *id.* at 397.

¹¹⁶ *Id.* at 399.

¹¹⁷ See *id.* at 400.

survey report as having “concluded that there were ‘no eligible sites of cultural or religious significance to the Tribes’” at the Crow Butte facility.¹¹⁸ The Board found the EA’s description incorrect as to the Crow Butte license area because no physical inspection of the license renewal area had been made.¹¹⁹

As the Board went on to describe, quoting Staff testimony, Crow Nation representatives determined that the “current lease area was so disturbed by past agricultural and other historic land uses, including the ongoing mining operations, that there were essentially no areas that had not been disturbed by previous activities.”¹²⁰ Tribal representatives therefore did not “inspect any acreage for the current license area by pedestrian inventory.”¹²¹

Ultimately, the Board concluded that the “decision to eschew a survey of the license area because of ground disturbance cannot be equated to a determination that the license area lacks potential TCPs or historic properties.”¹²² The Board found that the “Staff’s reliance on the Crow and Santee Sioux assessment that the ground was disturbed cannot stand as the determining factor” regarding whether “an actual field investigation” was warranted, and stated that no evidence was presented “that the license area was so disturbed” that it could not be surveyed.¹²³ “Based on the record as a whole,” the Board found it to be “at least plausible” that there are TCPs “within the license area requiring identification and protection — either those waiting to be discovered, or those that were evaluated previously but incorrectly.”¹²⁴

Crow Butte does not address the sufficiency of the TCP survey and therefore does not identify any clear error in the Board’s assessment of that survey. Crow Butte instead stresses that the Tribe did not respond to the Staff’s invitation to participate in the field survey, and that the Tribe failed to comment on the Staff’s “draft cultural resources assessment.” Crow Butte further argues that “nothing in NHPA or NEPA mandates participation by tribal members” in field investigations, “[n]or do the statutes give potentially affected tribes the right to dictate the scope of the NRC Staff’s investigation.”¹²⁵

But the Board’s decision does not conclude that identification efforts can only be satisfied by a field investigation conducted by Oglala Sioux Tribe members. In fact, the Board acknowledged that the Staff “need not rely on the Oglala

¹¹⁸ See *id.* (quoting Ex. NRC-010, Final EA § 3.9.8).

¹¹⁹ See *id.* The Board called this a “critical fact not even mentioned in the EA.” *Id.*

¹²⁰ See *id.* (quoting Ex. NRC-001-R, NRC Staff’s Initial Testimony (May 8, 2015), at 74 (Initial Staff Testimony)).

¹²¹ See Ex. NRC-001-R, Initial Staff Testimony, at 74.

¹²² See LBP-16-7, 83 NRC at 400.

¹²³ See *id.* at 400-01.

¹²⁴ See *id.* at 401.

¹²⁵ See Petition at 17.

Sioux Tribe to meet its Identification Obligations under the NHPA,” and further acknowledged that “the intensive TCP survey preferred by the tribes may well have been infeasible on a cost basis.”¹²⁶ Here, the Staff itself considered important the need to identify “potential Lakota places of significance, especially for the nearby Oglala Sioux Tribe,”¹²⁷ and the Staff chose to have a TCP field survey performed, “ultimately opt[ing] for the open site” approach, which Crow Butte had suggested.¹²⁸ The Board simply assessed the survey that *was* performed and found it insufficient for a number of specific reasons. Crow Butte’s petition does not call into substantial question any of the Board’s specific grounds for finding the 2012 TCP survey deficient.

Ultimately, the core issue here is whether the Staff’s efforts — with or without the Tribe’s direct assistance — were adequate to assess the area and support the Staff’s conclusions in the EA. The Board ruled against the Tribe on the issue of consultation, in view of the Tribe’s own failures to respond to the Staff.¹²⁹ The Board therefore recognized that the Staff cannot force the Tribe’s participation or assistance, which is why the Board suggested that the Staff, if unable to obtain information from knowledgeable Tribe members, could alternatively seek to “locate and utilize experts who are knowledgeable about Lakota culture and TCPs” that may be in the license renewal area.¹³⁰ In any event, as the Tribe states, the “burden was on the NRC Staff — not the Tribe — to demonstrate it had fulfilled its responsibilities under the NHPA and NEPA.”¹³¹

Crow Butte argues that the Tribe “has not identified a single historic site or TCP that the NRC Staff is alleged to have overlooked in the EA.”¹³² But again, the focus of the Board’s decision is whether the sum and breadth of the Staff’s efforts were reasonably sufficient to identify potential sites and properties, regardless of the level of response by the Tribe.¹³³ The Board found that each

¹²⁶ See LBP-16-7, 83 NRC at 398, 402 n.467.

¹²⁷ See *id.* at 364 (quoting Ex. NRC-076-R2, Staff Rebuttal Testimony, at 59).

¹²⁸ See *id.* at 364, 367-68; see also Ex. NRC-001-R, Initial Staff Testimony, at 63 (“[T]he Tribes felt very strongly that the only way to properly identify cultural properties was with a [TCP] survey While the [Advisory Council on Historic Preservation’s] regulations and guidance do not declare any single method by which cultural properties must be identified, the Staff considered the Tribes’ comments and chose to conduct a TCP survey of the Crow Butte facility and proposed expansion areas.”).

¹²⁹ See LBP-16-7, 83 NRC at 382-83.

¹³⁰ See *id.* at 402 n.467.

¹³¹ See Tribe’s Answer at 9.

¹³² Petition at 19.

¹³³ Nonetheless, the Board addressed what it viewed as limited or ineffective Staff efforts to engage the Tribe regarding the field survey. The Board concluded that because the Staff initially contemplated a survey encompassing multiple license sites, including that of the Powertech site, the

(Continued)

source of information that the EA relies on — the Bozell & Pepperl survey, the literature reviews and interviews, the June 2011 meeting, and the 2012 TCP field survey — was not a reasonable effort to identify potential TCPs. In short, the Board found that the Staff relied on investigations or reviews that had not been shown to be sufficiently comprehensive, no matter that Tribe “witnesses did not definitively state” that there were “sign-or-starve” “encampments on the project site,” nor could offer specific evidence “as to the location of any encampments.”¹³⁴

Crow Butte does not identify any material evidence that the Board may have overlooked or misunderstood. Crow Butte instead rehashes arguments made before the Board, referencing the same testimony or other evidence that the Board considered but found less persuasive than that of the Intervenor.

The Board in its role as the fact-finder judged the credibility of the witnesses, weighed the evidence, and provided a clear, extensive description of its reasoning. Crow Butte has not identified a clear factual or legal error warranting reversal or further examination of the Board’s decision.¹³⁵ We decline to take plenary review of LBP-16-7.¹³⁶

survey proposals may have been confusing. Relatedly, the Tribe did submit a proposed statement of work for a TCP survey for the Powertech site in South Dakota; the Tribe submitted its survey proposal a month before the Staff decided not to conduct a survey encompassing both the Crow Butte and the Powertech sites and shortly before the Staff issued its invitation for the “open site” survey of the Crow Butte area. See LBP-16-7, 83 NRC at 369-71, 396-98. The Board also observed that although “this proceeding had then been pending for over four years, and even though the NRC Staff took two more years to complete its EA,” and other field survey approaches had been considered, the Staff essentially adopted Crow Butte’s suggested “open site” proposed survey approach “in less than a month,” established “an extremely short turnaround, allowing only fourteen days within which to respond,” and then “pushed for site reviews to be completed in less than a month thereafter.” See *id.* at 398; see also *id.* at 379-80.

¹³⁴ See Petition at 20-21.

¹³⁵ Our colleagues in the dissent rely on the fact-specific findings in a Ninth Circuit Court of Appeals case as instructive in this proceeding. See Chairman Svinicki and Commissioner Caputo, dissenting at pp. 282, 285-87 (citing *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 811 (1999)). Respectfully, we view *Muckleshoot* as inapplicable and distinguishable. Given the procedural posture of *Muckleshoot*, the Ninth Circuit reviewed the facts of the case *de novo*. See *Muckleshoot*, 177 F.3d at 804. By contrast, a much more stringent factual standard of review — clear error — applies here. See 10 C.F.R. § 2.341(b)(4)(i). Further, while the court in *Muckleshoot* was “unable to conclude that the Forest Service failed to make a reasonable and good faith effort to identify historic properties” it ultimately reversed the agency’s decision on other grounds. *Muckleshoot*, 177 F.3d at 807, 809. In so ruling, the court stated that “the Forest Service will have an opportunity to re-open its quest for and evaluation of historic sites on Huckleberry Mountain.” *Id.* at 807.

¹³⁶ Our decision to deny Crow Butte’s petition as to LBP-16-7 should not be understood as a merits-based view of our own on the adequacy of the Staff’s cultural resources analysis or the need for any particular further Staff activities.

IV. CONCLUSION

For the reasons discussed above, Crow Butte's petition for review of LBP-15-11 and LBP-16-7 is *denied*.

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 8th day of October 2020.

Additional Views of Commissioner Wright

My colleagues in the dissent view this case as involving legal error. Specifically, my colleagues view the Board's decision as requiring the Staff to take specific actions to cure the noted NEPA and NHPA deficiencies, instead of assessing the Staff's actions under a "reasonable and good faith effort" standard.¹ Based on that, they would overturn the Board's decision. While I respect their views, I do not read the Board as requiring any particular action to cure the identified deficiencies. In fact, the Board made clear that it did "not direct the NRC Staff regarding the specifics as to how it should achieve [compliance with NEPA and the NHPA]."² For this reason, I do not view this case as containing legal error on the Board's part. Therefore, I view this case through the lens of the factual standard of review, clear error.

The standard for showing "clear error" is "a difficult one to meet: to do so, a petitioner must demonstrate that the Board's determination is 'not even plausible in light of the record as a whole.'"³ As noted in the majority opinion, even where the "record evidence . . . may be understood to support a view sharply different from that of the Board" does not mean that the "Board's own view of the evidence was 'clearly erroneous.'"⁴ In its petition here, Crow Butte does not address the Board's specific reasoning regarding the Staff's efforts and therefore does not identify a clear factual error in the Board's decision.

After reviewing the Board's comprehensive, case-specific factual findings, I find the Board's conclusions plausible and therefore defer to the Board. In particular, I find that the Board assessed the Staff's efforts to determine reasonableness and, based on its review of the factual record, found that these efforts did not comply with the Staff's NEPA and NHPA obligations. For example, as noted in the majority opinion, the Board emphasized that at the time the Bozell & Pepperl survey was conducted, the NHPA did not require agencies to "consider the cultural or religious significance that tribes may ascribe to TCPs, as was required in 2007 when Crow Butte applied to renew its license."⁵ The dissent points to the Board's description of the Bozell & Pepperl survey as a

¹ Chairman Svinicki and Commissioner Caputo, dissenting at pp. 284-85, 286-87 (Dissent).

² LBP-16-7, 83 NRC at 414.

³ See, e.g., *Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-16-13, 83 NRC 566 (2016) (quoting *Shaw AREVA MOX Services, LLC* (Mixed Oxide Fuel Fabrication Facility), CLI-15-9, 81 NRC 512, 519 (2015)); *Honeywell International, Inc.* (Metropolis Works Uranium Conversion Facility), CLI-13-1, 77 NRC 1, 18-19 (2013).

⁴ See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-03-8, 58 NRC 11, 26 (2003) (quoting *Kenneth G. Pierce* (Shorewood, Illinois), CLI-95-6, 41 NRC 381, 382 (1995) (internal quotation marks omitted)); see also, e.g., *Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-16-13, 84 NRC 566, 586 (2016).

⁵ LBP-16-7, 83 NRC at 384.

Class III archaeological survey that covered a significant portion of the license area as one means to distinguish precedent the Board cited.⁶ But I find reasonable that the Board considered the adequacy of the Staff's efforts and the Bozell & Pepperl survey based on the legal obligations existing when the challenge was brought, and not on the legal obligations in place decades earlier, when that survey was prepared.

The dissent also raises concerns about the majority setting precedent that will adversely impact the Staff and applicants in various licensing reviews going forward. I do not view this case as setting precedent for other cases and licensing boards. On the contrary, I view the majority's decision as declining to take review of LBP-16-7 and LBP-15-11 based on the standard of review set forth in our regulations, these Board decisions, Crow Butte's petition for review, and the record in this case. Finally, my decision to deny Crow Butte's petition does not indicate a merits-based view on the adequacy of the Staff's cultural resources analysis or the need for any specific Staff activities.

⁶ See Dissent at pp. 284-85 n.17.

Chairman Svinicki and Commissioner Caputo, dissenting

In this Order, the majority legitimizes a Board decision that ignored the legal standard for the sufficiency of the Staff's NEPA and NHPA reviews. The Board's decision inappropriately focused only on whether any historic properties had actually been identified rather than on whether the staff made a "reasonable and good faith effort to carry out appropriate identification efforts."¹ The majority upholds this error and declines to apply the well-established legal principles that guide NHPA and NEPA review. We would overturn this legal error and the Board's conclusion that the Staff must conduct a new field investigation to comply with NEPA and NHPA.² Nothing in the text of those statutes, implementing regulations, guidance documents, or case law compels such a result. In fact, when presented with a similar set of facts, the Ninth Circuit Court of Appeals held that a field investigation was not required.³ As a result, the majority needlessly prolongs this case, creates a precedent that will impose unnecessary and confusing burdens on NRC Staff and applicants, and effectively allows third-parties to indefinitely impede NRC reviews by withholding their participation.

NRC precedent, Federal caselaw, and NEPA's implementing regulations acknowledge that NEPA is governed by a "rule of reason" that requires an agency to include only in NEPA documentation information that is reasonably available.⁴ Likewise, NHPA's implementing regulations recognize that an agency may not be able to identify all historic properties and hence require a "reasonable and good faith" effort to identify historic properties.⁵ Despite these principles, the majority's opinion expands a troubling line of precedents upholding Board decisions faulting Staff NEPA and NHPA analyses for omitting unavailable information while ignoring whether the Staff in fact took reasonable steps to

¹ 36 C.F.R. § 800.4(b)(1).

² LBP-16-7, 83 NRC at 393 ("a new field investigation appears to be the only 'reasonable and good faith effort' for identifying TCPs within the license area.").

³ *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 811 (1999) (finding the Forest Service undertook reasonable identification efforts even when "the Forest Service resisted the Tribe's requests for a formal study of cultural properties" and given "a more thorough exploration, the Forest Service might have discovered more eligible sites").

⁴ *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-22, 72 NRC 202, 208 (2010) (finding that some information, needed for a NEPA review, may "prove to be unavailable, unreliable, inapplicable, or simply not adaptable" and directing the Staff to provide a reasonable analysis of available information in such cases); *Town of Winthrop v. FAA*, 535 F.3d 1, 13 (1st Cir. 2008) ("It is not unreasonable for an agency to decline to study in an SEIS a pollutant for which there are not yet standard methods of measurement or analysis."); 40 C.F.R. § 1502.21 (directing agencies to include essential information in an environmental impact statement unless "the overall costs of obtaining it are unreasonable or the means to obtain it are not known").

⁵ 36 C.F.R. § 800.4(b)(1).

acquire that information.⁶ Such outcomes place the Staff in an untenable position of seeking missing information without any idea of whether its original efforts to obtain that information were reasonable and if not, what would be reasonable. Unsurprisingly, the Staff has struggled to fulfill a similarly nebulous mandate in another uranium recovery case, leading to years of squandered effort that ultimately yielded no additional information.⁷

The issue of accounting for unavailable information in NEPA and NHPA analyses has arisen with regularity in NRC adjudications. However, the Board and Commission's failure to articulate what constitutes a reasonable effort to acquire such information leaves future litigants with little certainty on how the agency will address these issues. With an array of advanced reactor applications on the horizon, this long-standing flaw in our NEPA and NHPA processes glares more brightly than ever and may stymie Congress's and the NRC's efforts to efficiently right-size the licensing process for such applications. As explained below, adhering more directly to the requirements of NEPA and NHPA as articulated in the statutes, implementing regulations, and legal precedent would enhance certainty in future NRC adjudications and avoid the unnecessary and wasteful result of the majority's holding in this case.⁸ Therefore, we dissent.

A. The Board Incorrectly Determined a New Field Investigation Was Required

1. National Historic Preservation Act

Crow Butte argues that contrary to the standard discussed above, the Board made a legal error by concluding that the Staff could meet its NHPA obligations in this proceeding “only through a ‘new field investigation.’”⁹ The Board acknowledged that 36 C.F.R. § 800.4(b)(1), the relevant NHPA implementing regulation, requires only that agencies “make a ‘reasonable and good faith effort’”

⁶ *E.g., Powertech (USA), Inc. (Dewey-Burdock In Situ Uranium Recovery Facility)*, CLI-16-20, 84 NRC 219, 247-48 (2016) (rejecting Staff argument that the board committed legal error by not considering whether the Staff made reasonable efforts to acquire missing information because “the fundamental issue . . . is inherently factual”).

⁷ *Powertech (USA), Inc. (Dewey-Burdock In Situ Uranium Recovery Facility)*, LBP-19-10, 90 NRC 287, 297-310 (2019) (describing the Staff's unsuccessful four-year effort to obtain missing information on cultural resources following a ruling that the Staff's initial four-year effort to obtain missing information on cultural resources did not satisfy NEPA or NHPA).

⁸ Because we would find that the Board's merits decision rested on a clear legal error, we would not reach the issue of whether the underlying contention was timely. However, we express concern that the majority's position on timeliness could potentially weaken the rigorous requirement that timeliness of a contention be tied to the availability of the information and not to the issuance of a specific Staff document. We therefore would be hesitant to endorse such an approach.

⁹ Petition at 3 (*quoting* LBP-16-7, 83 NRC at 393).

to identify historic properties.¹⁰ To understand what constitutes a “reasonable and good faith effort,” the Board reviewed precedents from the Federal Circuit Courts, ACHP guidance, and documents from the NRC Staff.¹¹ From this review, the Board concluded that in this proceeding, “a new field investigation appears to be the *only* ‘reasonable and good faith effort’ for identifying TCPs within the license area.”¹²

On its face, however, the Board’s interpretation of 36 C.F.R. § 800.4(b)(1) constitutes a clear departure from the meaning of the regulation. The Board relied on authorities that certainly suggest that the level of effort an agency must expend to meet the “reasonable and good faith effort” standard could depend on the circumstances of a given proceeding.¹³ The Board also concluded that several of these sources indicated that where previous field investigations did not adequately identify TCPs, a new field investigation may be “appropriate,”¹⁴ “reasonable,”¹⁵ or even “preferred.”¹⁶ But no authority on which the Board relies clearly advances a new field investigation as the required or “only” way to meet the “reasonable and good faith effort” standard with respect to TCPs.¹⁷ By

¹⁰ LBP-16-7, 83 NRC at 353 (quoting 36 C.F.R. § 800.4(b)(1)).

¹¹ *Id.* at 390-93 (citing *Montana Wilderness Association v. Connell*, 725 F.3d 988 (9th Cir. 2013); *Pueblo of Sandia v. United States*, 50 F.3d 856, 860 (10th Cir. 1995); Meeting the “Reasonable and Good Faith” Identification Standard in Section 106 Review, ACHP, at 3, available at <http://www.achp.gov/digital-library-section-106-landing/meeting-reasonable-and-good-faith-identification-standard.pdf>) (last retrieved Aug. 3, 2020) (ACHP Guidance); Ex. NRC-012, U.S. NRC Materials License SUA-1534, § 9.8 (Nov. 5, 2014) (Crow Butte License); Ex. BRD-023, Letter from Kevin Hsueh, Chief, Environmental Review Branch, NRC Office of Federal and State Materials and Environmental Management Programs (Oct. 31, 2012) at 1 (Hsueh Letter)).

¹² LBP-16-7, 83 NRC at 393 (emphasis added) (quoting 36 C.F.R. § 800.4(b)(1)). Throughout its discussion of standards and precedents, it is apparent that the Board considers a “field investigation” to be essentially a field survey. *Id.* at 392. This limited view of a “field investigation” is particularly troubling given the Tribe’s resistance to consulting with and providing information to the Staff. *See id.* at 381.

¹³ *Pueblo of Sandia*, 50 F.3d at 861-62.

¹⁴ LBP-16-7, 83 NRC at 392 (citing ACHP Guidance).

¹⁵ *Id.* (citing Hsueh Letter).

¹⁶ *Id.* (citing Ex. NRC-012, Crow Butte License § 9.8).

¹⁷ To the extent the Board found *Montana Wilderness* controlling, *Id.* at 392-93, we find that precedent distinguishable. Unlike *Montana Wilderness*, the subject of this proceeding is not a federal plan to protect and preserve historic objects but rather a request from a private entity to renew a license for a uranium recovery facility. *Montana Wilderness*, 725 F.3d at 1008. Moreover, while *Montana Wilderness* rested in part on the BLM’s failure to follow its own guidance on when to prepare new field surveys, no party has pointed to any NRC guidance that would require the Staff to do so in this case. *Id.* Additionally, while the previous surveys in *Montana Wilderness* only covered a small percentage of the total acreage in the Monument, *id.*, the Board found that the Bozell & Pepperl Survey “was a Class III archeological survey . . . of a significant portion

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providing this direction to the Staff, the Board exceeded its authority by veering into the realm of case management — an area squarely under the direction of Staff management and the Commission itself¹⁸ — in prescribing a process to resolve the deficiencies the Board identified in the Staff’s review. But more essentially, by pivoting its attention to whether the Staff successfully completed a new field investigation, the Board ignored the more fundamental question: whether the Staff’s overall efforts to identify TCPs, including the Staff’s efforts to complete a field survey, were, in fact, reasonable.

In *Muckleshoot Indian Tribe v. U.S. Forest Service*, the Ninth Circuit examined a similar fact pattern and concluded that the agency efforts were reasonable. In that proceeding, the court considered a challenge from the Muckleshoot Indian Tribe to a proposed exchange of land, which contained TCPs, between the Forest Service and the Weyerhaeuser Company.¹⁹ The record in that proceeding indicated “that the Forest Service researched historic sites in the Exchange area and communicated several times after the commencement of the public comment period with Tribal officials regarding the identification and protection of cultural resources that might be affected by the Exchange.”²⁰

The Muckleshoot Indian Tribe claimed that “the Forest Service ignored its claims that numerous other places of historic importance were situated on the portions of [land] proposed for exchange.”²¹ Specifically, the Muckleshoot Indian Tribe requested “a study of its historical places and trails,” but the Forest Service responded by requesting “the immediate disclosure of any information the Tribe possessed about those sites,” which the “Tribe was unable, or unwilling, to provide.”²² The Ninth Circuit noted that the Forest Service’s identification efforts “were in tension with the recommendations” from the applicable ACHP

of the license area.” LBP-16-7, 83 NRC at 384. Most significantly, unlike the land use plan in *Montana Wilderness*, which would concentrate traffic and activity in certain corridors within the area of effect and as a result would likely damage unidentified resources, Crow Butte’s license renewal application does not propose to conduct extensive new or substantially changed activities in the license area that would have a high probability of disturbing undiscovered resources. *Montana Wilderness*, 725 F.3d at 1008.

¹⁸ See, e.g., *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-6, 59 NRC 62, 74 (2004) (“NRC Staff Reviews, which frequently proceed in parallel to adjudicatory proceedings, fall under the direction of Staff management and the Commission itself, not the licensing boards.”).

¹⁹ *Muckleshoot Indian Tribe*, 177 F.3d at 802-05. While the Ninth Circuit appeared also to consider the NHPA’s consultation requirements in *Muckleshoot Indian Tribe*, *id.* at 805-06 (finding an “opportunity to interpret the specific consultation requirements of NHPA”), its analysis and holding directly address the identification component of the NHPA, *id.* at 807 (declining to find that the Forest Service “failed to make a reasonable and good faith effort to identify historic properties”).

²⁰ *Id.* at 806.

²¹ *Id.*

²² *Id.*

guidance and “could have been more sensitive to the needs of the Tribe.”²³ Consequently, the court concluded that “[g]iven more time or a more thorough exploration, the Forest Service might have discovered more eligible sites.”²⁴ But the court also noted that the Muckleshoot Indian Tribe “had many opportunities to reveal more information to the Forest Service.”²⁵ Ultimately, the court found no violation of the NHPA section 106 identification requirement because of those opportunities.²⁶

Muckleshoot Indian Tribe serves as a useful guide to understanding what a “reasonable and good faith” effort encompasses. In this proceeding, the Staff, like the Forest Service in *Muckleshoot Indian Tribe*, successfully identified historic properties in the area of effect, with the exception of TCPs.²⁷ And, as in *Muckleshoot Indian Tribe*, the Staff after several repeated attempts was ultimately unable to effectively engage tribal expertise in identifying those TCPs, potentially leaving many TCPs unidentified.

To the extent a contrast exists between the two cases, it relates to the Staff having undertaken more extensive efforts to avail itself of the Oglala Sioux Tribe’s expertise than the Forest Service did with respect to the Muckleshoot Indian Tribe. The Staff clearly provided the Oglala Sioux Tribe an opportunity to provide relevant information regarding TCPs at the scheduled May 23, 2013, government to government meeting.²⁸ Moreover, unlike the Forest Service, which after several communications simply requested the immediate disclosure of all relevant information, the Staff spent years communicating with a number of Tribes and the licensee and the better part of a year attempting to design a survey. When the Staff was unable to achieve consensus on the approach for the survey, it held an open-site survey, to which the Oglala Sioux Tribe, along with many other Tribes, was invited. Thereafter, the Staff continued to work toward facilitating government to government meetings.²⁹ Perhaps the Oglala Sioux Tribe, like the Muckleshoot Indian Tribe, preferred a more formal study. But the Staff’s efforts certainly provided the Oglala Sioux Tribe with “an opportunity[y] to reveal more information” to the agency in addition to an opportunity

²³ *Id.* at 807.

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

²⁷ Compare LBP-16-7, 83 NRC at 384, 402 (noting the Bozell & Pepperl Survey yielded “valuable information about historic properties and that, as such, it is clearly pertinent to this license renewal” and it constituted a “good start” for making a reasonable and good faith effort) with *id.* at 389 (finding that the Bozell and Pepperl Survey did “not meet the requirement of the current version of the NHPA with respect to TCPs”).

²⁸ *Id.* at 382-83.

²⁹ *Id.* at 367-82.

to assist the agency in attempting to identify additional TCPs beyond those already known to the Tribe.³⁰ Thus, if anything, the Staff provided the Oglala Sioux Tribe with a greater opportunity to provide information regarding TCPs than that provided to the Muckleshoot Indian Tribe by the Forest Service.

Our colleagues suggest that *Muckleshoot Indian Tribe* is “inapplicable and distinguishable” because the Ninth Circuit employed a different standard of review and ultimately remanded the case to the Forest Service on other grounds.³¹ But we do not rely on *Muckleshoot Indian Tribe* to conclude that Crow Butte’s appeal meets a specific standard for review; rather we look to *Muckleshoot Indian Tribe* to understand the meaning of the term “reasonable and good faith effort.” The standard of review the Ninth Circuit used is therefore irrelevant to our analysis.³² Moreover, Federal Courts of Appeals frequently consider many claims in an opinion; the Ninth Circuit’s remand to the Forest Service on other grounds does not provide additional insight into its discussion of whether the Forest Service fulfilled its identification obligations under the NHPA. To the extent these features represent the greatest differences between *Muckleshoot Indian Tribe* and the instant proceeding, we conclude that the Ninth Circuit’s analysis of the “reasonable and good faith” standard in *Muckleshoot Indian Tribe* is indeed on point.

Therefore, the Board’s failure to explicitly consider whether these efforts constituted a “reasonable and good faith” effort amounts to clear legal error. Rather, the record establishes that the Staff met this standard in providing the Oglala Sioux Tribe, and other Tribes, a reasonable opportunity to provide the agency information on TCPs. Moreover, the Board’s insistence that the Staff complete a new field investigation represents a dramatic and warrantless expansion of the NHPA’s requirements.

2. National Environmental Policy Act

Crow Butte also argued that the Board erroneously required the Staff to conduct a new field survey to meet NEPA’s “hard look” requirement.³³ According to Crow Butte, “It is well established under NEPA that there will always be

³⁰ *Muckleshoot Indian Tribe*, 177 F.3d at 807.

³¹ Majority Opinion at p. 278 n.135.

³² Moreover, the majority notes that *Muckleshoot Indian Tribe* relied on a *de novo* standard instead of the “clear error” standard of review the majority employed. However, because Crow Butte claimed that the Board erred legally in determining that a new field investigation is the only way to meet the “reasonable and good faith effort” standard, a *de novo* standard of review is consistent with our precedents. *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC 1, 11 (2010).

³³ Petition at 3.

more data that could be gathered, but that nonetheless the NRC at some point must draw the line and move forward with decisionmaking.”³⁴ Crow Butte is correct as a matter of law; we have previously held that some information, needed for a NEPA review, may “prove to be unavailable, unreliable, inapplicable, or simply not adaptable” and directed the Staff to provide a reasonable analysis of available information in such cases.³⁵ Indeed, the Supreme Court has cautioned, “The scope of the agency’s inquiries must remain manageable if NEPA’s goal of ensuring a fully informed and well considered decision is to be accomplished.”³⁶

The Board concluded that the Staff’s NEPA analysis was deficient in large part because it found that the Staff had not fulfilled its Identification Obligations under the NHPA. Thus, the Board found that the Staff’s EA did not take a “hard look” at the potential environmental impacts of the license renewal on TCPs and cultural resources.³⁷ This finding rests on a legal error similar to the error supporting the Board’s NHPA conclusion: the Board only identified potentially missing information without considering whether the Staff undertook reasonable efforts to obtain that information. However, the Board’s holding that the Staff undertook a “genuine effort” to consult with the Oglala Sioux on identifying TCPs in the license area at the scheduled government to government meeting on May 23, 2013, as well as the additional Staff efforts undertaken for identification, should have been judged to satisfy NEPA’s “hard look” requirement.³⁸ Ironically, the Board itself noted that the survey approach favored by the Tribes was likely unfeasible from a cost standpoint and that the Oglala Sioux Tribe actively resisted consulting with and providing information to the staff.³⁹ Both suggest that Tribal participation in the survey was not reasonably available. Therefore, the Board’s ruling on NEPA also significantly expands the scope of that statute’s requirements by demanding that the Staff make extraordinary efforts to acquire missing information even after it became apparent that the information could not be obtained through reasonable steps, potentially requiring, in the Board’s own view, steps that were likely unfeasible.

The Board also faulted the EA for not adequately responding to comments

³⁴ *Id.*

³⁵ *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-22, 72 NRC 202, 208 (2010).

³⁶ *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 776 (1983) (quotations omitted).

³⁷ LBP-16-17, 83 NRC at 402-04.

³⁸ *Id.* at 382-83.

³⁹ *Id.* at 381 (noting that the Oglala Sioux Tribe “eventually actively resisted the consultation process”); *id.* at 398 (noting that “the intensive TCP survey preferred by the tribes may well have been infeasible on a cost basis”).

objecting to the results of the TCP Survey.⁴⁰ By emphasizing the Staff's failure to analyze comments in the EA, the Board seeks to impose further requirements on the Staff that are not found within the four corners of the NEPA Statute or within our implementing regulations.⁴¹ While the Staff is required to submit a request for comments on draft environmental impact statements,⁴² no such requirement exists for environmental assessments.⁴³ Thus it was also improper for the Board to find lacking the Staff's comment response in the EA when none is required.⁴⁴

B. No Clear Path to Resolution

The majority declines to apply these well-established legal principles to resolve this proceeding. The majority avoids the question of whether the Board wrongly found that NEPA and NHPA required a new field investigation and instead considers whether Crow Butte's appeal demonstrates the Board committed a factual error in weighing the evidence before it.⁴⁵ But this approach places the cart before the horse: if the Board selected the wrong legal standard,

⁴⁰ *Id.* at 402-03.

⁴¹ *See* Tr. at 2341.

⁴² 10 C.F.R. § 51.73.

⁴³ *See id.* § 51.33 (“[T]he appropriate NRC staff director *may* make a determination to prepare and issue a draft finding of no significant impact for public review and comment before making a final determination”) (emphasis added).

⁴⁴ Additionally, while the EA may not address the comments at issue, the record establishes that the Staff did consider those comments and they had no bearing on the Staff's ultimate conclusions in the EA. At hearing, Staff's witness explained that the comments were “general in nature and so far out of scope of the overall NEPA process and the specific Section 106 review pertaining to Crow Butte license renewal, that staff did not feel that that was necessary nor ignoring any obligations it had in any of the regulations.” Tr. at 2342. Thus, Staff clarified during the adjudicatory proceeding that it had evaluated the comments and that the comments did not influence the Staff's ultimate conclusion.

⁴⁵ Majority Opinion at pp. 272-77. Commissioner Wright argues that Board did not err legally because it did “not direct the NRC Staff regarding the specifics as to how it should achieve [compliance with NEPA and the NHPA].” Additional Views of Commissioner Wright at 1 (*quoting* LBP-16-7, 83 NRC at 414 (alteration in original)). While the Board may not have demanded specific actions to complete a new field investigation, as explained above, it unduly expanded the requirements of NEPA and NHPA in this proceeding by concluding that “a new field investigation appears to be the *only* ‘reasonable and good faith effort’ for identifying TCPs within the license area.” LBP-16-7, 83 NRC at 393 (emphasis added). Moreover, Commissioner Wright contends that the majority opinion will not set a precedent for future proceedings; rather he suggests that this case is unique “based on the standard of review set forth in our regulations, these Board decisions, Crow Butte's petition for review, and the record in this case.” Additional Views of Commissioner Wright at p. 281. However, because the record, regulations, and standard of review in this case overlap significantly with other NRC proceedings, we are not similarly comforted.

then whether it erred in weighing the evidence is irrelevant. The Board's analysis was flawed from the start because it solely focused on whether the Staff successfully completed a new field investigation, not whether the Staff made a reasonable attempt to do so. Moreover, the Board's opinion leaves the Staff with no clear path toward resolving this proceeding.

As noted above, the Commission came to a similar result in the *Powertech* proceeding, in which the remanded hearing has only recently concluded. Examining that opinion further illustrates the infirmities in the majority's approach. In that case, which also involved failed coordination with the Oglala Sioux Tribe to identify TCPs, the Staff argued that "the Board misapplied NEPA's hard-look standard as a matter of law, under which the Board should assess whether the Staff 'made reasonable efforts' to obtain complete information on the cultural resources at issue here."⁴⁶ Similar to the majority opinion here, the Commission in *Powertech* avoided addressing this legal appeal by concluding, "the fundamental issue here — whether the Staff complied with NEPA — is inherently factual."⁴⁷ By taking this approach, the Commission provided the staff with no explanation on what efforts were reasonable, which in turn led to the parties floundering through an additional four years of efforts to agree on an approach to identify TCPs. Throughout that time, the Staff and Tribe engaged in a process where the parties would apparently reach consensus only to have the Tribe shift away from that agreement.⁴⁸ Ultimately, the Staff was unable to effectuate an agreement with the Oglala Sioux Tribe to identify TCPs, despite nearly a decade of effort to do so.⁴⁹

This path was enabled by the Board's treatment of the Oglala Sioux Tribe's expertise regarding historic properties. After years of weighing evidence on TCPs, the Board noted the Staff's conclusion that while a contractor archaeologist "might be able to identify physical remains of certain activities, . . . only Tribal members can assign significance to those sites' and identify 'sacred locations that are intangible or not readily identifiable as archaeological sites, such as landforms or places of worship and ceremony.'"⁵⁰ The *Powertech* Board thus

⁴⁶ CLI-16-20, 84 NRC at 247 (quoting NRC Staff's Petition for Review of LBP-15-16 (May 26, 2016) at 17-18).

⁴⁷ *Id.*

⁴⁸ *Powertech (USA), Inc. (Dewey-Burdock In Situ Uranium Recovery Facility)*, LBP-19-10, 90 NRC 287, 329-34 (2019).

⁴⁹ *Id.* at 297-310.

⁵⁰ LBP-19-10, 90 NRC at 334-35 (quoting NRC-176-R, NRC Staff Direct Testimony, at 5-6, 7 (alterations in original) (emphasis added)). The Board in this proceeding similarly emphasized the Tribe's expertise. See LBP-16-7, 83 NRC at 387 ("[A] literature review is inferior to the expertise of the Oglala Sioux Tribe witnesses who testified to the contrary"); *Id.* at 391 ("The ACHP Guidance goes on to explain that the 'reasonable and good faith effort' required of each

(Continued)

held, the “NRC Staff thus concluded, and we find reasonably so, that it could not complete [the field investigation] without the cooperation and participation of the Oglala Sioux Tribe.”⁵¹

The majority’s opinion in this proceeding similarly positions the agency for failure. By declining to overturn the Board’s conclusion that a new field investigation is necessary, the majority supplants the correct legal standard of reasonableness with a new standard focusing solely on identification. By endorsing this new standard, the majority leaves the Staff in the unenviable position of needing to do more without any notion of what is actually reasonable and adequate. Further, the parties to this proceeding significantly overlap the parties in the *Powertech* case; thus, there is little reason to think the Staff will be successful in additional efforts. Requiring the Staff and Oglala Sioux Tribe to come to terms on an approach to identify TCPs brings to mind the saying about repeatedly undertaking the same action and expecting a different result.

The majority claims that “the Board’s decision does not conclude that identification efforts can only be satisfied by a field investigation conducted by Oglala Sioux Tribe members. In fact, the Board acknowledged that the Staff ‘need not rely on the Oglala Sioux Tribe to meet its Identification Obligations under the NHPA.’”⁵² In light of the Board’s treatment of tribal expertise in *Powertech*, such pronouncements ring hollow. Consequently, the proposition that the Staff could remedy the lack of information on TCPs without engaging Tribal expertise appears naïve at best. Rather, as the Board itself observed earlier in this proceeding, “‘It would be ethnocentric in the extreme to say that ‘whatever the Native American group says about this place, I can’t see anything here so it is not significant.’”⁵³ However, the majority’s opinion places the Staff squarely in the dilemma of either risking such ethnocentrism by undertaking a field investigation without the Tribe or following in the footsteps of the failed *Powertech* process and seeking to design a field investigation in which the Tribe, who actively resisted consultation in this proceeding, *might* participate. Neither approach presents a viable alternative for concluding this proceeding.

federal agency envisions specific identification carried out by qualified individuals who “have a demonstrated familiarity with the range of potentially historic properties that may be encountered, and their characteristics,” and who acknowledge “the special expertise possessed by Indian tribes . . . in assessing the eligibility of historic properties that may possess religious and cultural significance to them.”) (citing ACHP Guidance at 2). Similarly, the Board faulted the open site approach as not including the expertise of tribal elders. *Id.* at 398 (“[A] proper TCP survey . . . involves elders and bringing the elders to the field”) (quoting Tr. at 2280).

⁵¹ LBP-19-10, 90 NRC at 335.

⁵² Majority Opinion at pp. 276-77 (quoting LBP-16-7, 83 NRC at 398).

⁵³ LBP-16-7, 83 NRC at 386 (quoting National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties (1998), at 8).

As evidenced in *Powertech*, the majority's opinion also shifts effective control of these reviews solely into the hands of a third-party with "necessary" expertise. Rather than an NHPA review proceeding as a partnership between federal agencies and affected stakeholders, as envisioned by the NHPA and its regulations,⁵⁴ the majority's position would provide the means for a party to halt an agency's environmental review and licensing process as a whole by withholding support and expertise necessary to complete an adequate site survey. We find no support for this shift that would grant an adverse party such a stranglehold over NRC licensing proceedings.

C. An Unworkable Framework for Future NRC Adjudications

The issue of preparing NEPA documentation in the face of incomplete or unavailable information has arisen with regularity in NRC adjudications.⁵⁵ But Federal precedent on this topic generally focuses on whether the missing information is "essential" to the NEPA analysis as opposed to whether the agency efforts to acquire such information were reasonable.⁵⁶ Therefore, determining what constitutes a reasonable effort may prove difficult in the future. In our view, under the established legal standard the Staff's initial efforts to obtain cultural resources information in this proceeding illustrate a reasonable effort to obtain the missing information. First, the Staff sent letters to 18 Tribes, including the Oglala Sioux Tribe, on January 18, 2011, that invited the Tribes to participate in formal consultation and provide "any known information on any areas on the project site that the Tribes believe have religious and cultural significance."⁵⁷ Second, the Staff took steps that were likely to lead to obtaining the missing information, in this case by seeking to conduct an on-site cultural resources survey.⁵⁸ Finally, the Staff discontinued further efforts upon learning

⁵⁴ See 36 C.F.R. § 800.2(c)(2).

⁵⁵ E.g., *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 438-44 (2011) (considering claim that applicant must provide a probabilistic analysis of new seismic information or show that the cost of such analysis would be exorbitant); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant Independent Spent Fuel Storage Installation), CLI-08-1, 67 NRC 1 (2008) (considering claim that NRC did not fully disclose potential radiological impacts of a terrorist attack in its supplemental environmental impact statement); *Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 235-36 (2007) (discussing the extent to which missing information constitutes a "fatal flaw" to a NEPA analysis for an Early Site Permit).

⁵⁶ E.g., *Friends of Animals v. Romero*, 948 F.3d 579, 586 (2d Cir. 2020) (determining that EIS was not deficient under 40 C.F.R. § 1502.22 despite lacking information on deer movement because that information was not essential to selecting between alternatives).

⁵⁷ EA at 55.

⁵⁸ *Id.* at 55-57.

that the information could not be reasonably obtained.⁵⁹ In our view, these are the required elements that an approach satisfying a “rule of reason” (at least one worthy of the name) should contain when needed information is unavailable under NEPA. Moreover, as explained in our additional views to the order in *Powertech* issued today, had the Commission applied these basic principles earlier in that proceeding, the agency would have spared the parties years of wasted effort and time.⁶⁰ The same will likely prove true in this proceeding. Additionally, as discussed above, the Staff’s efforts clearly constitute “a reasonable and good faith effort” to identify historic properties under NHPA.⁶¹

Developing a legal framework for agency adjudicators to respond to claims of incomplete information is critical. The agency expects to receive a number of complex applications for advanced reactor designs in the near future. Congress recently passed legislation seeking to streamline our safety review for such applications, suggesting that the efficient and effective review of these applications is a national priority.⁶² However, commenters remain concerned that without similar efforts to seek efficiency in our NEPA process, these efforts will prove ineffective.⁶³ They note that the length and cost of our existing NEPA process pose a steep and potentially insurmountable obstacle to advanced reactors.⁶⁴ Given the novel nature of these designs and their deployment, some agency NEPA reviews for advanced reactor applications will likely touch on areas where environmental information is undeveloped or unavailable. Consequently, it is beyond time for the Commission to issue a definitive statement to parties in NRC NEPA litigation defining the elements of demonstrable sufficiency in efforts to acquire missing information. The majority’s opinion does not accomplish that but further muddies the water on what parties must do to meet their environmental responsibilities and sets a precedent that third parties have the ability to hold reviews hostage. Applicants and Staff now face the continued prospect, demonstrated by this proceeding, that they will be asked to spend years chasing the mirage of complete information until agency adjudicators or intervenors decide the effort is sufficient or, more troublingly, those

⁵⁹ LBP-16-7, 83 NRC at 398 (noting that “the intensive TCP survey preferred by the tribes may well have been infeasible on a cost basis”).

⁶⁰ *Powertech (USA), Inc. (Dewey-Burdock In Situ Uranium Recovery Facility)*, CLI-20-9, 92 NRC 295, 315 (2020) (Additional Views of Chairman Svinicki and Commissioner Caputo).

⁶¹ *Muckleshoot Indian Tribe*, 177 F.3d at 807.

⁶² Nuclear Energy Innovation and Modernization Act, Pub. L. 115-439, § 103, 132 Stat. 5565, 5572 (2019).

⁶³ Nuclear Innovation Alliance, *Nuclear Innovation and NEPA: Streamlining NRC NEPA Reviews for Advanced Reactor Demonstration Projects While Safeguarding Environmental Protection*, 5-6 (Sep. 2019) (available at nuclearinnovationalliance.org/resources) (last visited Aug. 3, 2020).

⁶⁴ *Id.* at 26.

applicants simply decide to abandon their efforts in the face of this Gordian knot of ambiguity that the Commission continues to leave unresolved as a puzzle for the future.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

Docket No. 40-9075-MLA

POWERTECH (USA) INC.
(Dewey-Burdock *In Situ* Uranium
Recovery Facility)

October 8, 2020

NEPA: UNAVAILABLE INFORMATION

Although Council on Environmental Quality regulations are not binding on the NRC, the NRC uses them for guidance. Section 1502.21 of 40 C.F.R. (formerly 40 C.F.R. § 1501.22) describes an agency's responsibility under NEPA where information is not reasonably available. Under CEQ regulations, "unavailable" information includes information that would be unreasonably costly to gather in terms of both money and time.

STANDARD OF REVIEW

Petitioners did not show that the Board's findings were implausible in light of the record as a whole. The Board's factual findings were therefore entitled to deference.

NEPA: SUPPLEMENTATION OF THE ENVIRONMENTAL IMPACT STATEMENT

The Board did not err in holding that the environmental impact statement is

supplemented by the adjudicatory record. This approach has been accepted as valid by federal courts of appeal. *NRDC v. NRC*, 879 F.3d 1202, 1209-12 (D.C. Cir. 2018); *New England Coal. on Nuclear Pollution v. NRC*, 582 F.2d 87, 94 (1st Cir. 1978); *Citizens for Safe Power v. NRC*, 524 F.2d 1291, 1294 n.5 (D.C. Cir. 1975); *Ecology Action v. AEC*, 492 F.2d 998, 1001-02 (2d Cir. 1974)).

NEPA: SUPPLEMENTATION OF THE ENVIRONMENTAL IMPACT STATEMENT

The Board reasonably found that the reason why additional cultural resources information was unavailable was not in itself significant environmental impact information that would warrant formal supplementation of the environmental impact statement.

NEPA: RULE OF REASON

The Board did not err in holding that the availability or unavailability of information was governed by the “rule of reason.” The Commission rejected petitioner’s argument that NEPA’s “rule of reason” applies only when considering whether an environmental effect is “remote and speculative.”

BOARD EXHIBITS

The Board did not commit a prejudicial procedural error by admitting its own exhibits in adjudicatory proceeding. In our proceedings, the Board has an inquisitorial role in the development of a sound record.

EVIDENCE

Our proceedings are not governed by the Federal Rules of Evidence, although Boards use them as guidance.

EVIDENCE: SETTLEMENT NEGOTIATIONS

The Board did not violate the purpose of Federal Rule of Evidence 408, which bars the use of statements made in settlement negotiations “to prove or disprove the validity or amount of a disputed claim. The Board considered the parties’ statements for another purpose; specifically, to establish that further negotiations were not likely to result in a settlement.

MEMORANDUM AND ORDER

On December 12, 2019, the Atomic Safety and Licensing Board issued its Final Initial Decision in this proceeding on Powertech (USA) Inc.'s (Powertech) application for an *in situ* uranium recovery license for the Dewey-Burdock site in South Dakota.¹ The Oglala Sioux Tribe (Tribe) and a group of individuals and organizations referred to as the "Consolidated Petitioners" (together, Petitioners) seek review of the Board's decision as well as two interlocutory Board orders.² In LBP-19-10, the Board ruled that the NRC Staff had fulfilled its responsibilities under the National Environmental Policy Act (NEPA) to characterize cultural resources at the proposed site using reasonably available information. For the reasons described below, we decline to review the challenged decisions.

I. BACKGROUND

A. Procedural History

In 2010, Petitioners sought and were granted a hearing in this proceeding on several contentions.³ In 2015, after an evidentiary hearing, the Board ruled in favor of the Staff and Powertech with respect to all contentions except for Contentions 1A and 1B.⁴ With respect to Contention 1A, the Board ruled that the Staff had not fulfilled its responsibilities under NEPA to assess the proposed facility's impacts on cultural resources because an adequate cultural resources survey of the site had not been performed.⁵ In so holding, the Board pointed to the Staff's testimony that identifying cultural resources of significance to Native American tribes would require the tribes' participation.⁶ With respect to Contention 1B, the Board held that the Staff had not adequately consulted with the Tribe as required by the National Historic Preservation Act (NHPA).⁷ The Board's decision left the license in place while the Staff worked to remedy the NEPA and NHPA violations. The Staff and Powertech petitioned for review of the Board's ruling on both contentions as did the Tribe and Consolidated

¹ LBP-19-10, 90 NRC 287 (2019).

² Oglala Sioux Tribe's Petition for Review of LBP-19-10, LBP-17-09, and Board Ruling on Motion to Strike (Jan. 21, 2020) (Tribe Petition); Consolidated Intervenor's Petition for Review of LBP-19-10, LBP-17-09 and Board Ruling on Motion to Strike (Jan. 21, 2020) (Consolidated Intervenor's Petition).

³ See LBP-10-16, 72 NRC 361 (2010).

⁴ See LBP-15-16, 81 NRC 618, 653-57 (2015).

⁵ *Id.* at 655.

⁶ *Id.* at 653-54.

⁷ *Id.* at 655-57; see 54 U.S.C. §§ 300101-307108.

Intervenors (with respect to the remedy offered).⁸ We denied all four petitions with respect to the Board's ruling and remedy for Contentions 1A and 1B.⁹

Following the Board's ruling, the Staff resumed its efforts to consult with the Tribe and to arrange for additional surveys of the Dewey-Burdock site with the Tribe's participation.¹⁰ After two years of efforts to coordinate an additional cultural resources survey with the Tribe, the Staff concluded that further consultation would be fruitless and moved for summary disposition of Contentions 1A and 1B. In LBP-17-9, the Board ruled that the Staff had fulfilled its obligations to consult with the Tribe and granted summary disposition of Contention 1B. But the Board found, with respect to Contention 1A, that there was still a material question of fact concerning the reasonableness of the Staff's efforts to characterize cultural resources at the site.¹¹ We declined to review the Board's decision at that time because the ruling was not final.¹²

The Staff again resumed its efforts to organize a site survey with the Tribe's participation. On March 16, 2018, the Staff sent the Tribe a revised proposal for identifying historical, cultural, and religious resources on the site (March 2018 Approach).¹³ The Staff understood that it had the Tribe's agreement to participate in the March 2018 Approach, and it hired a contractor and provided representatives to participate in the survey in mid-June 2018.¹⁴ On June 12, 2018 and June 15, 2018, however, the Tribe sent the Staff proposals containing additional conditions for the Tribe's participation in the surveys.¹⁵ The Tribe's June 2018 proposals would take over a year to complete and cost more than \$2 million.¹⁶ The Staff viewed these counterproposals as "fundamentally incompatible" with the March 2018 Approach, and on June 15, 2018, it discontinued efforts to survey the site.¹⁷

The parties then filed cross-motions for summary disposition, both of which the Board denied.¹⁸ The Board explained that because the Staff had not adequately identified Native American cultural resources on the site, in order to

⁸ See CLI-16-20, 84 NRC 219 (2016).

⁹ *Id.* at 242-51.

¹⁰ See LBP-17-9, 86 NRC 167, 179-83 (2017).

¹¹ See *id.* at 194-201.

¹² CLI-18-7, 88 NRC 1 (2018).

¹³ Ex. NRC-192, Letter from Cinthya I. Román, NRC to Trina Lone Hill, Oglala Sioux Tribe (Mar. 6, 2018) (ADAMS accession no. ML18075A499) (March 2018 Approach).

¹⁴ See LBP-18-5, 88 NRC 95, 116-23 (2018).

¹⁵ See *id.* at 119-21.

¹⁶ See *id.* at 120-21.

¹⁷ Ex. NRC-200, Letter from Cinthya I. Román, NRC, to Kyle White, Oglala Sioux Tribe (July 2, 2018) (ML18183A304).

¹⁸ See LBP-18-5, 88 NRC at 130-32.

comply with NEPA the Staff would have to show that the information was “not reasonably available” under 40 C.F.R. § 1502.22, a Council on Environmental Quality (CEQ) regulation.¹⁹ In LBP-19-10, the Board noted that the NRC is not bound by this regulation, but nonetheless such regulations can serve as guidance in carrying out our NEPA responsibilities:

CEQ regulations generally are not controlling on the NRC, at least to the extent that they have not been incorporated by the agency into 10 C.F.R. Part 51, and the unadopted provisions of 40 C.F.R. § 1502.22 are not binding on the NRC Staff in this case. Nevertheless, the Commission has recognized that such CEQ regulations can be useful guides for determining what actions are reasonable under NEPA.²⁰

Consistent with our case law and past practice, we consider this regulation as guidance.²¹

In LBP-18-5, the Board considered various elements of the March 2018 Approach and found that if the Staff had implemented that approach, its duty to take a “hard look” at cultural effects “might well have been satisfied.”²² But the Board held that there remained a question whether the Staff’s decision to discontinue all efforts to follow that approach was reasonable. It held that the parties could either continue their efforts to agree on a survey, or they could proceed to a second evidentiary hearing on the following questions: (1) whether the March 2018 Approach contained a reasonable methodology for the conduct of the site survey; (2) whether the Staff’s decision to discontinue all work on June 15, 2018, was reasonable; and (3) whether the Tribe’s proposed alternatives to the March 2018 Approach were cost-prohibitive.²³ We denied Powertech’s request for interlocutory review of the Board’s ruling.²⁴

The Staff elected to continue its efforts to conduct a survey with the Tribe’s cooperation and developed a plan that the Board refers to as the February 2019 Methodology.²⁵ On February 22, 2019, the Staff met with the Oglala Sioux Tribal Historic Preservation Officer (THPO) and with THPOs from the Standing Rock, Rosebud, and Cheyenne River Sioux Tribes at the Pine Ridge Reservation in South Dakota.²⁶ After discussions again broke down, the Staff determined that

¹⁹ *Id.* at 128-29.

²⁰ LBP-19-10, 90 NRC at 339 (internal citations omitted).

²¹ *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 443-44 (2011).

²² LBP-18-5, 88 NRC at 126.

²³ *Id.* at 136.

²⁴ CLI-19-9, 90 NRC 121 (2019).

²⁵ *See* LBP-19-10, 90 NRC at 306-10; Ex. NRC-214, Proposed Draft Cultural Resources Site Survey Methodology (Feb. 2019) (ML19058A153) (February 2019 Methodology).

²⁶ *See* LBP-19-10, 90 NRC at 308.

it would not be able to reach an agreement with the Tribe and elected to proceed to a second evidentiary hearing.²⁷

In April 2019, the Board granted the Staff's motion for a hearing on "the reasonableness of the NRC Staff's proposed draft methodology for the conduct of a site survey to identify sites of historic, cultural, and religious significance to the Oglala Sioux Tribe, and the reasonableness of the NRC Staff's determination that the information it seeks to obtain from the site survey is unavailable."²⁸ That is, the Board limited the scope of the hearing to whether the Staff had shown that the information on cultural resources was not reasonably available to the Staff under NEPA.

The NRC Staff filed an initial position statement and exhibits on May 17, 2019.²⁹ On July 17, the Staff filed reply testimony.³⁰ On August 2, 2019, the Tribe filed a motion to strike the Staff's prefiled testimony and exhibits in whole or in part.³¹ The Board denied the Tribe's motion in an unpublished order on August 12, 2019.³²

The hearing took place in Rapid City, South Dakota on August 28 and 29, 2019.

B. Board Decision in LBP-19-10

In LBP-19-10, the Board found that the Staff's proposals in the March 2018 Approach and the February 2019 Methodology were reasonable.³³ The Board noted that the Staff's approaches satisfied all five features the Tribe had described in May 2017 as important to an adequate survey, namely: "(1) hiring a qualified contractor; (2) involving other Tribes; (3) providing iterative opportunities for a site survey; (4) engaging Tribal elders; and, most critically, (5) conducting a site survey using scientific methodology in collaboration with the Tribes."³⁴

²⁷ Motion to Set Schedule for Evidentiary Hearing (Apr. 3, 2019).

²⁸ Order (Granting NRC Staff Motion and Scheduling Evidentiary Hearing) (Apr. 29, 2019) (unpublished) (Order Granting Hearing).

²⁹ NRC Staff's Initial Statement of Position on Contention 1A (May 17, 2019); Ex. NRC-176, Prefiled Direct Testimony of NRC Staff (May 17, 2019) (refiled on May 21, 2019, as NRC-176-R) (ML19242C185).

³⁰ Ex. NRC-225, NRC Staff's Prefiled Reply Testimony (July 17, 2019) (ML19242C236).

³¹ See Oglala Sioux Tribe's Motion to Strike (Aug. 2, 2019) (Motion to Strike).

³² Order (Denying Oglala Sioux Tribe Motion to Strike) (Aug. 12, 2019) (unpublished) (August 12, 2019, Order).

³³ LBP-19-10, 90 NRC at 318.

³⁴ *Id.* at 318-29; see Ex. NRC-190, Oglala Sioux Tribe May 31, 2017, Letter Responding to NRC's April 14, 2017, Letter, at 3-8 (ML17152A109).

The Board further found that the Tribe's lack of cooperation resulted in the cultural resources information being not reasonably available.³⁵ It held that the Tribe's "last-minute attempts in June 2018 to renegotiate fundamental elements of the March 2018 Approach" were not reasonable.³⁶ The Board noted that it had already found, in its 2018 ruling on the motions for summary disposition, that the Tribe's June 2018 counterproposal involved "expanding timeframes and exorbitant costs."³⁷ As a result, it found that the Staff's decision to discontinue its efforts to obtain the Tribe's participation was reasonable.³⁸ It concluded that the Staff had satisfied NEPA's requirements relating to unavailable information, guided by CEQ regulations, and that the Staff had therefore satisfied NEPA's requirement to take a "hard look" at environmental impacts.³⁹

The Board further observed that there is an existing Programmatic Agreement that governs how Powertech will protect any cultural resources that it may encounter as it undertakes construction and operation of its facility.⁴⁰ Compliance with the Programmatic Agreement is a condition of Powertech's license.⁴¹ Among its provisions, the Programmatic Agreement requires that prior to commencing construction activities, Powertech will develop a monitoring plan and employ a qualified archeologist, with preference to employees of tribal enterprises, to serve as a monitor.⁴² Citing the Staff's testimony, the Board amended the license to add a condition requiring that, prior to new construction activities, Powertech provide to the affected Tribes and signatories to the Programmatic Agreement thirty days advance notice of the identity of the monitor who will observe construction activities.⁴³

Finally, the Board held that it was not necessary for the Staff to publish a supplement to its final supplemental environmental impact statement (FSEIS) for the project.⁴⁴ The Board relied on longstanding agency practice that a deficiency

³⁵ LBP-19-10, 90 NRC at 329-34.

³⁶ *Id.* at 335.

³⁷ *Id.* at 331 & n.227.

³⁸ *Id.* at 334-38.

³⁹ *Id.* at 338-41, 345-48.

⁴⁰ *Id.* at 341-45; *see also* Ex. NRC-018-A, Programmatic Agreement Among U.S. Nuclear Regulatory Commission, U.S. Bureau of Land Management, South Dakota State Historic Preservation Office, Powertech (USA), Inc., and Advisory Council on Historic Preservation Regarding the Dewey-Burdock In Situ Recovery Project Located in Custer and Fall River Counties South Dakota (Mar. 19, 2014) (ML14246A421) (Programmatic Agreement).

⁴¹ *See* Ex. NRC-018-A, Programmatic Agreement, at 4 (Condition 1 (a)); *see also* LBP-19-10, 90 NRC at 341-42.

⁴² *See* Ex. NRC-018-A, Programmatic Agreement, at 13 (Condition 13 (c)); *see also id.* at 10-11 (Condition 9).

⁴³ LBP-19-10, 90 NRC at 344-45; *see also* Tr. at 2037-42, 2047-51, 2075.

⁴⁴ LBP-19-10, 90 NRC at 348-49; *see* Exs. NRC-008-A-1 through NRC-008-B-2, "Environmental

in an EIS identified during the hearing process can be rectified by the hearing record.⁴⁵

The Tribe and the Consolidated Intervenors have sought review of LBP-19-10, the Board's summary disposition of Contention 1B (LBP-17-9) and its decision denying the Tribe's motion to strike (August 12, 2019, Order).⁴⁶ The Staff and Powertech oppose the petitions for review.⁴⁷

II. DISCUSSION

A. Standard of Review

We may grant review, in our discretion, where the petitioner raises a substantial question with respect to the following considerations:

- (i) A finding of material fact is clearly erroneous or in conflict with a finding as to the same fact in a different proceeding;
- (ii) A necessary legal conclusion is without governing precedent or is a departure from or contrary to established law;
- (iii) A substantial and important question of law, policy or discretion has been raised;
- (iv) The conduct of the proceeding involved a prejudicial procedural error; or
- (v) Any other consideration which the Commission may deem to be in the public interest.⁴⁸

Impact Statement for the Dewey-Burdock Project in Custer and Fall River Counties, South Dakota, Supplement to the Generic Environmental Impact Statement for *In-Situ* Leach Uranium Milling Facilities — Final Report,” NUREG-1920 (supp. 4 Jan. 2014) (ML14246A350, ML14246A326, ML14246A327, ML14247A334) (FSEIS).

⁴⁵ LBP-19-10, 90 NRC at 350-52 (citing, among others, *NRDC v. NRC*, 879 F.3d 1202, 1209-12 (D.C. Cir. 2018) (upholding the agency practice of curing a deficiency in an EIS using the hearing record)).

⁴⁶ See Tribe Petition, Consolidated Intervenors Petition.

⁴⁷ NRC Staff's Answer Opposing Petitions for Review (Feb. 13, 2020) (Staff Answer Opposing Review); Brief of Powertech (USA), Inc. in Opposition to the Oglala Sioux Tribe's and Consolidated Intervenors' Petition for Review of LBP-19-10 (Feb. 18, 2020) (Powertech Answer Opposing Review); see also Oglala Sioux Tribe's Reply to NRC Staff's Answer in Opposition to Petition for Review of LBP-19-10, LBP-17-09, and Board Ruling on Motion to Strike (Feb. 24, 2020) (Tribe Reply to Staff); Oglala Sioux Tribe's Reply to Powertech's Answer in Opposition to Petition for Review of LBP-19-10, LBP-17-09, and Board Ruling on Motion to Strike (Feb. 28, 2020) (Tribe Reply to Powertech).

⁴⁸ 10 C.F.R. § 2.341(b)(4).

We show a high degree of deference to the Board as factfinder. Therefore, a petition claiming that the Board's findings of fact are "clearly erroneous" requires the petitioner to show that the Board's findings are "not even plausible in light of the record viewed in its entirety."⁴⁹ We are highly deferential, "particularly where much of [the] evidence is subject to interpretation."⁵⁰ And we give the highest deference to findings of fact that turn on witness credibility.⁵¹ We review the Board's legal rulings *de novo*, but we only take review, as explained in the regulation, where the petitioner shows that the Board's rulings on a substantial and important question of law is without precedent or contrary to precedent.⁵² In addition, we defer to the Board in its procedural case management decisions.⁵³

B. The Tribe's Petition for Review

1. Final Initial Decision: LBP-19-10

The Board's ruling in LBP-19-10 centers on the question of whether additional information on cultural resources is unavailable, or too costly to obtain. Although as an independent agency the NRC is not bound by CEQ regulations unless adopted into Part 51, we "look to [them] for guidance, including section 1502.22."⁵⁴ That regulation, which pertained to unavailable information, provided the following:

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.

(a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

⁴⁹ *Kenneth G. Pierce* (Sherwood, Illinois), CLI-95-6, 41 NRC 381, 382 (1995) (quoting *Anderson v. Bessemer City*, 470 U.S. 564, 573-74 (1985)); see also *In the Matter of David Geisen*, CLI-10-23, 72 NRC 210, 224-25 (2010); *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 1), CLI-04-24, 60 NRC 160, 189 (2004).

⁵⁰ *Geisen*, CLI-10-23, 72 NRC at 225.

⁵¹ *Id.*

⁵² *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC 1, 11 (2010).

⁵³ *Id.* at 47; *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 629 (2004).

⁵⁴ *Diablo Canyon*, CLI-11-11, 74 NRC at 443-44.

(b) If the information relevant cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement:

- (1) A statement that such information is incomplete or unavailable;
- (2) A statement of the relevance of the incomplete or unavailable information to evaluating the reasonably foreseeable significant adverse impacts on the human environment;
- (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and
- (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.⁵⁵

In promulgating the regulation, the CEQ stated that the “term ‘overall costs’ encompasses financial costs and other costs such as costs in terms of time (delay) and personnel.”⁵⁶ Recently, the CEQ revised this regulation to replace “the term ‘exorbitant’ with ‘unreasonable’” because “unreasonable” is “consistent with CEQ’s description of ‘overall cost’ considerations in its 1986 promulgation of amendments to this provision.”⁵⁷ The CEQ’s rulemaking reiterates that the term “overall cost” includes financial costs and other costs such as delay.⁵⁸

a. Whether the Board Erred in Finding Additional Cultural Resources Information “Unavailable”

The Tribe raises several related challenges to the Board’s factual finding that additional cultural resources information is not reasonably available.⁵⁹ First, the Tribe argues that it never agreed to the March 2018 Approach and that the approach was flawed.⁶⁰ The Tribe further asserts that the amount of compensation it was offered for its participation in the proposed survey was inadequate.⁶¹ And

⁵⁵ 40 C.F.R. § 1502.22.

⁵⁶ See Council on Environmental Quality, National Environmental Policy Act Regulations; Incomplete or Unavailable Information, Final Rule, 51 Fed. Reg. 15,618, 15,622 (Apr. 25, 1986).

⁵⁷ See Council on Environmental Quality, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, Final Rule, 85 Fed. Reg. 43,304, 43,332, 43,366 (Jul. 16, 2020). The revised regulation was also redesignated as § 1502.21. See also 51 Fed. Reg. 15,618 at 15,622 (stating that in using the term “overall costs” the CEQ “does not intend that the phrase be interpreted as a requirement to weigh the cost of obtaining the information against the severity of the impacts, or to perform a cost-benefit analysis. Rather, it intends that the agency interpret “overall costs” in light of overall program needs”).

⁵⁸ 85 Fed. Reg. at 43,332.

⁵⁹ Tribe Petition at 6-14, 15-17.

⁶⁰ *Id.* at 6-7.

⁶¹ *Id.* at 8-9.

it claims that the Staff's contractor did not have the required expertise to design and carry out an adequate cultural resources survey.⁶² The Tribe also argues that it negotiated in good faith, whereas the Staff did not.⁶³

The Board considered each of these arguments. With respect to whether the Tribe ever agreed to the March 2018 Approach, the Board found that the Tribe's THPO at the time, Trina Lone Hill, had agreed that the March 2018 Approach was reasonable but that Lone Hill's successor, Kyle White, withdrew the Tribe's agreement.⁶⁴ Moreover, the question before the Board was not whether the Tribe had agreed to the March 2018 Approach but whether the approach was reasonable.⁶⁵ In evaluating whether the approach was reasonable, the Board thoroughly discussed the five criteria that the Tribe had identified as necessary for a competent survey.⁶⁶ The Board's assessment of these factors reflects factual determinations that warrant deference.

The Board also discussed, at length, the parties' interactions on which it relied for its determination that the Tribe's lack of cooperation resulted in the unavailability of additional cultural resources information.⁶⁷ The Tribe has not shown that the Board's findings were implausible in light of the record as a whole.

The Tribe further argues that the Staff could have taken other steps to gather additional cultural resources information even if it had not completed a site survey, for example, through oral interviews.⁶⁸ It also argues that Staff could have procured information by hiring a competent contractor to perform a survey even without the Tribe's involvement.⁶⁹ And the Tribe argues that the information was available from tribal members, community members, and other Tribes.⁷⁰ But pursuing the Tribe's suggested options would have been a significant departure from the long path the Staff had taken in trying to resolve the Tribe's Contention 1A. These methods would not have satisfied all five criteria that the parties agreed would be necessary to complete a satisfactory survey. The Board also discussed the Staff's reasons for not pursuing other information-gathering options that would not involve the Tribe and found that the Staff's decision was reasonable.⁷¹

⁶² *Id.* at 9-10.

⁶³ *Id.* at 10-13.

⁶⁴ *See* LBP-19-10, 90 NRC at 330.

⁶⁵ *See* Order Granting Hearing at 4.

⁶⁶ LBP-19-10, 90 NRC at 318-29.

⁶⁷ *Id.* at 329-34.

⁶⁸ Tribe Petition at 15-16.

⁶⁹ *Id.* at 16-17.

⁷⁰ *Id.* at 17.

⁷¹ LBP-19-10, 90 NRC at 334-35.

We find that the Board's conclusion that the cultural resources information it found lacking in LBP-15-16 was not available due to the Tribe's non-cooperation was reasonable. The Tribe's arguments do not therefore show a clear error of fact in the Board's findings.

b. Need for FSEIS Supplementation

The Tribe argues that the Board erred in ruling that there was no need for the Staff to issue a supplement to the FSEIS.⁷² According to the Tribe, without a supplement, the public does not have the opportunity to assess and comment on the Staff's finding that additional cultural resources information is unavailable.⁷³ Relatedly, it claims that the Board erred in denying its motion to strike the Staff's prefiled testimony.⁷⁴

The Board relied on longstanding agency practice allowing the adjudicatory record to augment existing environmental analyses in considering whether the Staff should have to issue a supplement to the FSEIS.⁷⁵ The Board noted that federal courts of appeals cases have "accepted the validity" of the NRC's approach.⁷⁶ The Board also stated that in some situations publishing a supplemental environmental analysis would be appropriate, for example when the information developed during the adjudication represents a "fundamental . . . omission," where the "proposed project has been so changed by the Board's decision as not to have been fairly exposed to public comments during the initial circulation" of the FSEIS, or where the NRC Staff's evidence at hearing varies "markedly" from the information in the FSEIS.⁷⁷ It noted that our regulations in Part 51 require supplementation when the scope of the project has changed or there is significant new information.⁷⁸

⁷² Tribe Petition at 14-15.

⁷³ *Id.* at 15.

⁷⁴ *Id.* The Tribe's argument is more fully explained in its Motion to Strike, where it asserted that any information not discussed or referenced in the FSEIS is not relevant or material and the Staff's attempts to "rehabilitate its FSEIS through post-hoc written testimony of witnesses . . . should be struck by the Board." Motion to Strike at 3.

⁷⁵ See LBP-19-10, 90 NRC at 350-53 (citing *Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-16-13, 83 NRC 566, 595 (2016); *Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1013 (1973)).

⁷⁶ *Id.* at 351 & n.315 (citing *NRDC v. NRC*, 879 F.3d 1202, 1209-12 (D.C. Cir. 2018); *New England Coal. on Nuclear Pollution v. NRC*, 582 F.2d 87, 94 (1st Cir. 1978); *Citizens for Safe Power v. NRC*, 524 F.2d 1291, 1294 n.5 (D.C. Cir. 1975); *Ecology Action v. AEC*, 492 F.2d 998, 1001-02 (2d Cir. 1974)).

⁷⁷ *Id.* at 352-53.

⁷⁸ *Id.* at 352 n.316 (citing 10 C.F.R. § 51.92).

The Board also looked to 40 C.F.R. § 1502.22(b) and determined that all the elements of the CEQ regulation were met in its decision and the supporting record.⁷⁹ The Board observed that the original FSEIS stated that cultural resources information was limited in part because the Tribe, after initially agreeing to participate in the 2013 cultural resources survey, “withdrew its acceptance because the tribal council had not been briefed before the survey was scheduled to begin.”⁸⁰ The Board found that because the Staff had not been able to conduct an additional cultural resources survey, the only potentially supplemental information was “the reasons why such additional cultural resources information still has not been obtained by the NRC Staff.”⁸¹ The Board concluded that a statement of “why this information was unavailable . . . does not appear to us to constitute the type of significant discussion that warrants employing the supplementation process.”⁸²

In its petition for review, the Tribe argues that it is improper for an environmental analysis to be augmented informally through the record of adjudication.⁸³ But the Tribe’s arguments are insufficient to meet our standard for taking review; that is, they do not demonstrate to us that “a necessary legal conclusion [that the Board made] is without governing precedent or is a departure from or contrary to established law” or that the Board’s decision raises a “substantial and important question of law, policy, or discretion.”⁸⁴ It appears that in all respects the Board followed applicable law, both within our agency case law and federal court decisions.

The Tribe attempts to distinguish the Circuit Court for the District of Columbia’s ruling in *NRDC v. NRC*, which rejected a challenge to our practice of augmenting an environmental analysis with the publicly available adjudicatory record.⁸⁵ The Tribe points out that in *NRDC v. NRC*, the analysis missing from the environmental document had been performed before the case had reached the court of appeals; therefore, remand to the agency for formal supplementation would be “pointless.”⁸⁶ The Tribe argues that *NRDC v. NRC* is inapposite to this proceeding because no additional information has been gathered and no additional analysis has taken place.⁸⁷ In connection with this argument, the Tribe claims that the Board’s August 12, 2019, ruling on its motion to strike also

⁷⁹ See *id.* at 340, 348-55.

⁸⁰ *Id.* at 354 (quoting FSEIS at F-2).

⁸¹ *Id.*

⁸² *Id.* at 355.

⁸³ Tribe Petition at 14-15.

⁸⁴ See 10 C.F.R. § 2.341(b)(4).

⁸⁵ Tribe Petition at 14-15 (citing *NRDC v. NRC*, 879 F.3d at 1212).

⁸⁶ *Id.*

⁸⁷ *Id.*

violates NEPA.⁸⁸ In its motion to strike Staff’s prefiled testimony, the Tribe argued that the Staff was improperly trying to rehabilitate a deficient NEPA document with extraneous information.⁸⁹

The Tribe does not raise a substantial question warranting our review because it misconstrues the purpose of the second evidentiary hearing. The Board and the parties knew at the outset of the hearing that no additional cultural resources information would be gathered in that process. The question before the Board was only whether the information was properly considered “unavailable” under NEPA. And under CEQ regulations, which we look to for guidance, “unavailable” information includes information the cost of which to gather would be “unreasonable” in terms of both money and time.⁹⁰ Therefore, we see no factual, procedural, or legal error in the Board’s conclusion that the testimony it received at the hearing specifically convened for the purpose of determining whether information was unavailable eliminated the need for formal supplementation to the FSEIS to reflect that information’s unavailability.

c. Board License Amendment Concerning the Programmatic Agreement

The Tribe raises three arguments with respect to the Board’s license amendment concerning the Programmatic Agreement. The Tribe’s arguments do not present an error warranting our review.

The Tribe first argues that the license condition was not “subject to notice and comment or otherwise incorporated into any NEPA document,” so it cannot remedy a NEPA deficiency.⁹¹ But as we have explained above, the FSEIS is properly augmented by the entire adjudicatory record, including the Board’s decision. The Board appropriately found that no formal supplementation, including notice and comment, was necessary to comply with NEPA.

The Tribe additionally states that the Board’s first initial decision in the case (LBP-15-16, which we affirmed in CLI-16-20) found the Programmatic Agreement to be insufficient to protect cultural resources.⁹² It therefore argues that the Programmatic Agreement has been “invalidated by prior rulings.”⁹³ But neither the Board decision in LBP-15-16 nor our decision affirming it found the

⁸⁸ *Id.*

⁸⁹ See Motion to Strike at 1-9.

⁹⁰ See 40 C.F.R. § 1502.21; see also Council on Environmental Quality, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, Final Rule, 85 Fed. Reg. at 43,332.

⁹¹ Tribe Petition at 18.

⁹² *Id.* at 18.

⁹³ *Id.*

Programmatic Agreement deficient for purposes for which it was entered, and those decisions did not invalidate the Programmatic Agreement.

We are not convinced by the Tribe's argument that because the Programmatic Agreement is "purely a creature of [the] NHPA," it has no role in satisfying NEPA.⁹⁴ The Tribe argues that the NHPA only protects sites eligible for inclusion within the National Register of Historic Places; therefore, it asserts, "any cultural resources not eligible require no analysis under the NHPA or Programmatic Agreement, providing no basis to meet NEPA duties."⁹⁵ But the Programmatic Agreement provides means for protecting a variety of cultural objects or archeological finds beyond listing on the National Register.⁹⁶

Moreover, with respect to all three arguments, the Tribe mischaracterizes the Board's ruling. The Board did not rely on the license amendment as a basis for its ruling that additional cultural resources information is unavailable under NEPA. The license amendment provides that the signatories to the Programmatic Agreement and interested Tribes, even if not signatories, will receive thirty days prior notice of who will be monitoring future groundbreaking activities.⁹⁷ This notice provision does not alter the substantive rights of the signatories to the Programmatic Agreement or of the Tribe.

Therefore, the Tribe's arguments concerning the Programmatic Agreement-related license amendment do not raise a substantial question of fact, law, or policy, and we do not accept them for review.

d. The Board's Application of NEPA's "Rule of Reason"

Next, the Tribe challenges the Board's ruling because it claims that NEPA's "rule of reason" only applies to exclude a discussion of "remote and speculative" effects.⁹⁸ The Tribe argues that because there are certainly some Native American cultural resources on the site (some of which have already been identified) that could be adversely affected by this project, adverse impacts to them are not remote and speculative. Therefore, the Tribe contends, the rule of reason does not apply to the issues it raised in Contention 1A.⁹⁹

We disagree with the Tribe's argument. In promulgating 40 C.F.R. § 1502.22, CEQ explained that the new regulation "requires that analysis of impacts in the

⁹⁴ *Id.* at 17.

⁹⁵ *Id.* at 17-18.

⁹⁶ *See, e.g.*, Ex. NRC-018-A, Programmatic Agreement ¶9 (construction will be halted for all "unanticipated discoveries" until they can be evaluated), ¶10 ("human remains" will be protected), ¶11 (disposition of artifacts).

⁹⁷ *See* LBP-19-10, 90 NRC at 344-45.

⁹⁸ Tribe Petition at 18-19.

⁹⁹ *Id.*

face of unavailable information be grounded in the ‘rule of reason.’”¹⁰⁰ Moreover, reviewing courts have applied the rule of reason to evaluate agencies’ compliance throughout the NEPA process. For example, in *Marsh v. Oregon Natural Resources Council*, the U.S. Supreme Court found that an agency must use a rule of reason to decide whether new information warrants a supplemental environmental impact statement.¹⁰¹ Similarly, the Court ruled in *Department of Transportation v. Public Citizen* that the rule of reason should govern the decision to prepare an environmental impact statement, where the statement would serve no purpose because the agency was required by law to undertake the action in question.¹⁰² Thus, the Tribe’s “rule of reason” argument does not raise a substantial question of law.

e. Whether the Board Improperly “Inserted Itself” into Negotiations or Was Biased in Staff’s Favor

The Tribe argues that the Board improperly involved itself in settlement negotiations, used the Tribe’s confidential settlement negotiations against the Tribe, and was biased in favor of the Staff.¹⁰³ The Tribe argues that it was improper for the Board to admit its own exhibits.¹⁰⁴ We find that these arguments do not present a prejudicial procedural error.

The Tribe’s arguments that the Board improperly involved itself in settlement negotiations or improperly used settlement negotiations against the Tribe are unavailing.¹⁰⁵ The Board did not act as a settlement judge and in fact offered at several points in this proceeding to appoint a settlement judge.¹⁰⁶ In 2015,

¹⁰⁰ 51 Fed. Reg. at 15,621; *see also* Council on Environment Quality, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, Final Rule, 85 Fed. Reg. 43,304, 43,332 (Jul. 6, 2020) (reiterating that the rule of reason applies when discussing incomplete or unavailable information).

¹⁰¹ 490 U.S. 360, 373 (1989).

¹⁰² 541 U.S. 752, 767 (2004); *see also Utahns for Better Transp. v. Dep’t of Transp.*, 305 F.3d 1152, 1163 (10th Cir. 2002) (reviewing court applies “rule of reason” in deciding whether claimed deficiencies in NEPA document are significant or merely “flyspecks”).

¹⁰³ Tribe Petition at 20-21; *see also* Tribe Reply to the Staff at 4-5; Tribe Reply to Powertech at 4-5.

¹⁰⁴ Tribe Petition at 21-22.

¹⁰⁵ The Tribe argues that the Board forced it to participate in alternative dispute resolution (ADR), which is inaccurate. Tribe Petition at 21. However, the record does not reflect that the parties used ADR.

¹⁰⁶ *See, e.g.*, LBP-18-5, 88 NRC at 135 n.255 (reminding the parties that they may request the appointment of a Settlement Judge and noting that the Board had suggested they do so in “a number of telephone conferences” as well as in LBP-17-9, 86 NRC at 209); *see also* Staff Answer Opposing Review at 21; Powertech Answer Opposing Review at 21.

in its first initial decision, the Board acknowledged that it had no authority to direct the Staff in its NEPA duties, and it required monthly status updates from the Staff.¹⁰⁷ More than a year later, after the Staff's status reports showed no significant progress in the Staff's efforts to resolve its differences with the Tribe, the Board arranged for telephonic status calls.¹⁰⁸ Between October 2016 and April 2019, the Board held eleven on-the-record teleconferences with the parties concerning the status of the proceeding.¹⁰⁹ The Tribe's only specific argument challenging the Board's actions is that the Board forced the Tribe to accept the March 2018 Approach when it ruled on the parties' cross-motions for summary disposition.¹¹⁰ But the Board did not act inappropriately in ruling on the motions for summary disposition or in its underlying findings of fact that the Tribe had at one time accepted the March 2018 Approach. Ruling on motions, making findings of fact, and holding status conferences are within the scope of a Board's core responsibilities.

We disagree that the Board improperly "based its opinion regarding the reasonableness of the Tribe's negotiating position on letters exchanged during negotiations."¹¹¹ The Tribe argues that the Board's actions contravened Federal Rule of Evidence 408, which prohibits the admission of settlement negotiations into evidence in order "to prove or disprove the validity or amount of a disputed claim."¹¹² The Federal Rules of Evidence do not apply directly to our proceedings, although the boards look to them as guidance.¹¹³ In any event, the Board did not violate the principle behind the federal rule. Rule 408 also provides that statements made during negotiations may be admitted for "another purpose," such as proving bias or prejudice.¹¹⁴ The "another purpose" exception has been interpreted to include showing that a party acted in bad faith during the negotiations and establishing the intent of the settlement reached.¹¹⁵ Here, the Board considered the communications between the parties not to establish the validity of a disputed claim but to determine whether the Tribe had unjustifiably refused

¹⁰⁷ LBP-15-16, 81 NRC at 658.

¹⁰⁸ See Memorandum and Order (Requesting Scheduling Information for Telephone Conference Call) (Oct. 13, 2016), at 2 (unpublished).

¹⁰⁹ The transcripts of these teleconferences are publicly available in ADAMS.

¹¹⁰ Tribe Petition at 20, 23 (citing LBP-18-5, 88 NRC at 135-36).

¹¹¹ *Id.* at 22.

¹¹² See Fed. R. Evid. 408(a).

¹¹³ *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-717, 17 NRC 346, 365 n.32 (1983); see, e.g., *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-01-9, 53 NRC 239, 250 (2001).

¹¹⁴ See Fed. R. Evid. 408(b).

¹¹⁵ See, e.g., *Athey v. Farmers Ins. Exch.*, 234 F.3d 357, 362 (8th Cir. 2000) (proof of bad faith); *Coakley & Williams Const., Inc. v. Structural Concrete Equip., Inc.*, 973 F.2d 349, 353-54 (4th Cir. 1992) (intent of settlement).

to cooperate during the negotiations and whether Staff reasonably abandoned further negotiations as futile. In our view, the Board did not err in considering the parties' communications in that context.

The Tribe also does not show prejudicial procedural error in the Board's admission and reliance on its own exhibits.¹¹⁶ The Board provided a list of twelve exhibits in an August 20, 2019, pretrial order, and the Tribe did not object to the admission of any of them.¹¹⁷ The Tribe does not discuss the substance of the Board's exhibits or describe specifically how it was prejudiced by them. In our proceedings, the Board has an "inquisitorial role" in the development of a complete record.¹¹⁸ Our rules of procedure grant the Board the authority to receive evidence; examine witnesses; strike irrelevant, immaterial, unreliable, duplicative, or cumulative evidence; and take "any other action consistent" with applicable law in its conduct of proceedings.¹¹⁹ We therefore disagree with the Tribe's argument that the Board's admission of its own exhibits constituted prejudicial procedural error.

2. LBP-17-9: Summary Disposition of Contention 1B

In LBP-17-9, the Board found that the Staff had made reasonable efforts under the NHPA to consult with the Tribe concerning the project's effects on cultural resources that may be located on the site, and it granted summary disposition to the Staff on Contention 1B. According to the Tribe, the Board concluded that the Staff had met its duty to consult based on "a single . . . face to face meeting that occurred on May 16, 2016, one follow-up conference call on January 31, 2017, and an exchange of letters [that] even the Board characterized as lacking substance."¹²⁰ The Tribe also argues that the "events that have transpired since . . . confirm the inadequate effort to address historic and cultural resources under NEPA that flow from the failure to satisfy NHPA standards."

As an initial matter, the Tribe's arguments that the Staff had not identified historic properties in compliance with the NHPA, challenges the Board's finding

¹¹⁶ Tribe Petition at 21-22.

¹¹⁷ See Memorandum (Regarding Board Exhibits for Evidentiary Hearing on Contention 1A and Opportunity to Address Recent Judicial Decision) (Aug. 20, 2019) (unpublished).

¹¹⁸ *Vermont Yankee*, CLI-10-17, 72 NRC at 47-48.

¹¹⁹ 10 C.F.R. § 2.319(d), (g), (s).

¹²⁰ Tribe Petition at 24 (citing LBP-17-9, 86 NRC at 190).

in LBP-15-16, not its ruling in LBP-17-9.¹²¹ The argument is therefore impermissibly late.

Whether the Staff's attempts to consult with the Tribe adequately fulfilled its NHPA consultation duties is a question of fact subject to the "clear error" standard of review. Moreover, the Tribe's references to the Staff's actions subsequent to the summary disposition ruling are irrelevant to the Board's conclusion regarding summary disposition. The Tribe does not meet the "clear error" standard; it does not explain how the Board's findings of fact "are not plausible." We therefore decline to take review of this claim.

C. Consolidated Intervenor's Petition for Review

The Consolidated Intervenor's seek review of the Board's merits decision in LBP-19-10, its summary disposition ruling in LBP-17-9, and its August 12, 2019, order with a single argument. They argue that the Staff has a responsibility under NEPA to "preserve important historic, cultural, and natural aspects of our national heritage" regardless of whether a "federally recognized tribe appears to assert and prosecute a claim."¹²² They argue that the Staff's approach, "now adopted by the Board[,] makes the consideration of cultural resources values entirely dependent upon the active participation of the [Oglala Sioux Tribe]."¹²³

Contrary to these claims, the Staff and the Board have not put the onus of identifying cultural resources on a single Native American tribe. Powertech submitted a Class III cultural resources survey with its application.¹²⁴ As the Board recognized in its first initial decision, a Class III survey can identify a property's eligibility to be included on the National Register of Historic Places but "wouldn't necessarily identify all of the [Native American cultural and religious] resources primarily because some knowledge [must be] provided by the Native American groups themselves."¹²⁵ The Staff began its efforts to consult with various affected Tribes in 2011, and a field survey was conducted on the site with three Tribes (although not the Oglala Sioux Tribe) participating.¹²⁶ And

¹²¹ *Id.* In LBP-15-16, the Board found that "NRC Staff has complied with the NHPA requirement to make a good faith and reasonable effort to identify properties that are eligible for inclusion in the National Register of Historic Places within the Dewey-Burdock ISL project area." LBP-15-16, 81 NRC at 654.

¹²² Consolidated Intervenor's Petition at 1-2 (quoting *Oglala Sioux Tribe v. NRC*, 896 F.3d 520, 530 (D.C. Cir. 2018)).

¹²³ *Id.* at 2.

¹²⁴ Ex. APP-009, Level II Cultural Resources Evaluation of Powertech (USA) Incorporated's Proposed Dewey-Burdock Locality within the Southern Black Hills, Custer and Fall River Counties, South Dakota (Mar. 2008) (ML14240A418).

¹²⁵ LBP-15-16, 81 NRC at 653 (quoting Tr. at 762-63).

¹²⁶ *See id.* at 644-49.

the March 2018 Approach that the Staff proposed would have involved qualified archeologists, not solely tribal members, to complete the survey, and it would have provided an opportunity for other tribes to participate.¹²⁷ Therefore, Consolidated Intervenor's assertions that consideration of cultural resources was entirely dependent on the Tribe are inconsistent with the record.

Accordingly, we find no clear error in the Board's ruling that the Staff has satisfied its NEPA responsibilities, and we deny the Consolidated Intervenor's petition for review.

III. CONCLUSION

For the foregoing reasons, we *deny* the petitions for review.
IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 8th day of October 2020.

¹²⁷ See Ex. NRC-192, March 2018 Approach, at 2-3.

Additional Views of Chairman Svinicki and Commissioner Caputo

We fully agree with the majority's determination that neither petitioner provided a sufficient reason to take review of the Board's holding in this proceeding. The Board's holding rests on the observation that "NEPA's rule of reason acknowledges that in certain cases an agency may be unable to obtain information to support a complete analysis."¹ In such circumstances, the agency must "undertake reasonable efforts to obtain unavailable information."² The Board found that "although unsuccessful, the NRC Staff acted reasonably in seeking to obtain information from the Tribe regarding the location and significance of Tribal cultural resources on the Dewey-Burdock site for the purpose of its NEPA impacts analysis."³ We write separately to emphasize that the Staff's efforts went far beyond what was required by any "rule of reason" worthy of the name.⁴

The conclusion to this proceeding illustrates the fruitlessness of compelling the Staff to take extraordinary measures to gather missing information under NEPA when clearly reasonable steps have failed. This quixotic search for more information followed from the Board's and Commission's failure to articulate clearly the attributes of a reasonable effort to obtain missing information. The details of the failed consultation, adjudication, and NEPA process in the instant case are worth examining because they demonstrate significant and recurring flaws in our process. Until agency adjudicators effectively address these shortcomings, efficiency and balance will elude our NEPA reviews when the agency lacks complete information.

A. The Staff's Efforts to Obtain Information on Cultural Resources

1. Four Years of Consultation

The Staff began its search for information regarding cultural resources many years ago. In early 2010, the Staff contacted the South Dakota State Historic Preservation Officer, who identified twenty Native American Tribes "that might attach historic, cultural, and religious significance to historic properties within

¹ LBP-19-10, 90 NRC at 314 (citing National Environmental Policy Act Regulations; Incomplete or Unavailable Information, 51 Fed. Reg. 15,618, 15,621 (Apr. 25, 1986)).

² *Id.* at 316.

³ *Id.* at 356.

⁴ Chairman Svinicki has made this point many times over the course of this now ten-year proceeding. CLI-19-9, 90 NRC 121, 136 (2019) (Additional Views of Chairman Svinicki); CLI-18-7, 88 NRC at 11 (Chairman Svinicki, Additional Views); CLI-16-20, 84 NRC at 263-68 (Commissioner Svinicki, dissenting in part).

the Dewey-Burdock ISL Project area.”⁵ The Staff sent letters to these Tribes that asked for assistance in identifying cultural resources on March 19, 2010, September 10, 2010, and March 4, 2011.⁶ On June 8, 2011, at the Prairie Winds Casino and Hotel on Pine Ridge Reservation, the Staff held a meeting with six Tribes to gather information informally.⁷ The Staff held a follow-up meeting on February 14-15, 2012, in Rapid City, South Dakota; thirteen Tribes attended.⁸ In the following months, the Staff continued to exchange letters and emails with tribal entities.⁹

Between June 19, 2012, and October 19, 2012, the Staff received and considered a variety of proposals to conduct a survey of the site.¹⁰ As part of this effort, on September 5, 2012, the Staff held a meeting in Bismarck, North Dakota, with representatives from seven Tribes to further discuss “a statement of work to identify religious and cultural properties within the area of potential effects.”¹¹ Notably, the Board found that the survey approach favored by the Oglala Sioux Tribe, which would have cost over one million dollars to survey a fraction of the site, was “patently unreasonable.”¹² At the end of the year, the NRC Staff stated that it intended to conduct an alternate field survey in the spring.¹³ On February 8, 2013, the Staff “invited twenty-three tribes to participate in a field survey between April 1 and May 1, 2013, and described procedures for site access, and compensation for survey participation.”¹⁴

The Oglala Sioux Tribe objected to the terms of the survey, which began on April 1, 2013; nonetheless, seven Tribes participated in the survey, and three of those Tribes ultimately provided survey reports to the NRC.¹⁵ “The survey reports documented sites of religious and cultural significance identified during site surveys [and] mitigation measures recommended for each identified site.”¹⁶ The Staff issued the final Environmental Impact Statement in January of 2014, which contained the three reports arising from the April 2013 survey.¹⁷

⁵ LBP-15-16, 81 NRC at 644.

⁶ *Id.*

⁷ *Id.* at 645.

⁸ *Id.*

⁹ *Id.* at 646.

¹⁰ *Id.* at 646-47.

¹¹ *Id.* at 646.

¹² *Id.* at 657 & n.229; LBP-19-10, 90 NRC at 331 n.227.

¹³ LBP-15-16, 81 NRC at 648.

¹⁴ *Id.*

¹⁵ *Id.* at 648-49, 652.

¹⁶ *Id.* at 649.

¹⁷ *Id.*

2. *Is Four Years Enough?*

Before the Board, the Staff did not argue that the Final Environmental Impact Statement catalogued and provided mitigation measures for all potential cultural resources that could be present on site. Instead, the Staff contended that it complied with NEPA by making “‘a reasonable and good faith effort — an effort that lasted almost 4 years — to obtain information on religious and cultural resources that are significant to the tribes.’”¹⁸ However, rather than consider the Staff’s plea, the Board simply concluded, “the FSEIS in this proceeding does not contain an analysis of the impacts of the project on the cultural, historical, and religious sites of the Oglala Sioux Tribe and the majority of other consulting Native American tribes.”¹⁹ Thus, the Board found the Staff’s review did not comport with NEPA.²⁰ The Board noted that the Staff “can remedy this deficiency . . . by promptly initiating a government-to-government consultation with the Oglala Sioux Tribe to identify any adverse effects to cultural, historic, or religious sites of significance to the Oglala Sioux Tribe that may be impacted by the Powertech Dewey-Burdock project.”²¹ However, the Board provided no guidance to the Staff or parties about what efforts would be sufficient to comply with NEPA’s rule of reason in the event that the parties held to their clearly established positions and no additional survey occurred.

On appeal, the Staff argued that “the Board misapplied NEPA’s hard-look standard as a matter of law, under which the Board should assess whether the Staff ‘made reasonable efforts’ to obtain complete information on the cultural resources at issue here.”²² The Staff’s appeal posed a critical legal question, which the Commission reviews *de novo*: whether the Board applied the appropriate legal standards in considering if four years of work to obtain cultural resources information was a sufficient effort under NEPA’s “rule of reason.” Rather than answer, the majority sidestepped this foundational inquiry entirely and, over Chairman Svinicki’s dissent, simply observed, “the fundamental issue here — whether the Staff complied with NEPA — is inherently factual.”²³ Moreover, as Chairman Svinicki noted in her dissenting opinion, the Board’s holding that the Oglala Sioux Tribe’s proposal for a cultural resources survey was “patently unreasonable” logically entailed a conclusion that the information that would be

¹⁸ *Id.* at 651 (quoting NRC Staff’s Reply Brief (Jan. 29, 2015) at 5).

¹⁹ *Id.* at 655.

²⁰ *Id.*

²¹ *Id.* at 657-58.

²² CLI-16-20, 84 NRC at 247 (quoting NRC Staff’s Petition for Review of LBP-15-16 (May 26, 2015) at 17-18).

²³ *Id.*

gleaned from that survey was not reasonably available.²⁴ Thus, the result of the Commission's and Board's rulings left the Staff with no recourse but to double down on the same unavailing efforts with the Tribe when the Tribe had already indicated that the information sought was not reasonably available. Unsurprisingly, the ensuing four years of consultation would prove no more productive than the first four years.

3. *Four More Years*

The Staff renewed its efforts to obtain information on cultural resources on June 23, 2015, when the Staff sent a letter to the Oglala Sioux Tribes asking to reinstate government-to-government consultations.²⁵ The parties exchanged correspondence and held another meeting in Pine Ridge, South Dakota on May 19, 2016.²⁶ Concerned by the lack of progress in consultation, the Board convened the first of a series of teleconferences on November 7, 2016; shortly afterwards, on November 23, 2016, the Staff invited the Tribe to join a teleconference on the parameters of a cultural survey.²⁷ The teleconference occurred on January 31, 2017, but the Staff and Tribe were again unable to agree on a survey methodology.²⁸ Thereafter, the parties exchanged letters through the spring of 2017, which culminated in a letter from the Tribe on May 31, 2017, that detailed the Tribe's ongoing objections to the Staff's proposed methodology.²⁹ After receipt of the letter, the Staff concluded that additional consultation would be "unlikely to result in a mutually acceptable settlement of the dispute."³⁰ Thus, the Staff moved for summary disposition, which the Board denied with respect to the Staff's NEPA obligations.³¹

Thereafter, the Board continued to hold teleconferences with the parties to monitor progress on resolving the contention.³² At a November 16, 2017, teleconference the Staff "revealed that it was working on a path forward that it hoped to present to the other parties in the next several weeks."³³ On Decem-

²⁴ *Id.* at 264-65 (Commissioner Svinicki, dissenting in part).

²⁵ LBP-17-9, 86 NRC at 179.

²⁶ LBP-19-10, 90 NRC at 300.

²⁷ *Id.* at 301.

²⁸ LBP-17-9, 86 NRC at 181.

²⁹ *Id.* at 182.

³⁰ *Id.* (quoting Letter from Cinthya I. Román, Chief, Environmental Review Branch, Division of Fuel Cycle, Safety, Safeguards, and Environmental Review, to Trina Lone Hill, THPA, Oglala Sioux Tribe at 2 (July 24, 2017)).

³¹ *Id.* at 201.

³² LBP-19-10, 90 NRC at 301.

³³ *Id.*

ber 6, 2017, the Staff sent a new proposed approach to the Tribe and Consolidated Intervenor, who expressed a “tentative approval” of the proposal in a follow-on December 12, 2017, teleconference with the Board. On January 19, 2018, the other parties provided written responses to the Staff proposal, which the Staff took into account in the finalized approach it provided to the parties on March 16, 2018, the “March 2018 Approach.”³⁴ At a further teleconference with the Board, all parties expressed comfort with the parameters of the March 2018 Approach.³⁵

Among other things, the March 2018 Approach called for the parties to begin “the field survey process in mid-June 2018 for a two week period” and also provided for a follow-on survey in September of that year.³⁶ Under the March 2018 Approach, the Staff would prepare a draft survey report in October of 2018, with an opportunity for Tribal review through late December, followed by publication of a draft supplement to the FSEIS in February 2019 and a final supplement in May.³⁷ Shortly before the June survey period began, “the Oglala Sioux Tribe presented the NRC Staff with an alternative survey proposal.”³⁸ The alternate proposal called for visits by tribal elders “over several days during the different seasons of the year”; field work that would last over a year; and a budget of over \$2 million.³⁹ The Staff “responded by indicating that it considered the Tribe’s alternative survey methodology to be a constructive rejection of the March 2018 Approach and terminated implementation of the March 2018 Approach.”⁴⁰ In light of the failed survey attempt, the Staff and Oglala Sioux Tribe both moved for summary disposition; but the Board again declined to grant summary disposition and provided two options to resolve the contention: further negotiation to implement the March 2018 Approach or an evidentiary hearing.⁴¹

Once more, the Staff sought to obtain the missing information through further discussions with the Oglala Sioux Tribe. On November 21, 2018, the Staff sent the Oglala Sioux Tribe and other Tribes a letter indicating that the Staff would resume efforts to complete the March 2018 Approach.⁴² The Tribe responded on January 11, 2019, in a letter that raised concerns with the Staff’s approach. The following month, the Staff developed a Proposed Draft Cultural

³⁴ *Id.* at 302-03.

³⁵ *Id.* at 303.

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.* at 304.

⁴⁰ *Id.* at 305.

⁴¹ *Id.* at 305-06.

⁴² *Id.* at 307.

Resources Site Survey Methodology (February 2019 Methodology), which it provided to the Oglala Sioux Tribe for review.⁴³ The Staff met at the Pine Ridge Reservation in South Dakota with the Oglala Sioux Tribal Historic Preservation Advisory Council and THPOs from other Sioux Tribes to discuss the February 2019 Methodology.⁴⁴ During the meeting, the Tribes voiced concerns with the February 2019 Methodology as well as the March 2018 Approach.⁴⁵ Once more, the parties exchanged letters in which the Staff committed to working within the framework of the March 2018 Approach and the Tribe cautioned that it did not agree to a rigid application of the March 2018 Approach.⁴⁶ Once again at impasse, the Staff advised the Board during a subsequent teleconference on March 21, 2019, that “the differences that remain were so fundamental that it was not feasible to have further negotiation meetings” and that the Staff would pursue the option for an evidentiary hearing.⁴⁷ The evidentiary hearing that is the subject of the instant appeal followed.

B. Analysis

The Council on Environmental Quality recently issued a final rule to update its regulations on NEPA compliance.⁴⁸ Although we are not bound by CEQ regulations, the NRC gives them “substantial deference” in applying NEPA.⁴⁹ The CEQ rule added a new provision specifying a presumptive two year time limit for preparing Environmental Impact Statements.⁵⁰ While this would not be an inflexible rule, allowing a senior agency official to waive its applicability for a given project, it demonstrates the relative amount of time and effort expected of agencies in preparing an EIS.⁵¹

This is in keeping with Federal Court’s descriptions of NEPA’s limited requirements. The Supreme Court has clarified that NEPA is a procedural statute: it “does not mandate particular results, but simply prescribes the necessary pro-

⁴³ *Id.* at 308.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.* at 308-09.

⁴⁷ *Id.* at 309-10 (quoting Tr. 1564-65, 1619-20 (Mar. 21, 2019)).

⁴⁸ Council on Environmental Quality, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, Final Rule, 85 Fed. Reg. 43,304 (Jul. 16, 2020).

⁴⁹ *Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 222 n.21 (2007).

⁵⁰ 85 Fed. Reg. at 43,362-63.

⁵¹ *Id.*

cess.”⁵² The purpose of the EIS is (1) to ensure that the agency “in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts” and (2) to guarantee “that the relevant information will be made available to the larger audience.”⁵³ The Supreme Court has also cautioned, “The scope of the agency’s inquiries must remain manageable if NEPA’s goal of ensuring a fully informed and well considered decision is to be accomplished.”⁵⁴ Likewise, the First Circuit has emphasized that an environmental impact statement “is not, after all, a research document.”⁵⁵

A ten-year adjudicatory process to comply with NEPA in this proceeding is difficult to reconcile with these interpretations of NEPA. Clearly, the additional efforts at negotiating a survey methodology came to nothing, and the Oglala Sioux Tribe remained consistent in its position that a satisfactory survey would require resources deemed unreasonable by the Board.⁵⁶ When the Staff, tasked with preparing the EIS and reasonably presumed to have the competency and expertise in NEPA matters sufficient for the job, advised us that it believed it could not obtain information on cultural resources despite having undertaken what it considered reasonable efforts, it should have rung alarm bells for agency decisionmakers. In essence, the Staff was informing the Commission that it did not know how to find the missing information through reasonable efforts. Repeatedly, the Board and Commission response to the Staff argument that it could not obtain information on cultural resources consisted of no more than ordering the Staff to try again. Obviously, a successful survey would have discharged the agency’s NEPA obligations; but completion of that survey was never fully in the agency’s hands. The agency could only control the effort it took to complete the survey. A more appropriate response would have considered whether the initial effort at consultation was a reasonable one and if not, what the Staff could have done differently that would have been reasonable (even if it never led to the hoped for survey). Without such guidance, it is unsurprising that the parties wandered aimlessly through nearly a decade of discussion. Ultimately, the agency is left with nothing to show for the ten years of the parties’ wasted time and resources.

The NRC has frequently addressed the difficulties of producing an Environmental Impact Statement while missing information.⁵⁷ Most recently, the

⁵² *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

⁵³ *Id.* at 349.

⁵⁴ *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 776 (1983) (quotations omitted).

⁵⁵ *Town of Winthrop v. FAA*, 535 F.3d 1, 13 (1st Cir. 2008).

⁵⁶ Compare LBP-19-10, 90 NRC at 331 n.227 with *Winthrop*, 535 F.3d at 12.

⁵⁷ E.g., *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-
(Continued)

Commission considered this issue in a companion case to this order, *Crow Butte*. *Crow Butte* also involved the Staff's efforts to secure the Oglala Sioux Tribe's assistance to identify TCPs impacted by uranium recovery operations. We dissented from a similarly aimless remand in *Crow Butte* and instead would have found the Staff's efforts met NEPA's rule of reason because the Staff 1) identified the source of the missing information, 2) undertook reasonable efforts to acquire the information from that source, and 3) discontinued those efforts upon learning that the information could not be reasonably obtained.⁵⁸ In our view, the Staff's initial efforts to obtain cultural resources information in this proceeding would also meet these basic requirements. First, the Staff identified the source that was most likely to be able to provide the missing information by contacting the South Dakota SHPO to identify Tribes with a connection to the site.⁵⁹ Second, the Staff took steps that were likely to lead to obtaining the missing information, in this case by seeking to conduct an on-site cultural resources survey.⁶⁰ Third, the Staff discontinued further efforts upon learning that the information could not be reasonably obtained.⁶¹ Had the majority simply invoked such a straightforward application of NEPA's rule of reason earlier in this proceeding, years of wasted effort and resources may have been averted.

Moreover, as discussed by us in our *Crow Butte* dissenting opinion, the Commission perpetuates a veil of mystery around the question of what level of effort to acquire missing information is reasonable. As a result, licensing applicants and the NRC staff face the ongoing prospect that a demand for additional detail in NEPA documents may give rise to a years-long sojourn with no clear destination. Thus, our adjudicatory process remains vulnerable to the type of profoundly regrettable, decade-long delay demonstrated by this proceeding. Given the complex and time-sensitive applications on the agency's licensing horizon, we can ill-afford to sustain this persistent trap for those who wander into our jurisprudence.

11-11, 74 NRC 427, 438-44 (2011) (considering claim that applicant must provide a probabilistic analysis of new seismic information or show that the cost of such analysis would be exorbitant); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant Independent Spent Fuel Storage Installation), CLI-08-1, 67 NRC 1 (2008) (considering claim that NRC did not fully disclose potential radiological impacts of a terrorist attack in its supplemental environmental impact statement); *North Anna*, CLI-07-27, 66 NRC at 235-36 (discussing the extent to which missing information constitutes a "fatal flaw" to a NEPA analysis for an Early Site Permit).

⁵⁸ *Crow Butte Resources Inc.* (In Situ Leach Uranium Recovery Facility), CLI-20-8, 92 NRC 255, 282 (2020) (Chairman Svinicki and Commissioner Caputo, dissenting).

⁵⁹ LBP-15-16, 81 NRC at 644.

⁶⁰ See *supra* notes 5-17 and accompanying text.

⁶¹ LBP-19-10, 90 NRC at 331 & n.227 (noting that the Tribe's suggested survey approach in 2012 entailed "unreasonable" costs); LBP-15-16, 81 NRC at 657 (finding aspects of the Tribe's proposed survey to be "patently unreasonable").

Commissioner Baran, Dissenting in Part

I agree with the majority that it was reasonable for the Board to conclude that the cultural resources information it found lacking in LBP-15-16 is not available for National Environmental Policy Act (NEPA) purposes. However, I dissent from the majority's holding that the Staff need not issue a supplement to the Final Supplemental Environmental Impact Statement (FSEIS).

The Oglala Sioux Tribe contends that it is improper for a NEPA environmental analysis to be augmented after the fact through the record of adjudication. The Commission should grant review of this aspect of the petition because the Tribe has raised a substantial and important question of law and policy. We should conclude that the Staff must supplement the FEIS with an explanation of its determination that additional cultural resources information is unavailable. The Board previously found that the Staff's FSEIS did not meet the requirements of NEPA because the FSEIS was deficient with respect to the effects of the licensing action on Native American cultural, religious, and historic resources.¹ Without a supplement explaining why this information is unavailable, the significant deficiency will remain uncorrected and the agency will not meet its NEPA obligations.

NRC cannot avoid supplementing the FEIS by allowing the significant deficiencies of the environmental review to be corrected by adjudicatory proceedings conducted *after* the Powertech license was issued. As the Commission has observed many times, NEPA is a procedural statute.² It establishes a process to ensure that, when an agency makes a decision that could affect the environment, that decision is informed by a thorough evaluation of the expected environmental impacts. A basic premise of the statute is that informed decisionmaking will help protect the environment by forcing agencies to consider the consequences of potential actions as well as alternatives that could be less environmentally damaging. That commonsense approach simply does not work if the agency decision precedes the environmental review. Thus, a core requirement of NEPA is that an agency decisionmaker must consider an adequate environmental review *before* making a decision on a licensing action.³ When the Commission allows a Board to correct a significantly inadequate NEPA document through augmentation *after* the agency has already made a licensing decision, then this fundamental purpose of NEPA is frustrated.

¹ LBP-15-16, 81 NRC at 655-58, 708. The Board also identified a NEPA deficiency with respect to hydrogeological information, the subject of Contention 3, and conditioned Powertech's license to cure this deficiency. *See id.* at 679, 681, 709.

² *See, e.g., Entergy Nuclear Operations, Inc. (Indian Point, Units 2 and 3)*, CLI-11-14, 74 NRC 801, 813 (2011).

³ *Oglala Sioux Tribe v. NRC*, 896 F.3d 520 (D.C. Cir. 2018).

Here, the licensing decision was made on April 8, 2014, when the Staff issued a Part 40 source material license to Powertech. There was nothing provisional about that license. After Powertech received the license, it was authorized by NRC to possess source material. Like many agency decisions — whether they be licenses, orders, or rulemakings — issuance of the Powertech license could be challenged in an agency adjudicatory proceeding and in federal court. But the possibility of judicial (or quasi-judicial) review does not change the fact that the licensing decision was made on April 8, 2014. The Board’s hearing on whether the information was unavailable did not take place until August 2019 — more than five years *after* the agency’s licensing decision was made. The Board’s final initial decision finding the information unavailable was not issued until four months later, on December 12, 2019. Relying on the Board’s August 2019 hearing and December 2019 decision to cure the significant deficiencies of a March 2014 FSEIS that the Staff relied on to issue an April 2014 license would not comply with the basic requirements of NEPA.

In two recent cases, the D.C. Circuit Court of Appeals made it clear that it does not approve of the Commission’s current practice of allowing for the augmentation of an inadequate NEPA environmental review after the decision to issue a license has already been made. In *NRDC v. NRC*, the Court examined this practice. While the Court of Appeals found that there was no concrete harm in that particular case, the Court stated:

We do not mean to imply the procedure the Board followed was ideal or even desirable. Certainly it would be preferable for the FEIS to contain all relevant information and the record of decision to be complete and adequate before the license is issued.⁴

The second case is the very one before us now. In *Oglala Sioux Tribe*, the Court of Appeals went even further than it had in *NRDC v. NRC* in broadly criticizing the agency’s practice. The Court explained:

The National Environmental Policy Act, however, obligates every federal agency to prepare an adequate environmental impact statement *before* taking any major action, which includes issuing a uranium mining license. The statute does not permit an agency to act first and comply later. Nor does it permit an agency to condition performance of its obligation on a showing of irreparable harm.⁵

The Court added:

⁴ *NRDC v. NRC*, 879 F.3d 1202, 1212 (D.C. Cir. 2018).

⁵ *Oglala Sioux Tribe*, 896 F.3d at 523.

The agency's decision in this case and its apparent practice are contrary to NEPA. The statute's requirement that a detailed environmental impact statement be made for a "proposed" action make clear that agencies must take the required hard look *before* taking that action.⁶

The Court of Appeals held that "once the NRC determines there is a significant deficiency in its NEPA compliance, it may not permit a project to continue in a manner that puts at risk the values NEPA protects simply because no intervenor can show irreparable harm."⁷ It then remanded the case to the Commission to decide whether to leave Powertech's license in place.

The Court of Appeals decisions are a strong signal that the Commission must act to bring the agency's doctrine and practice into compliance with NEPA. The Board is correct that, for many years, the Commission has permitted NEPA environmental reviews to be augmented by adjudicatory decisions occurring after issuance of a materials license. But by allowing the significant deficiencies of NEPA analyses to be corrected by adjudicatory proceedings *after* a license has already been issued, the Commission has put NRC on course to repeatedly and predictably violate a core requirement of NEPA. We have a responsibility to avoid this result.

Therefore, we should now hold that the Board cannot correct significant deficiencies of a NEPA environmental review through the hearing process after a licensing action has already been taken in reliance on the deficient NEPA analysis.⁸

Aside from bringing the agency into compliance with NEPA, requiring the Staff to supplement the FSEIS would also provide interested stakeholders with the opportunity to comment on the Staff's determination that additional cultural resources information is unavailable. Although adjudicatory hearings can provide for "more rigorous public scrutiny" of a NEPA environmental review than a public comment period, they are also much more restrictive.⁹ Many interested stakeholders likely would be unable to demonstrate standing to intervene or to submit a contention that meets NRC's stringent admissibility standards. Or they may lack the financial resources to participate in an adjudicatory hearing. Yet,

⁶ *Id.* at 532.

⁷ *Id.* at 538.

⁸ This approach would not require completing the hearing before making a licensing decision, and it would not change Commission jurisprudence allowing for augmentation of the environmental record *before* a licensing action is taken. Rather, if a licensing decision is based on an environmental review that the Board or Commission later finds to be significantly deficient, then after-the-fact augmentation of the environmental review with the hearing record is not available as an option to correct the deficiency.

⁹ *Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 53 (2001).

these stakeholders may offer insightful and valuable comments for the agency to consider as part of a public comment period on a supplement to the FSEIS.

For these reasons, I would grant review of this aspect of the Oglala Sioux Tribe's petition and direct the Staff to supplement the FEIS with an explanation of (1) its determination that additional cultural resources information is unavailable and (2) the relevance of the unavailable information to evaluating the reasonably foreseeable significant adverse impacts on the human environment.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

**Docket Nos. 50-289-LA
50-320-LA**

**EXELON GENERATION
COMPANY, LLC
(Three Mile Island Nuclear Station,
Units 1 and 2)**

October 8, 2020

PRO SE PETITIONERS

In consideration of Petitioners' *pro se* status, Commission accepted Board referral of pleading that could be construed as an appeal.

SCOPE OF PROCEEDING

Board correctly ruled that contentions concerning financial qualifications of potential license transferees were outside the scope of a license amendment proceeding that did not involve a license transfer.

NEPA: CATEGORICAL EXCLUSION

Board correctly dismissed contention arguing that license amendment application required an environmental assessment, where contention did not address application's analysis that concluded that application fell within categorical exclusions 10 C.F.R. § 51.22(c)(9) and (25).

MEMORANDUM AND ORDER

This order responds to a filing by Eric J. Epstein and Three Mile Island Alert, Inc. (together, TMIA) regarding the Atomic Safety and Licensing Board's decision denying their petition to intervene and request for hearing with respect to a license amendment request (LAR).¹ For the reasons described below, we affirm the Board's decision.

I. BACKGROUND

This proceeding arises from an LAR submitted by Exelon Generation Company, LLC (Exelon) to amend the operating license for Three Mile Island Nuclear Station, Unit 1 (TMI-1), which was permanently shut down on September 26, 2019.² Exelon seeks to revise the TMI site emergency plan and emergency action levels to reflect the permanent defueling of the reactors at the Three Mile Island site.³ Approval of the LAR depends on approval of a request for exemptions from portions of 10 C.F.R. § 50.47 and 10 C.F.R. Part 50, Appendix E.⁴

On November 12, 2019, TMIA filed a petition to intervene and hearing request, in which it argued that the LAR adversely affected Exelon's decommissioning funding assurance and that Exelon should have provided an environmental report with its application.⁵ On January 23, 2020, the Board denied the hearing request and found that neither Eric Epstein, individually, nor Three

¹ LBP-20-2, 91 NRC 10 (2020).

² See Letter from Michael P. Gallagher, Exelon, to NRC Document Control Desk (July 1, 2019) (ADAMS accession no. ML19182A182) (LAR); *see also* Letter from Michael P. Gallagher, Exelon, to NRC Document Control Desk (Sept. 26, 2019) (ML19269E480) (certifying permanent removal of fuel).

³ See LAR.

⁴ See Letter from Michael P. Gallagher, Exelon, to NRC Document Control Desk (July 1, 2019) (ML19182A104) (Emergency Planning Exemption Request). According to the LAR, Exelon also maintains the emergency planning responsibilities for Three Mile Island, Unit 2 (TMI-2), which is owned by First Energy Corporation (First Energy), through a service agreement. First Energy has a possession-only license for TMI-2, which is currently maintained in SAFSTOR condition. According to Exelon, the LAR would "not impact Exelon's ability to maintain the [emergency planning] service agreement." LAR at 2.

⁵ Eric J. Epstein, Chairman of Three Mile Island Alert Inc.'s Petition to Intervene and Hearing Request (Nov. 12, 2019) (Petition to Intervene).

Mile Island Alert, Inc., as an organization, had established standing.⁶ It further found that neither of the jointly proposed contentions was admissible.⁷

On February 16, 2020, TMIA filed a “Motion to Stay Memorandum and Reply to Proposed Order Denying Intervention and Petition” before the Board.⁸ On February 19, 2020, the Board denied the motion to the extent it constituted a request for a stay because it was filed almost two weeks late and TMIA had not shown good cause for the delay.⁹ The Board also rejected the pleading as a motion for reconsideration on timeliness grounds.¹⁰

The Board also referred TMIA’s pleading to the Commission to the extent it could be considered an appeal.¹¹ The Staff and Exelon oppose such an appeal.¹²

II. DISCUSSION

In consideration of TMIA’s *pro se* status, we accept the Board’s referral and consider the pleading as an appeal under 10 C.F.R. § 2.311.¹³ The appeal does not, however, demonstrate Board error. As explained below, the requested licensing action would modify the emergency plan for TMI-1.¹⁴ The LAR would not transfer the license of either TMI-1 or TMI-2, and it would not authorize decommissioning of either unit.¹⁵ Therefore, TMIA’s arguments concerning license transfer and the possible challenges presented in decommissioning TMI-2 are outside the scope of this proceeding. Moreover, with respect to TMIA’s

⁶ See LBP-20-2, 91 NRC at 29-32.

⁷ *Id.* at 33-38.

⁸ Motion to Stay Memorandum and Reply to Proposed Order Denying Intervention and Petition (Feb. 16, 2020) (Appeal).

⁹ Memorandum and Order (Denying Motion for Stay and to Reply to Licensing Board Decision and Referring Pleading to the Commission) (Feb. 19, 2020), at 2 (unpublished) (citing 10 C.F.R. § 2.342(a) (motion for a stay must be filed within ten days of Board’s ruling)).

¹⁰ *Id.* at 3 (citing 10 C.F.R. § 2.323(e) (motion for reconsideration must be filed within ten days)).

¹¹ *Id.* at 3-4.

¹² NRC Staff Answer Opposing Epstein Motion (Mar. 12, 2020); Exelon Generation Company, LLC’s Answer Opposing Eric J. Epstein’s February 16, 2020 Filing as Referred to the Commission by the Atomic Safety and Licensing Board’s Order of February 19, 2020 (Mar. 12, 2020).

¹³ A *pro se* petitioner may be granted some leeway in pleading and minor procedural matters where the opposing party is not prejudiced thereby. See, e.g., *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 394 (2015); *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995).

¹⁴ See LAR, Attach. 1, Description and Evaluation of Proposed Changes, at 2.

¹⁵ See *id.* at 2, § 1.0, Summary Description; see also Biweekly Notice: Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving No Significant Hazards Considerations, 84 Fed. Reg. 47,542, 47,548 (Sept. 10, 2019).

arguments related to the LAR that are within the proceeding's scope, we find no error in the Board's rulings that the contentions lacked sufficient bases. Accordingly, we affirm the Board's decision on contention admissibility and need not reach the question of standing.

A. Contention 1

In Contention 1, TMIA argued that "Exelon's LAR does not provide financial assurances [and] does not demonstrate that either Exelon or FirstEnergy are fiscally responsible, or that either have access to adequate funds for decommissioning."¹⁶ The Board found the contention beyond the scope of the proceeding. The Board observed that the contention sought to "redirect the focus" of the proceeding to an exemption that the NRC Staff had already granted that allowed Exelon to use a portion of the TMI-1 decommissioning trust fund for spent fuel management activities.¹⁷ The Board also clarified that this proceeding does not involve a license transfer.¹⁸

TMIA offered several other arguments in support of Contention 1, which similarly are outside the scope of the proceeding. TMIA asserted that the LAR does not address Exelon's "confused management organization," or explain "where resources will be derived to deal with environmental impacts."¹⁹ TMIA argued that Exelon's decommissioning cost estimates rest on several incorrect assumptions and do not include an adequate contingency factor.²⁰ TMIA also referred to a website, which it claimed included a list of incidents reflecting historic poor management at TMI from 1979 to 2019.²¹ The Board ruled that these assertions were outside the scope of the proceeding because they raise decommissioning financial assurance issues rather than emergency planning issues related to the LAR.²²

TMIA further claimed that Exelon disregarded the possibility of spent fuel pool accidents.²³ But the Board held that TMIA did not provide factual or expert

¹⁶ Petition to Intervene at 28.

¹⁷ LBP-20-2, 91 NRC at 34-35. The request was approved on October 16, 2019. *See* Exelon Generation Company LLC; Three Mile Island Nuclear Station Unit 1; Exemptions; issuance; 84 Fed. Reg. 56,846 (Oct. 23, 2019); *see also* Letter from Michael P. Gallagher, Exelon to NRC Document Control Desk (Apr. 12, 2019) (ML19102A085).

¹⁸ LBP-20-2, 91 NRC at 36.

¹⁹ Petition to Intervene at 28.

²⁰ *Id.* at 32-35.

²¹ *Id.* at 35-37, 39.

²² LBP-20-2, 91 NRC at 35.

²³ Petition to Intervene at 35-39.

support for this claim and did not show a genuine dispute with the application.²⁴ In fact, the LAR did consider the possibility of spent fuel pool accidents, and TMIA did not dispute this analysis in its Petition to Intervene.²⁵

On appeal, TMIA does not directly address or show error in the Board's ruling concerning the scope of the proceeding. Instead, TMIA reasserts claims about the financial qualifications of potential license transferees.²⁶ We find no error in the Board's determination that arguments related to license transfer are outside the scope of the proceeding.

TMIA also reiterates its assertion that the "Post Defueled Emergency Plan will not provide the necessary response staff with the appropriate guidance to protect the health and safety of the public" and that the proposed LAR therefore "involves a significant reduction in the margin of safety."²⁷ While this claim may be within the scope of the proceeding, it was factually unsupported and did not dispute specific portions of the LAR with regard to emergency response.²⁸ Therefore, TMIA has not shown that the Board erred in dismissing the contention.

B. Contention 2

TMIA argued in Contention 2 that the LAR should have included an environmental report to satisfy NRC regulations implementing the National Environmental Policy Act (NEPA).²⁹ In support, TMIA asserted that Three Mile Island is in a flood-prone river basin. TMIA further claimed that past environmental impact statements (EISs) relating to TMI have been inaccurate or incomplete.³⁰

The Board rejected Contention 2 because TMIA did not address the applicant's analysis, which found that no additional NEPA analysis was necessary because the LAR falls within a categorical exclusion.³¹ The Board pointed to the LAR's explanation that the application falls within both categorical exclusions 10 C.F.R. § 51.22(c)(9) and (25), and it observed that petitioners did not address

²⁴ LBP-20-2, 91 NRC at 35 n.43.

²⁵ See, e.g., LAR, Attach. 1, Description and Evaluation of Proposed Changes, § 5.1.2, Hottest Fuel Assembly Adiabatic Heat-Up (Zirconium Fire); LAR, Attach. 2, Permanently Defueled Emergency Plan, § 2.9, Mitigation of Consequences of Beyond Design Basis Events.

²⁶ Appeal at 20 ("There can be no doubt that whether a licensee transfer is financially qualified (Contention 1), and whether the NRC can approve a license transfer without [an] environmental assessment . . . (Contention 2) are within the scope of this proceeding.").

²⁷ Appeal at 20-21; see also Petition to Intervene at 8.

²⁸ See 10 C.F.R. § 2.309(f)(1)(v), (vi).

²⁹ Petition to Intervene at 40-46.

³⁰ *Id.* at 49, 50, 51.

³¹ LBP-20-2, 91 NRC at 37.

Exelon's analysis of the matter.³² The Board found that the contention therefore failed to show a genuine dispute with the application.³³

On appeal, TMIA does not discuss the Board's reasoning and makes no mention of the LAR's discussion of a categorical exclusion. We find no error in the Board's conclusion that the contention did not raise a genuine dispute with the application. We therefore affirm the Board's decision that this contention is inadmissible.

C. Stay Request

TMIA also requested that the NRC stay the issuance of the license amendment until (1) an EIS is completed, (2) TMIA's concerns expressed in Exhibits 2 and 3 attached to its petition are addressed,³⁴ and (3) "financial assurances are guaranteed by [EnergySolutions]."³⁵ Our rules of procedure provide that within ten days of service of an adverse ruling, a party may apply to the presiding officer or the Commission for a stay.³⁶ Therefore, we find no error in the Board's finding that the stay request — filed twenty-six days after the denial of TMIA's hearing request — was untimely with no good cause shown. Moreover, the stay request does not include supported arguments that relate directly to the emergency planning LAR at issue. We therefore find no error in the Board's decision to deny a stay.

³² *Id.* at 37-38 (citing LAR Attach. 1, Description and Evaluation of Proposed Changes, at 13; Emergency Planning Exemption Request, Attach. 1, at 55-57).

³³ *Id.*

³⁴ *Id.* Exhibit 2 to the Petition is an article from the *Philadelphia Inquirer* relating to voting machines in Pennsylvania. See Petition, Ex. 2, Jonathan Lai, *Why some Pa. counties are struggling with state order to upgrade voting machines*, Mar. 1, 2019. Exhibit 3 to the Petition consists of: A discussion of the Three Mile Island Post Defueled Emergency Plan; Press Release, James Lee Witt Associates, Governor Rendell Responds to Independent Review of State's Snowstorm Response; Pledges Reforms to Emergency Management Operations (Mar. 27, 2007); Letter from TMIA to the editor (unspecified) (Aug. 21, 2008) ("Why We Opposed the Move"); and Press Release, AmerGen, AmerGen to Relocate TMI Joint Information Center (Aug. 19, 2008).

³⁵ EnergySolutions is the parent company of TMI-2 Solutions, LLC, the proposed transferee in the Three Mile Island, Unit 2 license transfer proceeding. TMIA also asked that the license amendment be stayed until resolution of concerns raised by the Federal Emergency Management Agency in a December 2019 letter. See Letter from Michael S. Casey, FEMA, to Kathryn M. Brock, NRC (Dec. 20, 2019) (ML19360A127). On December 26, 2019, Mr. Epstein forwarded a link to the letter to the service list in this proceeding along with a request that the Board review the letter. The Board declined TMIA's suggestion to review the FEMA letter. See LBP-20-2, 91 NRC at 40 n.54.

³⁶ See 10 C.F.R. § 2.342(a).

III. CONCLUSION

For the reasons discussed above, we *affirm* the Board's decision to deny TMIA's petition to intervene and also *find* the Board's decision correctly denied the stay request.

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 8th day of October 2020.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

**Docket Nos. 50-277-SLR
50-278-SLR**

**EXELON GENERATION
COMPANY, LLC
(Peach Bottom Atomic Power
Station, Units 2 and 3)**

November 12, 2020

APPEALS

The Commission will not consider arguments raised for the first time on appeal.

CONTENTIONS, ADMISSIBILITY

Generalized arguments are insufficient to meet the contention admissibility criteria. Petitioners must offer specific contentions on material issues, supported by alleged facts or expert opinion.

MEMORANDUM AND ORDER

Beyond Nuclear, Inc. (Beyond Nuclear) appeals the Atomic Safety and Licensing Board's ruling on its hearing request and petition to intervene challenging the subsequent license renewal application of Exelon Generation Company,

LLC for Peach Bottom Atomic Power Station, Units 2 and 3 (Peach Bottom).¹ For the reasons discussed below, we affirm the Board's decision.

I. BACKGROUND

Exelon submitted its subsequent license renewal application for Peach Bottom Units 2 and 3 on July 10, 2018.² The Peach Bottom renewed licenses would authorize Exelon to operate the boiling water reactors, located in Delta, Pennsylvania, for an additional twenty years beyond the period specified in each of the current renewed operating licenses. The current licenses for the Peach Bottom Units expire in 2033 and 2034; an additional twenty years would extend the expiration dates to 2053 and 2054.

Following the NRC Staff's acceptance review and docketing of the Peach Bottom application, a notice of opportunity to request a hearing and petition for leave to intervene was published in the *Federal Register*.³ In November 2018, Beyond Nuclear filed a hearing request and proposed two contentions.⁴ Exelon and the Staff both opposed the hearing request.⁵ On June 20, 2019, the Board denied Beyond Nuclear's hearing request and concluded that neither of Beyond Nuclear's contentions was admissible.⁶

Beyond Nuclear filed a timely appeal, seeking reversal of the Board's deci-

¹ Beyond Nuclear's Notice of Appeal of LBP-19-05 (July 15, 2019); Beyond Nuclear's Brief on Appeal of LBP-19-05 (July 15, 2019) (Appeal); see *Exelon Generation Co., LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), LBP-19-5, 89 NRC 483 (2019).

² See Letter from Michael Gallagher, Exelon, to NRC Document Control Desk (July 10, 2018) (ADAMS accession no. ML18193A697); Subsequent License Renewal Application, Peach Bottom Atomic Power Station Units 2 and 3 (July 2018) (ML18193A773). The application contains an environmental report. Applicant's Environmental Report — Operating License Renewal Stage — Subsequent License Renewal (July 2018) (ML18201A219) (Environmental Report).

³ See *Exelon Generating Co., LLC*; Peach Bottom Atomic Power Station, Units 2 and 3; License Renewal Application; Opportunity to Request a Hearing and to Petition for Leave to Intervene, 83 Fed. Reg. 45,285 (Sept. 6, 2018).

⁴ Beyond Nuclear Inc.'s Hearing Request and Petition to Intervene (Nov. 19, 2018) (Petition).

⁵ Exelon's Answer Opposing Beyond Nuclear Inc.'s Hearing Request and Petition to Intervene (Dec. 14, 2018) (Exelon Answer to Petition); NRC Staff Answer to Beyond Nuclear, Inc.'s Hearing Request and Petition to Intervene (Dec. 14, 2018) (Staff Answer to Petition).

⁶ See LBP-19-5, 89 NRC 483. Neither Exelon nor the Staff opposed Beyond Nuclear's standing to intervene in the proceeding, and the Board found that Beyond Nuclear had demonstrated standing. See *id.* at 491.

sion on Contention 2, which challenged the adequacy of the Exelon's environmental report.⁷ Both Exelon and the Staff oppose Beyond Nuclear's Appeal.⁸

A. LBP-19-5

The Board evaluated Contention 2 as three separate environmental challenges and designated them as Contentions 2A, 2B, and 2C.⁹ Beyond Nuclear, on appeal, does not object to the Board's designation of its contention as three separate contentions, and we maintain the Board's designation of those contentions here.

In Contention 2A, Beyond Nuclear asserted that Exelon's environmental report fails to address the accident risks posed by aging reactor equipment during a second license renewal term in violation of the National Environmental Policy Act (NEPA) and 10 C.F.R. § 51.53(c)(2).¹⁰ Beyond Nuclear disputed Exelon's claim that the risk of operating Peach Bottom with aging equipment is a Category 1 issue that Exelon's environmental report can address by relying on the environmental findings contained in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 (Table B-1).¹¹ Beyond Nuclear argued that 10 C.F.R. § 51.53(c)(2) requires Exelon to address reactor aging phenomena and their effects during the subsequent renewal period.¹² Exelon and the Staff both asserted that the

⁷ In Contention 1, Beyond Nuclear claimed that Exelon's aging management programs failed to account for "the declining body of external operating experience" available during the subsequent license renewal term. Petition at 1, 4-6. Beyond Nuclear did not appeal the Board's ruling on Contention 1. Appeal at 1 n.1.

⁸ Exelon's Brief in Opposition to Beyond Nuclear's Appeal of LBP-19-05 (Aug. 9, 2019) (Exelon Brief in Opposition); NRC Staff Brief in Opposition to Beyond Nuclear Appeal of LBP-19-5 (Aug. 9, 2019) (Staff Brief in Opposition). Beyond Nuclear moved for leave to file a reply to Exelon's and the Staff's opposing briefs and submitted a reply brief simultaneously with its motion. Beyond Nuclear's Motion for Leave to Reply in Part to Oppositions to Beyond Nuclear's Brief on Appeal of LBP-19-05 (Aug. 19, 2019) (Motion for Leave to Reply); Beyond Nuclear, Inc.'s Reply Brief on Appeal of LBP-19-05 (Aug. 19, 2019). Both Exelon and the Staff oppose Beyond Nuclear's Motion for Leave to Reply. Exelon's Answer Opposing Beyond Nuclear's Motion to File a Reply Brief (Aug. 29, 2019); NRC Staff Answer to Beyond Nuclear Motion for Leave to Reply (Aug. 29, 2019). Filings not otherwise authorized by our rules are permitted only where necessity or fairness dictates. See *Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2). CLI-14-3, 79 NRC 31, 35 (2014). Because Beyond Nuclear does not meet this standard, we deny its Motion for Leave to Reply.

⁹ LBP-19-5, 89 NRC at 500.

¹⁰ See Petition at 6-7; LBP-19-5, 89 NRC at 500.

¹¹ Petition at 7, 11; Petitioner Reply at 17-32. Table B-1 summarizes the Commission's findings on NEPA issues for license renewal of nuclear power reactors and assigns each issue to a category. See 10 C.F.R. pt. 51, subpt. A, app. B, tbl. B-1 (Table B-1). For Category 1 issues, the generic analysis of the issue as specified in the table may be adopted in each plant-specific review. See Table B-1 n.2. Category 2 issues require additional plant-specific review. *Id.*

¹² Petition at 7, 10; Petitioner Reply at 17-32.

contention impermissibly challenged our regulations, since Table B-1 codifies the findings in the 2013 Generic Environmental Impact Statement (GEIS) that “the environmental impacts of design-basis accidents are of small significance for all plants.”¹³ Moreover, Exelon and the Staff asserted that NRC regulations allow an applicant to incorporate by reference into its environmental report any information from a prior environmental report that relates to the facility or site, or any information in a final environmental document previously prepared by the Staff relating to the facility.¹⁴ Exelon asserted that its environmental report incorporates by reference the discussion of design-basis accidents from the GEIS and that any challenges to the generic findings codified in the NRC rules are barred by 10 C.F.R. § 2.335.¹⁵

The Board declined to rule on the issue of the applicability of 10 C.F.R. § 51.53(c)(3) to subsequent license renewal and found that it did not need to make a determination on that issue in order to analyze the sufficiency of Beyond Nuclear’s contentions.¹⁶ The Board reasoned that even if 10 C.F.R. § 51.53(c)(3) did not apply to subsequent license renewal applicants, Exelon would still be permitted to incorporate the 2013 GEIS analyses into its environmental report.¹⁷ Having determined that Exelon incorporated by reference the 2013 GEIS into its environmental report, the Board concluded that, contrary to Beyond Nuclear’s assertion, Exelon’s environmental report did address the accident risks posed by operating aging reactor equipment for the subsequent license renewal term.¹⁸

The Board held that in light of Exelon’s incorporation by reference of the 2013 GEIS analyses and the Table B-1 results concerning design-basis accidents, Beyond Nuclear failed to show a genuine dispute with Exelon’s environmental report.¹⁹ The Board stated that Beyond Nuclear did not explain why Exelon was

¹³ Exelon Answer to Petition at 29. Staff Answer to Petition at 56-57; see “Generic Environmental Impact Statement for License Renewal of Nuclear Plants — Main Report” (Final Report), NUREG-1437, vol. 1, rev. 1 (June 2013) (ML13106A241) (GEIS).

¹⁴ Exelon Answer to Petition at 29-31. Staff Answer to Petition at 56-57; see 10 C.F.R. § 51.53(a) (listing a variety of NEPA documents containing information that may be incorporated by reference in an environmental report).

¹⁵ Exelon Answer to Petition at 29-30 (citing Environmental Report at 4-69, 4-70).

¹⁶ See LBP-19-5, 89 NRC at 502. In declining to make a determination as to the applicability of 10 C.F.R. § 51.53(c)(3) to subsequent license renewal, the Board acknowledged that the issue had been raised in the *Turkey Point* subsequent license renewal proceeding and had been referred to the Commission. *Id.* at 501 & n.90. See also *Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), LBP-19-3, 89 NRC 245, 272-73 & n.46 (2019). We issued a decision on the referred ruling earlier this year. *Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), CLI-20-3, 91 NRC 133 (2020).

¹⁷ LBP-19-5, 89 NRC at 502.

¹⁸ *Id.* at 502-03.

¹⁹ *Id.* at 503 (citing 10 C.F.R. § 2.309(f)(1)(iv)).

not permitted to use the 2013 GEIS analysis in its application, “[a]side from its general argument that subsequent license renewal applicants cannot rely on the 2013 GEIS because it fails to ‘expand the temporal scope of the environmental analysis’ to subsequent license renewals.”²⁰

With respect to Contention 2B, Beyond Nuclear asserted that the environmental report failed to review and evaluate the existing body of literature concerning aging issues.²¹ In support of its contention, Beyond Nuclear referred to its expert’s report and referenced a five-volume report prepared by the NRC and the U.S. Department of Energy.²²

In addition, Beyond Nuclear claimed that the environmental report must address the environmental implications of reactor aging issues identified by the Staff in a 2014 memorandum to the Commission.²³ Beyond Nuclear stated that this document characterizes certain issues that the NRC considers the most significant technical issues challenging reactor operation beyond sixty years, such as reactor pressure vessel embrittlement, irradiation-assisted stress corrosion cracking of internals, concrete structures and containment degradation, and electrical cable qualification and condition assessment.²⁴ Beyond Nuclear asserted that the environmental report should address the environmental implications of this lack of information and referenced as support 40 C.F.R. § 1502.22, the Council on Environmental Quality (CEQ) regulation pertaining to the treatment of incomplete or unavailable information in environmental impact statements.²⁵

The Board found Contention 2B inadmissible because it did not show a genuine dispute with the applicant and did not specify any legal requirement that the environmental report address the reports or the issues raised by the Staff

²⁰ *Id.* at 502 (quoting Petition at 12).

²¹ *See* Petition at 6-7.

²² *See id.* at 7, 12-14; *see id.*, Attach. 4, David A. Lochbaum, Proposed Subsequent License Renewal of Peach Bottom Units 2 and 3: Exelon’s Aging Management Programs Fail to Provide Adequate Measures for Consideration of Operating Experience Throughout the Period of Extended Operation (Nov. 16, 2018) (Lochbaum Report). Beyond Nuclear states that other examples of relevant studies are listed in Section 10 of the Lochbaum Report. Petition at 7.

²³ *See* Petition at 7-8, 13-14 (citing “Ongoing Staff Activities to Assess Regulatory Considerations for Power Reactor Subsequent License Renewal,” Commission Paper SECY-14-0016 (Jan. 31, 2014) (ML14050A306) (SECY-14-0016)).

²⁴ Petition at 7-8.

²⁵ Petition at 8 (quoting 40 C.F.R. § 1502.22) (“When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.”). Beyond Nuclear also asserts that an environmental report must address the environmental implications of a lack of information. *See* Petition at 14 (citing *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 443 (2011)).

in SECY-14-0016.²⁶ The Board further found that Beyond Nuclear does not identify the specific documents in the Lochbaum Report that it contends Exelon should have addressed and does not offer any evidence that NEPA mandates such a document review.²⁷ Thus, the Board concluded that Contention 2B fails to raise an issue material to the findings the NRC must make to support the action and fails to demonstrate a genuine dispute with the application.²⁸

In Contention 2C, Beyond Nuclear argued that the environmental report fails to address the significance of the “declining amount of external operating experience” due to the early shutdown or retirement of a significant portion of the currently operating fleet of reactors.²⁹ The Board found the premise of Contention 2C speculative and incorrect and determined that the contention was inadmissible.³⁰ It further concluded that Beyond Nuclear’s concern that the declining amount of future operating experience would significantly increase the risk of design-basis accidents was vague and speculative.³¹ The Board also found Contention 2C deficient because it lacked sufficient support for its expert’s assertion that in the future Exelon may not be able to acquire the operating experience needed for effective management of aging equipment.³² Thus, the Board concluded that Contention 2C did not show a genuine dispute with the application and lacked support.³³

B. Referred Ruling in Turkey Point

In Contention 2A, Beyond Nuclear challenged Exelon’s environmental report and Exelon’s reliance on the Table B-1 generic environmental analyses for license renewal.³⁴ Beyond Nuclear argued that Exelon, as a subsequent license renewal applicant, may not rely on Table B-1 because the regulation authoriz-

²⁶ LBP-19-5, 89 NRC at 504.

²⁷ *Id.*

²⁸ *Id.* at 505 & n.107 (citing 10 C.F.R. § 2.309(f)(1)(iv), (vi)).

²⁹ Petition at 8, 14.

³⁰ LBP-19-5, 89 NRC at 505-06. The Board noted that at oral argument Beyond Nuclear conceded that there is no actual decrease in the total volume of operating experience, but rather a potential decrease in the rate of accumulation of such experience. *Id.* at 505 n.109 (citing Tr. at 18).

³¹ *Id.* at 505-06.

³² *See id.* at 499-500. In Contention 1, the Board found the Lochbaum Report’s assertion that “[a]t some point, [o]perating [e]xperience may become insufficient to maintain effective aging management programs” to be too speculative with respect to the point in time at which the threshold would be reached and thus does not satisfy the contention admissibility requirement of 10 C.F.R. § 2.309(f)(1)(v). *Id.* (quoting Lochbaum Report at 20).

³³ LBP-19-5, 89 NRC at 506 & at 23 & n.114 (citing 10 C.F.R. § 2.309(f)(1)(v)-(vi)).

³⁴ *See supra* note 11 (describing the role of Table B-1 in the environmental review of license renewal applications).

ing such reliance — 10 C.F.R. § 51.53(c)(3) — pertains only to initial license renewal applicants.³⁵ We separately addressed the interpretation of 10 C.F.R. § 51.53(c)(3) in *Turkey Point* and determined that the regulation can apply to initial and subsequent license renewal proceedings.³⁶

II. DISCUSSION

A. Standard of Review

An appeal of a decision wholly denying a request for hearing is a matter of right under 10 C.F.R. § 2.311(c).³⁷ Unless an appeal demonstrates an error of law or abuse of discretion, we generally defer to the Board on contention admissibility rulings.³⁸ But an appellant must do more than recite its prior positions in a proceeding or state its general disagreement with a decision's result.³⁹ To obtain relief, an appellant must identify an error in a Board's decision.⁴⁰

Moreover, we do not consider arguments raised for the first time on appeal.⁴¹ The purpose of an appeal is not “to attempt to cure deficient contentions by presenting arguments and evidence never provided to the Board.”⁴² The supporting information for a contention should be submitted when the contention is filed.⁴³

As noted above, Beyond Nuclear appeals the Board's decision not to admit Contention 2. To be admissible, a contention must satisfy the legal standards

³⁵ See Petition at 11.

³⁶ *Turkey Point*, CLI-20-3, 91 NRC 133.

³⁷ 10 C.F.R. § 2.311(c).

³⁸ See, e.g., *Crow Butte Resources, Inc.* (License Renewal for the *In Situ* Leach Facility, Crawford, Nebraska), CLI-19-5, 89 NRC 329, 336 & n.40 (2019); *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), CLI-15-6, 81 NRC 340, 354-55 (2015); *Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 914 (2009).

³⁹ See *Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 6 and 7), CLI-17-12, 86 NRC 215, 219 (2017); *Susquehanna Nuclear, LLC* (Susquehanna Steam Electric Station, Units 1 and 2), CLI-17-4, 85 NRC 59, 72 (2017).

⁴⁰ See *Shieldalloy Metallurgical Corp.* (License Amendment Request for Decommissioning of the Newfield, New Jersey Facility), CLI-07-20, 65 NRC 499, 503 (2007).

⁴¹ See, e.g., *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-3, 75 NRC 132, 146 n.87 (2012); *Detroit Edison Co.* (Fermi Power Plant Independent Spent Fuel Storage Installation), CLI-10-3, 71 NRC 49, 51 n.7 (2010); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-4, 59 NRC 31, 44 (2004).

⁴² *Shieldalloy*, 65 NRC at 504 (quoting *USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 458 (2006)).

⁴³ *Entergy Nuclear Operations, Inc.* (Indian Point, Unit 2), CLI-16-5, 83 NRC 131, 137 n.33 (2016); *Shieldalloy*, CLI-07-20, 65 NRC at 504.

found in 10 C.F.R. § 2.309(f)(1). In particular, for each contention, the hearing request must meet the following requirements:

- (i) Provide a specific statement of the issue of law or fact to be raised or controverted;
- (ii) Provide a brief explanation of the basis for the contention;
- (iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;
- (iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;
- (v) Provide a concise statement of the alleged facts or expert opinions which support the petitioner's position on the issue and on which the petitioner intends to rely at hearing together with references to the specific sources and documents on which the petitioner intends to rely to support its position on the issue; and
- (vi) Provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact.⁴⁴

To show that a genuine dispute exists with the applicant, a contention must include references to specific portions of the application that the petitioner disputes and the supporting reasons for each dispute.⁴⁵ If the petitioner believes that the application fails to contain information on a relevant matter as required by law, the contention must identify each failure and the supporting reasons for the petitioner's belief.⁴⁶

B. Beyond Nuclear's Appeal

1. Contention 2A

We first address Beyond Nuclear's request that we remand LBP-19-5 to the Board for a ruling on whether 10 C.F.R. § 51.53(c)(3) applies to Exelon's environmental report.⁴⁷ As we previously stated, the Board did not rule on the applicability of section 51.53(c)(3). We note that the parties extensively briefed this matter before the Board, and the Board also conducted oral argument.⁴⁸ And we determined in *Turkey Point* — after considering the arguments raised

⁴⁴ 10 C.F.R. § 2.309(f)(1)(i)-(vi).

⁴⁵ *Id.* § 2.309(f)(1)(vi).

⁴⁶ *Id.*

⁴⁷ *See* Appeal at 16.

⁴⁸ *See* Petition at 9-12; Staff Answer to Petition at 45-56; Exelon Answer to Petition at 5-7, 29-36; Petitioner Reply at 18-32; Tr. 162-77.

in that case and the arguments raised by the parties here — that 10 C.F.R. § 51.53(c)(3) applies to subsequent license renewal applications and that, for Category 1 issues, Table B-1 contains a generic assessment and codification of the impacts that are reasonably likely to occur during a subsequent license renewal term.⁴⁹ Further briefing on the issue is not necessary, as we have already addressed the issue.

The Dissent contends not only that *Turkey Point* wrongly determined that 10 C.F.R. § 51.53(c)(3) applies to subsequent license renewals — a conclusion we decline to revisit here — but also that reversal is warranted because, as Beyond Nuclear asserts, the Board improperly found that the environmental report incorporated the GEIS by reference. We adhere to our decision in *Turkey Point* for the reasons expressed in that opinion. Moreover, Beyond Nuclear’s argument overlooks the well-settled principles that challenges may not be brought for the first time on appeal and that contentions must state a specific, supported challenge to the application. The appeal fails on both counts.

Beyond Nuclear asserts that the Board erred in finding that the environmental report incorporated the 2013 GEIS analysis of design-basis accidents by reference because the standards for incorporation by reference were not met.⁵⁰ Exelon and the Staff argue that Beyond Nuclear raises this argument for the first time on appeal.⁵¹ We agree. Indeed, the principal focus of Beyond Nuclear’s argument before the Board was that a subsequent license renewal applicant is precluded from relying on the Category 1 findings in Table B-1 due to the inapplicability of 10 C.F.R. § 51.53(c)(3) to subsequent license renewal applications and that the scope of the GEIS is limited to the first license renewal term after the original operating license term. Exelon and the Staff, however, had argued in the alternative that the environmental report incorporated by reference the 2013 GEIS, as permitted by 10 C.F.R. § 51.53(a).⁵² And during oral argument, the Board offered Beyond Nuclear an opportunity to respond to Exelon’s incorporation by reference argument, but Beyond Nuclear made no claim that the standards for incorporation by reference were not met.⁵³ Accordingly, Beyond Nuclear’s

⁴⁹ *Turkey Point*, CLI-20-3, 91 NRC at 141-45.

⁵⁰ Appeal at 6-7.

⁵¹ Exelon Brief in Opposition at 8-11; Staff Brief in Opposition at 12-13; see *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 NRC 631, 640 (2004) (finding that arguments may not be raised for the first time on appeal).

⁵² Exelon Answer to Petition at 30-31, 39-40; Staff Answer to Petition at 56-57; Tr. 189-90.

⁵³ Tr. at 189-90, as revised by Order (Granting Joint Motion for Transcript Corrections), app. A, at 5 (Apr. 17, 2019).

JUDGE GIBSON: But let’s go to his argument 2 which is that, okay, even if they’re not covered as on the 51.53 issue. Even if we have to go back to this GEIS, they are covered

(Continued)

challenge to the incorporation by reference of the GEIS is not appropriately considered on appeal.⁵⁴

Moreover, even were it appropriate to consider Beyond Nuclear's argument, the Board observed that in Contention 2A Beyond Nuclear only provided a "general argument that subsequent license renewal applicants cannot rely on the 2013 GEIS because it fails to 'expand the temporal scope of the environmental analysis' to subsequent license renewals."⁵⁵ The Board found that the GEIS discusses design-basis accidents and covers the subsequent license renewal period; therefore, there was no omission in the environmental report.⁵⁶ Further, the Board found that Beyond Nuclear did not explain why the analysis in the GEIS was inadequate or inapplicable to Exelon's application as would be required for a contention challenging the adequacy of the environmental report.⁵⁷ Beyond Nuclear's generalized arguments do not meet our contention admissibility standards, which require "intervenors to offer specific contentions on material issues, supported by alleged facts or expert opinion."⁵⁸ We find no error in the Board's conclusion.

2. Contentions 2B and 2C

Beyond Nuclear additionally asserts that the Board improperly applied our contention admissibility standards to Contention 2B and Contention 2C.⁵⁹ Specifically, Beyond Nuclear argues that it provided sufficient support to demonstrate the failure of Exelon's environmental report to consider relevant technical literature, issues raised in SECY-14-0016, and the environmental significance of the "declining body of external operating experience" due to the early shutdown of a significant number of reactors.⁶⁰ Beyond Nuclear asserts that it clearly identified the relevant documents and explained the relevance of their content.⁶¹ Beyond

— they're adequately addressed in that GEIS and they incorporated it by reference. Now how do you respond to that, Ms. Curran?

MS. CURRAN: We respond by raising specific criticisms of a lack of certain analyses in that environmental report. There are things that we think should be included in there in their discussion of environmental impacts which are not.

Id. at 192.

⁵⁴ See *Millstone*, CLI-04-36, 60 NRC at 640.

⁵⁵ LBP-19-5, 89 NRC at 502 (quoting Petition at 12).

⁵⁶ *Id.* at 501-02.

⁵⁷ *Id.* at 502-03.

⁵⁸ *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), CLI-09-8, 69 NRC 317, 323 (2009).

⁵⁹ Appeal at 1, 5-6, 11-16.

⁶⁰ *Id.* at 5-6.

⁶¹ *Id.* at 15.

Nuclear further argues that the Board disregarded relevant law by concluding that Beyond Nuclear had not specified any legal basis to require Exelon to address those documents.⁶² Beyond Nuclear points to *Diablo Canyon*, CLI-11-11, and 40 C.F.R. § 1502.22 as support for its claim that the environmental report should address the degree to which a lack of information affects the environmental risk posed by extended operation.⁶³

We find no error in the Board's application of the contention admissibility standards to Contention 2B and Contention 2C. With respect to Contention 2B, the Board found that the Lochbaum Report did not provide a basis to show a genuine dispute with the application. Beyond Nuclear has not pointed to any Board error. Beyond Nuclear does not address the Board's reliance on the Staff's and Exelon's arguments that Beyond Nuclear does not establish a connection between the documents supporting its contention and a change to the environmental consequences or impacts related to design-basis accidents.⁶⁴ Specifically, Beyond Nuclear did not link the "missing" information to any environmental consequences during the subsequent license renewal term.⁶⁵ Therefore, we do not find that the Board erred in determining that Beyond Nuclear does not demonstrate a genuine dispute with the application.⁶⁶

Beyond Nuclear asserts, however, that these documents must be reviewed in the environmental report in order to comply with NEPA.⁶⁷ In response, Exelon argues that Beyond Nuclear did not address subsequently developed NRC guidance addressing the information and Exelon's use of aging management programs consistent with revised guidance.⁶⁸ Exelon further argues that Beyond Nuclear cannot rely on the CEQ regulation as a legal basis for its contention, and that *Diablo Canyon* is inapplicable.⁶⁹ The Staff asserts that Beyond Nuclear's inclusion of a CEQ regulation in its contention is insufficient as a legal basis because the NRC, as an independent regulatory agency, is not bound by the CEQ NEPA regulations unless the Commission chooses to follow them.⁷⁰ The

⁶² *Id.* (quoting LBP-19-5, 89 NRC at 504).

⁶³ *Id.* at 15-16.

⁶⁴ *See* LBP-19-5, 89 NRC at 504.

⁶⁵ In its Petition, Beyond Nuclear asserts that "there can be no question that the accident risk posed by operating Peach Bottom is a relevant environmental consideration." Petition at 7. But Beyond Nuclear does not provide any fact or expert opinion asserting the extent of the impacts. Thus, contrary to its claim, Beyond Nuclear has not explained the relevance of the documents' contents to the environmental report. *See* Appeal at 15.

⁶⁶ *See* LBP-19-5, 89 NRC at 504.

⁶⁷ Appeal at 15-16.

⁶⁸ *See* Exelon Brief in Opposition at 16-17.

⁶⁹ *See id.* at 19-20.

⁷⁰ Staff Brief in Opposition at 18-19; *see Diablo Canyon*, CLI-11-11, 74 NRC at 443-44 (citing
(Continued)

Staff also asserts that *Diablo Canyon* is distinguishable because in that case, the application did not consider information regarding a nearby seismic fault for a site in which seismic hazards were acknowledged to be “disproportionately dominant” risk hazards in a severe accident mitigation alternatives analysis.⁷¹ Here, Beyond Nuclear does not show why the studies it cites would be material to the analysis of the environmental impacts of subsequent license renewal. Since Beyond Nuclear has not explained the relevance of the asserted missing information to design-basis accident risk or the environmental consequences of such accidents, Beyond Nuclear has not shown how the CEQ regulation it cites is relevant.⁷² Therefore, we find the Board did not err in dismissing Contention 2B for failing to raise a genuine dispute with the application.⁷³

With respect to Contention 2C, we find that Beyond Nuclear does not identify any error in the Board’s ruling. Beyond Nuclear refers to the Board’s ruling and generally claims that the Board erred but does not provide a specific argument or sufficient information to support its claim. For this reason, we uphold the Board’s ruling on Contention 2C. In any event, we agree with the Board that the contention lacks specificity. In Contention 2C, Beyond Nuclear only suggests that operating experience will be insufficient in the future and does not connect its asserted decrease in the rate of accumulation of operating experience to an increase in risk of design-basis accidents.⁷⁴ Consequently, we conclude that Beyond Nuclear has not shown an error in the Board’s decision in LPB-19-5.

Dominion Nuclear North Anna, LLC (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 235-36 & n.115 (2007)). Beyond Nuclear, however, specifically cited to the CEQ regulation as “guidance.” Petition at 8; Appeal at 16. The Staff also asserts that Beyond Nuclear did not explain why a regulation applicable to an agency in preparing an environmental impact statement should be interpreted as mandating what an applicant must do in preparing its environmental report. Staff Brief in Opposition at 18. But our contention admissibility requirements direct that on issues arising under NEPA, petitioners must file contentions based on an applicant’s environmental report. 10 C.F.R. § 2.309(f)(2).

⁷¹ See Staff Brief in Opposition at 19; Exelon Brief in Opposition at 20; *Diablo Canyon*, CLI-11-11, 74 NRC at 438, 440-41. In *Diablo Canyon*, the intervenor contended that since fire and seismic severe accident contributors identified in the severe accident mitigation alternatives analysis are “disproportionately dominant” when compared to all external events, discussion of a recently identified fault nearby should have been also been included in the analysis.

⁷² See 40 C.F.R. § 1502.22 (“When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.”).

⁷³ LBP-19-5, 89 NRC at 504.

⁷⁴ See *id.* at 505-06. The Staff noted that operating experience will continue to accrue, and, although nuclear power plant closures could decrease the rate of accruing operating experience, the total body of operating experience will continue to grow. Staff Answer to Petition at 58.

III. CONCLUSION

For the reasons discussed above, we *affirm* the Board's decision in LBP-19-5.
IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 12th day of November 2020.

Commissioner Baran and Commissioner Hanson, Dissenting in Part

We concur with the majority that there is no error in the Board's determination that Beyond Nuclear's Contention 2B and Contention 2C are inadmissible. However, we respectfully dissent from the majority's analysis of Contention 2A because we conclude that applying 10 C.F.R. § 51.53(c)(3) to subsequent license renewals is at odds with the regulation and the agency's obligations under NEPA. This legal conclusion does not reflect a policy position on the merits of subsequent license renewal or a determination that properly supported generic environmental findings cannot be applied in the subsequent license renewal context.

In Contention 2A, Beyond Nuclear argues that Exelon's reliance on the Generic Environmental Impact Statement for License Renewal of Nuclear Plants (2013 GEIS) to address reactor aging phenomena and design-basis accidents for the subsequent license renewal time period is misplaced and depends on an incorrect reading of 10 C.F.R. § 51.53(c)(3). Beyond Nuclear further argues that this deficient analysis cannot be applied to satisfy the agency's requirement to take a "hard look" under NEPA because the 2013 GEIS did not analyze the subsequent license renewal time period. We agree. In our view, the *Turkey Point* decision cited by the majority was wrongly decided.¹ Contrary to the majority's assertions, the plain and unambiguous language of 10 C.F.R. § 51.53(c)(3) legally precludes its application beyond the initial license renewal period, and the GEIS did not evaluate the environmental impacts of subsequent license renewal.

Section 51.53(c)(1) applies to "[e]ach applicant for renewal of a license to operate a nuclear power plant under part 54," and section 51.53(c)(2) contains requirements for the environmental report that must be submitted by any such applicant.² By contrast, section 51.53(c)(3) narrows the scope of license renewal applicants to which it applies and speaks only of "those applicants seeking an *initial* renewed license and holding an operating license, construction permit, or combined license as of June 30, 1995."³ The explicit language of the regulation states that the provisions of 51.53(c)(1) and (c)(2) apply to all license renewal applicants, including those for subsequent license renewal, while section 51.53(c)(3) applies only to initial license renewal applicants. A basic canon of statutory construction is that the express mention of one thing excludes all others. When the regulatory text of section 51.53(c)(3) specifically addresses "those applicants seeking an initial renewed license," it is properly read as not addressing applicants seeking other license renewal terms.

¹ CLI-20-3, 91 NRC 133.

² 10 C.F.R. § 51.53(c)(1)-(2).

³ *Id.* § 51.53(c)(3) (emphasis added).

Moreover, the 2013 GEIS did not analyze the environmental impacts of subsequent license renewal periods. The 2013 GEIS stated that it “documents the results of the systematic approach NRC used to evaluate the environmental consequences of renewing the licenses of commercial nuclear power plants and operating the plants for an additional 20 years beyond the current license term.”⁴ This statement of scope said nothing about subsequent license renewal terms. Similarly, in the section “Decisions to Be Supported by the GEIS,” the 2013 GEIS focused solely on whether to renew operating licenses “for an additional 20 years.”⁵ These are by no means the only examples leading us to conclude that agency decisionmakers did not consider the environmental impacts related to subsequent license renewal terms.⁶

We also disagree with the Board’s determination that the 2013 GEIS was successfully incorporated by reference into the licensee’s subsequent license renewal application. The 2013 GEIS does not address environmental impacts for the subsequent license renewal period. Therefore, incorporation by reference of the GEIS, without additional evaluation of impacts during the subsequent period of renewal, is insufficient to satisfy NEPA.

Because section 51.53(c)(3) applies only to applicants for initial license renewal and the 2013 GEIS did not actually analyze the subsequent license renewal time period, neither subsequent license renewal applicants nor the NRC Staff may exclusively rely on the GEIS and 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 to evaluate environmental impacts of Category 1 issues. Expanding the scope of the 2013 GEIS after the fact not only violates the agency’s obligations under NEPA to evaluate the impacts of its actions, but also effectively eliminates any opportunity for the public to be involved in the agency’s decision-making. We would therefore hold that Beyond Nuclear identified an error of law in the Board’s decision on Contention 2A, which should have been admitted as a contention of omission.

⁴ 2013 GEIS at S-4.

⁵ *Id.* at 1-7 to 1-8.

⁶ For example, in Appendix E — the appendix devoted to postulated accidents — the 2013 GEIS states that its scope is limited to an initial period of license renewal:

Since the NRC’s understanding of severe accident risk has evolved since issuance of the 1996 GEIS, this appendix assesses more recent information on severe accidents that might alter the conclusions in Chapter 5 of the 1996 GEIS. This revision considers how these developments would affect the conclusions in the 1996 GEIS and provides comparative data where appropriate. This revision does not attempt to provide new quantitative estimates of severe accident impacts. In addition, *the revision only covers one initial license renewal period for each plant (as did the 1996 GEIS)*. Thus, the population projections, meteorology, and exposure indices used in the 1996 GEIS are assumed to remain unchanged for purposes of this analysis.

2013 GEIS at E-2 (emphasis added).

For these reasons, we would *affirm in part* and *reverse in part* the Board's decision in LBP-19-5.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

**Docket Nos. 50-293-LT
72-1044-LT**

**ENTERGY NUCLEAR OPERATIONS, INC.,
ENTERGY NUCLEAR GENERATION
COMPANY, HOLTEC INTERNATIONAL,
and HOLTEC DECOMMISSIONING
INTERNATIONAL, LLC
(Pilgrim Nuclear Power Station)**

November 12, 2020

LICENSE TRANSFER

NRC regulations allow the Staff to issue its approval or denial of a license transfer application, consistent with its findings in its Safety Evaluation Report, during a pending adjudicatory proceeding. 10 C.F.R. § 2.1316(a); *see also* Atomic Energy Act of 1954, as amended (AEA) § 189a., 42 U.S.C. § 2239(a)(2)(A) (permitting issuance of license amendment on an immediately effective basis, upon a determination that the amendment involves no significant hazards consideration, notwithstanding the pendency of a hearing request). But the application “will lack the agency’s final approval until and unless the Commission concludes the adjudication” in the Applicants’ favor. *See Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-19-11, 90 NRC 258, 262 (2019); *Vermont Yankee Nuclear Power Corp. and AmerGen Vermont, LLC* (Vermont Yankee Nuclear Power Station), CLI-00-17, 52 NRC 79, 83 (2000)).

FINANCIAL QUALIFICATIONS

In the early stages of the decommissioning process, cost estimates are necessarily uncertain, whether submitted by a current licensee or by a license transfer applicant. A license transfer applicant's site-specific cost estimate need not be more detailed, more certain, or more conservative than the estimate submitted by a current licensee.

FINANCIAL QUALIFICATIONS

In license transfer adjudications, we deem financial assurance to be acceptable if it is based on plausible assumptions and forecasts, even if "the possibility is not insignificant that things will turn out less favorably than expected." Because the potential safety impacts from a shortfall in financial funding would not be "so direct or immediate as the safety impacts of significant technical deficiencies," the demonstration of reasonable assurance of financial qualification is flexible. *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 221-22 (1999).

FINANCIAL QUALIFICATIONS: DECOMMISSIONING COST ESTIMATE

NRC guidance provides for licensees to update their decommissioning cost estimate yearly for inflation and as appropriate for other significant increases in project costs. See *Assuring the Availability of Funds for Decommissioning Nuclear Reactors*, Regulatory Guide 1.159, rev. 2 (Oct. 2011), at 12 (ML-112160012) (Regulatory Guide 1.159). There is no specific minimum contingency allowance requirement for the site-specific decommissioning cost estimate, and a 17% contingency allowance falls within the range of contingency allowances that have been accepted for other site-specific decommissioning cost estimates in the past.

FINANCIAL QUALIFICATIONS: DECOMMISSIONING COST ESTIMATE

We do not require that the site-specific decommissioning cost estimate include estimated costs for potential but highly uncertain contingencies.

FINANCIAL QUALIFICATIONS: DECOMMISSIONING COST ESTIMATE

Our regulations require a site characterization when a licensee submits its

license termination plan, at least two years before the date of license termination. To the extent that petitioner sought to challenge the adequacy or accuracy of applicant's cost estimates because a site characterization has not yet been completed, petitioner impermissibly challenged NRC regulations.

POST-SHUTDOWN DECOMMISSIONING ACTIVITIES REPORT (PSDAR)

A license transfer, even where a facility is shut down, is separate from NRC's oversight of decommissioning activities. A site-specific decommissioning cost estimate and the associated decommissioning schedule must necessarily be reviewed as part of the determination concerning potential license transferee's financial qualifications. But a license transfer review does not itself involve any consideration of the potential environmental impacts of decommissioning activities.

POST-SHUTDOWN DECOMMISSIONING ACTIVITIES REPORT (PSDAR)

The purpose of a PSDAR is to provide a "general overview for the public and the NRC of the licensee's proposed decommissioning activities. The NRC does not approve a PSDAR, nor does a PSDAR amend a license. A PSDAR does not authorize a licensee to perform any decommissioning activity that is not already permitted under the license or would result in significant environmental impacts not already reviewed. 10 C.F.R. § 50.82(a)(6)(ii).

NEPA: CATEGORICAL EXCLUSIONS

Pursuant to 10 C.F.R. § 51.22(c)(21), the NRC categorically excluded license transfer actions from the need to perform further environmental analysis. A license transfer does not permit the licensee to operate the facility in a different manner than was permitted under the existing licenses. Therefore a license transfer would not usually present environmental impacts any different from those already considered in relevant generic or site-specific NEPA analyses.

NEPA: CATEGORICAL EXCLUSIONS

A license transfer applicant's reliance on different financial assurance methods than a current licensee would not normally present the potential for any new and significant risk of environmental harm. All applicants must demonstrate adequate financial qualification to take over the ownership and/or operation of a

facility. The categorical exclusion rule applies even when an applicant does not rely on the same methods of showing financial qualification on which the current licensee relied.

MEMORANDUM AND ORDER

This proceeding concerns a license transfer application involving the renewed facility operating license for the Pilgrim Nuclear Power Station and the general license for the associated Independent Spent Fuel Storage Installation (ISFSI) (together, the licenses). Entergy Nuclear Operations, Inc. (ENOI), on behalf of itself and Entergy Nuclear Generation Company (ENGCO), Holtec International, and Holtec Decommissioning International, LLC (HDI) (collectively, the Applicants), requested NRC consent to the indirect transfer of control of the licenses to Holtec International and HDI and to the direct transfer of ENOI's operating authority to HDI.¹

After completing its review, the NRC Staff issued (1) an order approving the license transfer; (2) a related regulatory exemption that had been requested in the license transfer application; and (3) a conforming license amendment to reflect the transfer that included the deletion of certain conditions unique to ENOI and an associated name change.² NRC regulations allow the Staff to issue its approval or denial of a license transfer application, consistent with its findings in its Safety Evaluation Report (SER), during a pending adjudicatory proceeding.³ But the application "will lack the agency's final approval until and unless the Commission concludes the adjudication" in the Applicants' favor.⁴

¹ See Pilgrim Nuclear Power Station; Consideration of Approval of Transfer of License and Conforming Amendment, 84 Fed. Reg. 816 (Jan. 31, 2019) (Hearing Opportunity Notice). We refer to ENGCO and ENOI together as "Entergy." We refer to HDI and Holtec Pilgrim, LLC (the name of the owner licensee following the transfer) together as "Holtec."

² See Order Approving Direct and Indirect Transfer of License and Conforming Amendment (Aug. 22, 2019) (ADAMS accession no. ML19170A265) (Order Approving Transfers); Exemption (Aug. 22, 2019) (ML19192A086) (Exemption); Amendment No. 249 to DPR-35, attached as Encl. 1 to Letter from Scott P. Wall, NRC, to Pierre Paul Oneid, Holtec International, and Pamela B. Cowan, HDI (Aug. 27, 2019) (ML19235A050) (License Amendment).

³ 10 C.F.R. § 2.1316(a); *see also* Atomic Energy Act of 1954, as amended (AEA) § 189a., 42 U.S.C. § 2239(a)(2)(A) (permitting issuance of license amendment on an immediately effective basis, upon a determination that the amendment involves no significant hazards consideration, notwithstanding the pendency of a hearing request).

⁴ See CLI-19-11, 90 NRC 258, 262 (2019) (quoting *Vermont Yankee Nuclear Power Corp. and AmerGen Vermont, LLC* (Vermont Yankee Nuclear Power Station), CLI-00-17, 52 NRC 79, 83 (2000)).

The Staff's order and related issuances therefore remain subject to our authority to modify, condition, or rescind them, based on the results of this proceeding.

We consider today the petition for leave to intervene and request for a hearing filed by the organization Pilgrim Watch.⁵ The Applicants oppose the request.⁶ The NRC Staff is not participating in this proceeding. For the reasons outlined below, we deny Pilgrim Watch's request for a hearing.

I. BACKGROUND

A. The License Transfer Application

As outlined in the application, the proposed license transfers would be effectuated pursuant to the terms of an Equity Purchase and Sale Agreement, pursuant to which 100% of the equity interests in ENG C would be transferred to Holtec International.⁷ Upon closing of the agreement, indirect control of ENG C would transfer from ENG C's parent companies to Holtec International.⁸ ENG C's name would immediately be changed to Holtec Pilgrim,⁹ which would be the licensed owner of Pilgrim. Holtec Pilgrim would own the Pilgrim facility and associated real estate and assets, including the nuclear decommissioning trust fund, which

⁵ Pilgrim Watch Petition to Intervene and Hearing Request (Feb. 20, 2019) (PW Petition). The Commonwealth of Massachusetts also petitioned to intervene; that matter has been settled. *See* Commonwealth of Massachusetts' Petition for Leave to Intervene and Hearing Request (Feb. 20, 2019); Commonwealth of Massachusetts' Notice of Withdrawal of its Petition for Leave to Intervene and Hearing Request (June 19, 2020). Because the settlement agreement has not been filed on the docket, we take no position on its substance and we do not consider its effect on Pilgrim Watch's proposed contentions. The NRC is not a party to the settlement agreement and therefore is not bound by its terms.

⁶ Applicants' Answer Opposing Pilgrim Watch Petition for Leave to Intervene and Hearing Request (Mar. 18, 2019) (Applicants Answer to PW).

⁷ The Applicants relied on the Staff's order approving the transfers and closed the transfer transaction on August 26, 2019. But because the transfers have been challenged in this proceeding, they lack final NRC approval and are therefore still provisional in nature. We refer in this decision to the license transfers as they were proposed in the application.

⁸ *See* Application for Order Consenting to Direct and Indirect Transfers of Control of Licenses and Approving Conforming License Amendment, and Request for Exemption from 10 C.F.R. § 50.82(a)(8)(i)(A), at 1 (Application), attached (Encl. 1) to Letter from A. Christopher Bakken III, ENOI, to NRC Document Control Desk (Nov. 16, 2018) (Cover Letter). The cover letter and application are available together under ML18320A031.

⁹ The Applicants state that although ENG C's name would be changed to Holtec Pilgrim, the same legal entity will continue to exist as Pilgrim's owner before and after the transfer. *See* Cover Letter at 2; Application at 1. More specifically, they state that prior to the proposed transaction's closing, ENG C would be converted to a limited liability company and that, under applicable Massachusetts law on such a conversion, the converted entity is considered to be the same entity as that which existed prior to the conversion. *See* Cover Letter at 2 n.1.

would be held outside of Holtec Pilgrim's administrative control.¹⁰ Holtec Pilgrim also would hold title to the spent nuclear fuel stored at Pilgrim and would accede to the rights and obligations of ENGCO under the Standard Contract for Disposal of Spent Nuclear Fuel and/or High Level Waste (Standard Contract).¹¹ Holtec Pilgrim expects to recover, through litigation against the United States, the spent fuel management costs that it will incur resulting from DOE's breach of its contractual obligation to dispose of the Pilgrim spent nuclear fuel.¹²

Following the proposed license transfer, the operating authority to conduct licensed activities at Pilgrim would transfer from ENOI to HDI. Holtec International formed HDI to assume the licensed operator responsibilities for decommissioning nuclear power plants owned by Holtec International.¹³ HDI will enter into a decommissioning operator services agreement with Holtec Pilgrim under which HDI will act as Holtec Pilgrim's agent and Holtec Pilgrim will pay HDI's operating costs.¹⁴ Holtec Pilgrim would pay decommissioning, spent fuel management, and site restoration costs.¹⁵

HDI intends to contract with Comprehensive Decommissioning International, LLC (CDI), to serve as the decommissioning general contractor. CDI would perform the day-to-day licensed activities, including decommissioning activities, subject to HDI's oversight and control as the licensed operator.¹⁶ CDI was formed to perform decommissioning activities at decommissioning nuclear power plants owned by Holtec.¹⁷ CDI is jointly owned by Holtec International (through its subsidiary HDI) and SNC-Lavalin Group (through its subsidiary Kentz USA Inc.).¹⁸ In short, following the proposed license transfers, Holtec Pilgrim would be the licensed owner, and HDI would be the licensed operator of the Pilgrim facility.

Holtec Pilgrim and HDI intend to significantly expedite the decommissioning of Pilgrim by implementing the DECON method of decommissioning. Under the DECON approach, the structures, equipment, and portions of the facility that contain radioactive contaminants are "promptly removed or decontaminated to

¹⁰ See Application at 1 & n.1. Certain assets are excluded from the purchase and sale agreement and would not be owned by Holtec Pilgrim. *Id.*

¹¹ See *id.* at 19; see also 10 C.F.R. § 961.11 (text of contract). Boston Edison Company, a previous owner of Pilgrim, entered into the Standard Contract with the U.S. Department of Energy (DOE) in June 1983. See Application at 19.

¹² Application at 19.

¹³ See *id.* at 1.

¹⁴ *Id.* at 2.

¹⁵ *Id.* at 16.

¹⁶ *Id.* at 2.

¹⁷ *Id.* at 3.

¹⁸ *Id.* at 2.

a level that permits termination of the license shortly after cessation of operations.”¹⁹ If the proposed transfer is approved as a final matter, HDI intends to complete the transfer of spent nuclear fuel to the ISFSI as soon as practicable and to promptly proceed with decontaminating and dismantling the site (except for the ISFSI portion).²⁰ HDI’s stated goal is to complete radiological decommissioning and site restoration and to release the non-ISFSI portions of the site for unrestricted use within eight years after license transfer.²¹ HDI outlined its plans and accelerated schedule for decommissioning Pilgrim in a revised Post-Shutdown Decommissioning Activities Report (PSDAR) that it submitted separate from the application.²² HDI’s PSDAR was contingent on NRC approval of the license transfer application and closure of the asset sale.

ENOI submitted its own PSDAR in 2018 that outlined a decommissioning schedule based on delayed decommissioning under the SAFSTOR decommissioning approach.²³ The SAFSTOR method involves placing the facility in a “safe, stable condition . . . for a period of time, followed by subsequent decontamination and dismantlement to levels that permit license termination.”²⁴ Under SAFSTOR, after reactor fuel and radioactive liquids are removed, the facility is left intact for a long-term dormant period that allows for radioactivity levels to be significantly reduced by radioactive decay. If we were to rescind the Staff’s order approving the license transfers, ENOI’s PSDAR would go back into effect. As outlined in its PSDAR, ENOI’s intention was to dismantle and decontaminate Pilgrim during the years 2074 to 2078, terminate the license in 2079, and complete site restoration by 2080.²⁵

B. Financial Qualification Review

Under the Atomic Energy Act (AEA) and associated regulations, the NRC

¹⁹ See “Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, Supplement 1 Regarding the Decommissioning of Nuclear Power Reactors” (Final Report), NUREG-0586, Supplement 1, vol. 1 (Nov. 2002), at 3-16 (ML023470327 (package)) (Decommissioning GEIS).

²⁰ See Application at 4.

²¹ See *id.*

²² See “DECON Post-Shutdown Decommissioning Activities Report,” attached to Letter from Pamela B. Cowan, HDI, to NRC Document Control Desk (Nov. 16, 2018) (ML18320A040) (HDI PSDAR).

²³ See “Pilgrim Post-Shutdown Decommissioning Activities Report,” attached to Letter from Mandi K. Halter, ENOI, to NRC Document Control Desk (Nov. 16, 2018), at 7 (ML18320A034) (Entergy PSDAR).

²⁴ Decommissioning GEIS at 3-19.

²⁵ Entergy PSDAR at 7.

must give written consent for a license transfer.²⁶ The NRC will approve a license transfer application if it determines that the proposed transferee is qualified to hold the license and that the proposed transfer is consistent with applicable law, regulations, and orders.²⁷ The license transfer review is limited to specific matters, including the technical and financial qualifications of the proposed transferee.²⁸ A license transfer application must provide “reasonable assurance . . . that funds will be available to decommission the facility.”²⁹ The application also must provide information sufficient to demonstrate the “financial qualification of the applicant to carry out . . . the activities” for which the license is sought.³⁰ Thus, a license transfer applicant for a reactor, like Pilgrim, that has permanently ceased operating must demonstrate that it has the financial qualifications to pay for managing the spent fuel on the site (e.g., transferring fuel from wet storage to dry and maintaining an ISFSI).³¹

NRC regulations outline acceptable methods of demonstrating financial assurance of decommissioning funding, including the “prepayment” method.³² Prepayment refers to prepaid funds deposited in an account segregated from the licensee’s assets and outside of the licensee’s administrative control (such as a trust, escrow account, or government fund) in an amount that “would be sufficient to pay decommissioning costs at the time permanent termination of operations is expected.”³³ A licensee that has set aside prepaid decommissioning funds based on a site-specific decommissioning cost estimate may take credit for projected earnings on the account’s funds, up to a 2% annual real rate of return, through the projected decommissioning period.³⁴

In this case, Holtec Pilgrim relies on the prepayment method of financial assurance based on the funds available in the Pilgrim decommissioning trust fund. At closing, the trust was to contain a minimum value of \$1.03 billion.

²⁶ See AEA § 184, 42 U.S.C. § 2234 (providing that no license granted under the AEA “shall be transferred . . . directly or indirectly, through transfer of control of any license to any person, unless the Commission . . . shall give its consent in writing”); 10 C.F.R. §§ 50.80(a), 72.50(a) (implementing the AEA provision as to power reactor and ISFSI licenses, respectively).

²⁷ See 10 C.F.R. § 50.80(c).

²⁸ See *id.* § 50.80(b)(1)(i) (referencing 10 C.F.R. §§ 50.33 and 50.34).

²⁹ See *id.* §§ 50.33(k)(1), 50.80(b)(1)(i); see also *id.* § 72.30(b)-(c) (regarding ISFSI decommissioning).

³⁰ See *id.* § 50.33(f).

³¹ See, e.g., *id.* §§ 50.33(f), 50.33(k)(1), 72.30(b)-(c). Here, the Applicants need not demonstrate financial qualification to cover power reactor operating costs given that reactor operations have permanently ceased at Pilgrim. See *id.* § 50.33(f)(2); Letter from Brian R. Sullivan, ENOI, to NRC Document Control Desk (June 10, 2019) (ML19161A033).

³² See 10 C.F.R. § 50.75(e)(1).

³³ *Id.* § 50.75(e)(1)(i).

³⁴ *Id.*

The Applicants claim that this amount will be sufficient — assuming a credit for projected interest earnings at an annual real rate of 2% — to pay the estimated costs of decommissioning, spent fuel management, and site restoration.³⁵ The Applicants estimate a total cost of \$1.134 billion (in 2018 dollars) to cover the estimated costs of decommissioning (\$593 million), spent fuel management (\$501 million), and site restoration (\$40 million).³⁶

The application includes a cash flow analysis for the years 2019 through 2063, the year at which final license termination is contemplated. The analysis begins with a trust fund balance of \$1.03 billion given the terms in the equity purchase and sale agreement. For each year, the cash flow analysis identifies the projected (1) withdrawals from the trust fund to pay for decommissioning, spent fuel management, and site restoration costs; (2) interest earnings on the funds (based on a 2% real rate of return); and (3) trust fund year-end balances.³⁷ The cash flow analysis projects approximately \$217 million remaining in the fund at the end of 2025, following decommissioning, site restoration, and partial site release for unrestricted use of the non-ISFSI portions of the Pilgrim site. The analysis concludes that this amount, together with projected annual interest earnings on the fund, would be sufficient to pay for remaining spent fuel management costs and for the cost of decommissioning the ISFSI and restoring the ISFSI site. The cash flow analysis projects that approximately \$3.6 million would remain in the fund in 2063, following final expenditures for spent fuel management, ISFSI decommissioning, restoration of the ISFSI site, and final license termination.³⁸

To demonstrate financial qualification for the license transfer, the Applicants rely only on the decommissioning trust fund. Holtec Pilgrim also states that it expects to recover — through litigation resulting in a judgment or settlement — hundreds of millions of dollars from the United States as reimbursements for spent fuel management costs that Holtec Pilgrim will incur due to DOE's breach of obligations under the Standard Contract.³⁹

Our financial assurance requirements, combined with our procedures for review of a license transfer application, help ensure that a license is not transferred to an entity that will be financially unable to maintain and decommission the

³⁵ See Application at 16-18.

³⁶ See *id.*, Attach. D, "Schedule & Financial Information for Decommissioning," tbl. "Decommissioning Cost Estimate Summary (Thousands of 2018 dollars)."

³⁷ See *id.*, Attach. D, "Schedule & Financial Information for Decommissioning," tbl. "Pilgrim Nuclear Power Station Decommissioning Cash Flow Analysis."

³⁸ *Id.*

³⁹ See, e.g., Applicants Answer to PW at 20 ("[T]he additional funds that Holtec Pilgrim will receive through recovery of spent fuel management costs provide hundreds of millions of dollars of additional cash flow that could be used to provide additional assurance if necessary.").

reactor facility and associated ISFSI. But as we recently emphasized in the *Oyster Creek* license transfer proceeding, our oversight of financial ability to decommission a facility and to manage the spent fuel on the site does not end after the financial qualification review.⁴⁰ A licensee in decommissioning must continue until the license is terminated to demonstrate annually that funding for both decommissioning and spent fuel management remains adequate. The NRC's examination of a transfer applicant's financial qualification therefore is conducted in light of regulatory requirements designed to ensure that funding remains sufficient until no longer needed.

For example, a licensee that has submitted its site-specific decommissioning cost estimate must submit to the NRC a financial assurance status report every year. The report must include the following information, current through the end of the previous calendar year: (1) the amount spent on decommissioning, both cumulatively and over the previous calendar year; (2) the remaining balance in the decommissioning trust fund (as well as any amount provided by any additional financial assurance method relied on); (3) an estimate of the costs to complete decommissioning as well as the decommissioning criteria upon which the estimate is based; (4) the difference, if any, between the actual decommissioning costs incurred and the previously estimated costs for work performed during the year; (5) any modifications to a licensee's current method of providing financial assurance since the last submitted report; and (6) any material changes to trust agreements or financial assurance contracts.⁴¹

If the remaining decommissioning funds, together with the projected earnings on those funds — calculated at a rate no greater than a 2% real rate of return — are not sufficient to cover the estimated cost to complete decommissioning, the licensee must include in the status report additional financial assurance to cover the remaining estimated costs.⁴² Such additional assurance might be in the form of a deposit to the trust fund or other prepayment, a parent guarantee, or other method that the Staff may approve pursuant to our regulations.⁴³

The NRC also requires licensees that have submitted a site-specific decommissioning cost estimate to provide an annual report on the status of their spent fuel management funding. This report must specify the amount of funds available to cover the cost of managing the spent fuel and the projected cost of managing the fuel until DOE takes title to and possession of the fuel.⁴⁴ If the available funds are not sufficient to cover the projected cost, the report must

⁴⁰ *Exelon Generation Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-19-6, 89 NRC 465, 475-76 (2019).

⁴¹ See 10 C.F.R. § 50.82(a)(8)(v).

⁴² *Id.* § 50.82(a)(8)(vi).

⁴³ See *id.* § 50.75(e)(1).

⁴⁴ *Id.* § 50.82(a)(8)(vii)(A)-(B).

include a plan to obtain the additional funds to cover the cost.⁴⁵ In addition, a licensee must provide to the NRC, for its review and preliminary approval, a program to manage and to provide funding for managing all spent fuel at the reactor.⁴⁶

Additional NRC regulations on decommissioning also help to ensure that adequate decommissioning funding is maintained. For example, a licensee must first notify the NRC in writing, with a copy to the affected State(s), before performing any decommissioning activity that would significantly increase the estimated site-specific decommissioning cost beyond that provided to the NRC.⁴⁷ And NRC regulations prohibit a licensee from conducting any decommissioning activity that would result in a loss of reasonable assurance that adequate funds will be available for decommissioning.⁴⁸

In short, the NRC's financial qualification review for a license transfer will not be the only examination of a transferee's ability to pay for decommissioning and spent fuel management. Subject to the NRC's oversight and requirements, a licensee must annually continue to show adequate funding until the license has been terminated and all spent fuel has been removed from the site.⁴⁹

C. Exemption Request

NRC regulations do not permit licensees to use a decommissioning trust fund to pay for activities that do not fall under the NRC's definition of decommissioning.⁵⁰ Because Holtec Pilgrim and HDI intend to use the trust fund to pay not only for decommissioning costs but also for spent fuel management and non-radiological site restoration costs, they needed to obtain — and requested as part of the application — an exemption from 10 C.F.R. § 50.82(a)(8)(i)(A), which limits trust fund withdrawals to decommissioning activities.⁵¹

⁴⁵ *Id.* § 50.82(a)(8)(vii)(C).

⁴⁶ *Id.* § 50.54(bb).

⁴⁷ *See id.* § 50.82(a)(7) (referencing the decommissioning cost estimate provided to the NRC in a licensee's PSDAR).

⁴⁸ *Id.* § 50.82(a)(6)(iii).

⁴⁹ *Id.* § 50.82(a)(8)(v)-(vii).

⁵⁰ *See id.* § 50.82(a)(8)(i)(A) (withdrawals from the decommissioning trust fund may be made for "expenses for legitimate decommissioning activities consistent with the definition of decommissioning in § 50.2"). As defined in 10 C.F.R. § 50.2, to "decommission" means "to remove a facility or site safely from service and reduce residual radioactivity to a level that permits — (1) [r]elease of the property for unrestricted use and termination of the license; or (2) [r]elease of the property under restricted conditions and termination of the license."

⁵¹ *See* Encl. 2 to Cover Letter, HDI Request for Exemption from 10 CFR 50.82(a)(8)(i)(A) (Exemption Request).

In the exemption request, HDI stated that the amount in the decommissioning trust fund exceeds the amount necessary to complete radiological decommissioning, spent fuel management, and site restoration. HDI stated that if it were unable to use the trust fund for spent fuel management and site restoration expenses, it would need to “provide additional funding that would not be recoverable from the trust fund until the [Pilgrim] license is terminated.”⁵² HDI stated that it would bear an unnecessary and undue burden if it were unable to withdraw funds in the trust that exceed those required to pay for decommissioning activities. In support of the exemption request, HDI enclosed the same cash flow analysis submitted in the financial qualification section of the application. The analysis depicts HDI’s projected trust fund withdrawals over the years 2019 through 2063 and shows approximately \$3.6 million remaining in the fund at final license termination.⁵³ HDI noted in its request that the NRC has granted several other requests for an exemption from 10 C.F.R. § 50.82(a)(8)(i)(A), including for the Vermont Yankee, Oyster Creek, Crystal River Unit 3, and Kewaunee facilities. The Staff approved the Pilgrim exemption request on August 22, 2019.⁵⁴

The exemption is within the scope of this adjudication because Holtec’s demonstration of financial qualification for the license transfer relies on the exemption. Specifically, Holtec must demonstrate reasonable assurance that funds will be available to decommission the facility and must show its financial qualification to carry out the activities for which the license is sought, which here includes the spent fuel management activities.⁵⁵ Holtec estimates spent fuel management costs in the amount of \$501,467,000. Relying on the requested exemption, Holtec therefore plans to withdraw an estimated \$501 million from the trust fund to pay for the spent fuel management expenses. The exemption also allows Holtec to withdraw funds from the trust fund to pay for site restoration, which Holtec estimates will cost approximately \$40 million.⁵⁶

⁵² See *id.* at E-6.

⁵³ See *id.*, tbl.1, “Annual DECON Decommissioning Fund Cash Flow for the Pilgrim Nuclear Power Station.”

⁵⁴ The exemption was “effective upon the NRC’s issuance of a conforming license amendment reflecting HDI and Holtec Pilgrim as the licensees for Pilgrim, following NRC approval of the license transfer application and the Applicants’ completion of the transaction.” Exemption at 12.

⁵⁵ See 10 C.F.R. § 50.33(f), (k)(1).

⁵⁶ Site restoration is a state-regulated matter. For the license transfer itself, therefore, Holtec need not show funding sufficient to complete site restoration, which includes satisfying state standards for the clean-up of non-radiological contaminants.

D. The Staff's Approval of the Transfer

NRC regulations specify that even where an adjudicatory hearing in the proceeding is pending, the Staff is expected, consistent with the findings in its SER, to promptly issue an approval or denial of a request for license transfer.⁵⁷ But in such circumstances, a Staff approval will not constitute final agency action on the application. If the NRC receives a hearing request on a license transfer application, we review the request to determine if it satisfies the standards for intervention warranting a hearing and, if it does, we must consider the merits of the arguments presented. And while the Staff's review of the application may overlap with our review of the participants' adjudicatory challenges to the application, "they are separate reviews, each of which must be completed and satisfied before a license transfer approval can be considered final."⁵⁸

While applicants may close a license transfer transaction despite the lack of final agency approval of the application, they do so at their own risk "in the event that the Commission later determines that intervenors have raised valid objections to the license transfer application."⁵⁹ Applicants that act on a Staff order bear the risk that we may ultimately — based on the results of a potential or pending hearing — modify or impose new license conditions relating to the transfer, or rescind the Staff's approval.

Consistent with these principles, the Staff's August 22, 2019, Order approving this license transfer contained the following condition:

The NRC staff's approval of this license transfer is subject to the Commission's authority to rescind, modify, or condition the approved transfer based on the outcome of any post-effectiveness hearing on the license transfer application. For example, if the Commission overturns the NRC staff's approval of this license transfer, this Order and any conforming amendments reflecting this transfer, will be rescinded, and the Applicants must return the plant ownership to the status quo ante and revert to the conditions existing before the transfer.⁶⁰

E. Issuance of License Amendment on Immediately Effective Basis

After the transaction closed, the Staff issued the license amendment reflecting

⁵⁷ 10 C.F.R. § 2.1316(a). The "Commission relies on the staff, subject to Commission oversight, to exercise good judgment" regarding whether there are "circumstances that might warrant delay in the staff's review or action on the application." See Streamlined Hearing Process for NRC Approval of License Transfers, Final Rule, 63 Fed. Reg. 66,721, 66,726 (Dec. 3, 1998) (Streamlined Hearing Process).

⁵⁸ CLI-19-11, 90 NRC at 262.

⁵⁹ See *id.* at 262-63 (quoting *Vermont Yankee*, CLI-00-17, 52 NRC at 83).

⁶⁰ Order Approving Transfers at 6, Condition (2).

the transfer and the name change as well as the deletion of four financial license conditions imposed when the NRC approved the transfer of the Pilgrim license from the Boston Edison Company.⁶¹ This included License Condition J (4), which had required ENGCO to have access to contingency funding of “not less than fifty million dollars (\$50m) for payment, if needed, of Pilgrim operating and maintenance expenses, the cost to transition to decommissioning status in the event of a decision to permanently shut down the unit, and decommissioning costs.”⁶² The condition specified that once the plant had shut down following a decision to decommission, “Entergy Nuclear will use any remainder of the \$50m contingency fund that has not been used to safely operate and maintain the plant to support the safe and prompt decommissioning of the plant, to the extent such funds are needed for safe and prompt decommissioning.”⁶³ The condition did not affect the NRC’s authority to ensure that adequate funds would “remain available in the plant’s separate decommissioning fund,” which would be maintained pursuant to NRC regulations and oversight.⁶⁴

The Staff issued the amendment on an immediately effective basis based on a determination that the amendment involved “no significant hazards consideration.”⁶⁵ The Staff noted that the NRC had generically determined that any amendment to a power reactor or ISFSI license that “does no more than conform the license to reflect the transfer action” involves “no significant hazards consideration.”⁶⁶ The Staff further stated that “[n]o contrary determination ha[d] been made with respect to this specific application.”⁶⁷

II. DISCUSSION

A. Intervention Requirements

To intervene in an NRC licensing proceeding, a petitioner must show standing to intervene and submit at least one admissible contention for hearing.⁶⁸ Because

⁶¹ See Notification of Issuance of Conforming Amendment (Aug. 27, 2019); License Amendment.

⁶² See Application, Attach. A, “Renewed Facility Operating License (Changes),” at 4, Condition J (4) (License Condition J (4)).

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ See Safety Evaluation by the Office of Nuclear Reactor Regulation Related to the Request for Direct and Indirect Transfer (Aug. 22, 2019), at 25 (ML19170A250) (SER); *see also* AEA § 189a., 42 U.S.C. § 2239(a)(2)(A).

⁶⁶ SER at 25 (citing 10 C.F.R. § 2.1315).

⁶⁷ *Id.*

⁶⁸ See 10 C.F.R. § 2.309(a), (d), (f); Hearing Opportunity Notice, 84 Fed. Reg. at 816-17 (referencing requirements for intervention).

we do not find Pilgrim Watch's proffered contentions admissible, we do not reach Pilgrim Watch's standing to intervene in this proceeding.

NRC regulations in 10 C.F.R. § 2.309(f)(1) specify the requirements for an admissible contention. For each contention, a petitioner must explain the contention's basis and provide supporting facts or expert opinion on which the petitioner intends to rely in litigating the contention with references to specific sources or documents on which the petitioner intends to rely. To be admissible, a contention must fall within the scope of the proceeding and be material to the findings that the NRC must make for the proposed licensing action. The petitioner must identify the specific portions of the application that the petitioner disputes along with the supporting reasons for each dispute; or, if a petitioner believes that an application fails altogether to contain information required by law, the petitioner must identify each failure and provide supporting reasons for the petitioner's belief. We long have emphasized that these contention admissibility requirements are strict.⁶⁹ They are intended to ensure that adjudicatory hearings are triggered only by substantive safety or environmental issues that raise a supported dispute with the application on a matter material to the NRC's decision on the challenged action.

B. Pilgrim Watch's Petition

In its Petition, Pilgrim Watch proffers two contentions challenging Holtec's application. In Contention I, Pilgrim Watch challenges Holtec's demonstration of financial qualification.⁷⁰ In Contention II, Pilgrim Watch raises environmental claims. Pilgrim Watch argues that the license transfer action requires a National Environmental Policy Act (NEPA) analysis and that the application therefore needed to include an environmental report. It also argues that the categorical exclusion in 10 C.F.R. § 51.22(c)(21) does not apply to this proceeding.⁷¹

As an initial matter, in its petition Pilgrim Watch states that it adopts and incorporates by reference the Commonwealth of Massachusetts's (Commonwealth's) "[c]ontentions in this proceeding together with all of the Attorney General's supporting bases and evidence."⁷² But because we find — as discussed below — that Pilgrim Watch has not submitted at least one admissible contention of its own, we reject its effort to adopt the Commonwealth's contentions.

⁶⁹ See, e.g., *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999) (describing reasons why the NRC tightened its contention admissibility standards in 1989).

⁷⁰ See PW Petition at 14-82.

⁷¹ *Id.* at 4, 89-90.

⁷² See *id.* at 130-31; see *supra* note 5.

Our regulation on contention adoption, 10 C.F.R. § 2.309(f)(3), does not specifically address whether a petitioner who has not independently gained party status in a proceeding may adopt another party's contention. We have dealt with the issue of contention adoption in the past, but we have not directly dealt with contention adoption by a party who has not met the requirements for intervention. However, we discussed this scenario in *Consolidated Edison Co. of New York* (Indian Point Units 1 and 2).⁷³ In that case the Commission allowed Petitioners who had admissible contentions to adopt each other's contentions.⁷⁴ While we accepted contention adoption in that circumstance, we cautioned that we "would not accept incorporation by reference of another petitioner's issues . . . where the petitioner has not independently established compliance with our requirements for admission as a party . . . by submitting at least one admissible issue of its own."⁷⁵ And in 2008, after § 2.309(f)(3) was added to our regulations, a Licensing Board addressed this precise question, concluding that, "based on the clear statement of the Commission's view [in *Indian Point*], . . . in order for a petitioner to adopt the contention of another petitioner, it must first demonstrate that it has standing and submit its own admissible contention."⁷⁶ We therefore hold that a petitioner must be admitted to a proceeding as a party, by demonstrating standing and submitting at least one admissible contention, before it may be permitted to adopt another party's contention, arguments, or evidentiary support. Otherwise, petitioners with little or no knowledge of the issues raised in adopted contentions might be admitted as parties to litigate those contentions in our proceedings. This would essentially defeat the purpose of our contention admissibility standards, which are meant to ensure that parties to a proceeding have demonstrated the necessary factual or legal knowledge to participate meaningfully.

1. Pilgrim Watch's Contention I

In Contention I, Pilgrim Watch argues that the application does not provide adequate financial assurance. Pilgrim Watch claims that the application does not show that either Holtec Pilgrim or HDI is "financially responsible" or that either has access to adequate funds for decommissioning.⁷⁷ Pilgrim Watch also claims that the application does not show that Holtec Pilgrim and HDI have

⁷³ CLI-01-19, 54 NRC 109 (2001).

⁷⁴ *Id.* at 132-33. Because this case preceded the addition of § 2.309(f)(3) to our regulations, it speaks of incorporation by reference rather than adoption.

⁷⁵ *Id.*

⁷⁶ See *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), LBP-08-13, 68 NRC 43, 65-66 (2008).

⁷⁷ PW Petition at 14.

or will have the financial resources to pay for environmental impacts that will place the public health and safety and the environment at risk. Pilgrim Watch is concerned that the only asset that Holtec Pilgrim and HDI rely on in the application is the decommissioning trust fund.⁷⁸

a. Accuracy of Current Cost Estimates

Contention I involves consideration of Holtec's site-specific decommissioning cost estimate. The following observations guide our assessment of the issues Pilgrim Watch has raised. Although the NRC has provided guidance on this topic, we have not established specific regulatory requirements governing the contents and the degree of supporting detail that must be provided. In the past, license transfer proceedings have typically involved operating reactors, and license transfer applicants in those cases generally showed reasonable assurance of decommissioning funding by using the NRC's generic, formula-derived estimate.⁷⁹ Within two years following permanent cessation of operations, however, a licensee must submit a site-specific decommissioning cost estimate to the NRC. Thus, Holtec prepared and submitted to the NRC a site-specific decommissioning cost estimate. Contention I raises issues concerning the validity of this assessment.

At this early stage in the decommissioning process, cost estimates are necessarily uncertain. This observation is as true for a site-specific decommissioning cost estimate submitted by a current licensee as it is for one submitted by a license transfer applicant. We see no reason to require that a transfer applicant's cost estimate be more detailed, more certain, or more conservative than the site-specific estimate submitted by a current licensee.

Moreover, the financial qualification review for license transfer ensures that a license is not transferred to an entity that lacks the financial capability to meet the expenses of decommissioning and spent fuel management. The cash flow analysis is a snapshot in time based on particular cost estimates and assumptions, the amount accumulated in the trust fund and projected net interest gains, and any other applicable financial assurance. Actual costs and gains may fluctuate above and below original predictions (e.g., actual real rates of return may prove higher or lower than the 2% real rate of return that the NRC allows the applicant to credit). And if a transfer is approved, the NRC will, as discussed above, continuously oversee the adequacy of the decommissioning and spent fuel management funding until the license is terminated.

⁷⁸ See *id.*

⁷⁹ See 10 C.F.R. § 50.75(b), (c).

In our license transfer adjudications, we deem financial assurance to be acceptable if it is based on plausible assumptions and forecasts, even if “the possibility is not insignificant that things will turn out less favorably than expected.”⁸⁰ We have likewise held that the “mere casting of doubt on some aspects of proposed funding plans is not by itself sufficient to defeat a finding of reasonable assurance.”⁸¹ Further, we have recognized that the potential safety impacts, if any, from a shortfall in financial funding would not be “so direct or immediate as the safety impacts of significant technical deficiencies.”⁸² Therefore, we recognize that the demonstration of reasonable assurance of financial qualification is flexible.⁸³ Accordingly, we will admit for hearing here only those contentions based upon adequately supported assertions that a transfer applicant’s financial assumptions and forecasts are implausible or unrealistic in a way that is material to our assessment of reasonable assurance.

In the application, Holtec stated that in preparing the cost estimates, it (1) considered the input of experienced decommissioning, demolition, and waste management specialty subcontractors, and of subject-matter experts; (2) reviewed Entergy’s site-specific decommissioning cost estimate; (3) reviewed decommissioning cost data from plants in the United States that have started or completed decommissioning; (4) obtained pricing information from waste disposal facilities; and (5) reviewed plant data and historical information obtained from Entergy, including records of spills and unusual occurrences involving contamination that are maintained pursuant to 10 C.F.R. § 50.75(g).⁸⁴

In support of the decommissioning and site restoration cost estimates, Holtec provided line-item cost estimates for specified categories of activities for decommissioning and for site restoration.⁸⁵ It included, for example, the estimated volumes and weights of low-level radioactive waste (broken down by waste class) and of Greater-than-Class-C Waste and estimated labor costs (broken down into management, professional labor, and craft labor categories). For the reasons discussed below, we find that Pilgrim Watch has not raised a supported,

⁸⁰ See *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 222 (1999).

⁸¹ *Id.*

⁸² *Id.* at 221.

⁸³ See *id.* at 221-22; see also *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 9 (1978). To determine financial qualification the NRC will “require the minimum amount of information necessary for that purpose.” See 10 C.F.R. Part 50, Appendix C (regarding guidance for the financial data and related information required to establish the financial qualification for construction permits and combined licenses).

⁸⁴ See Application, Attach. D, “Schedule & Financial Information for Decommissioning,” at 2 (unnumbered); HDI PSDAR, Encl. 1, Site-Specific Decommissioning Cost Estimate, at 7, 36-37, 48 (DCE).

⁸⁵ See, e.g., DCE at 8, 28-34, 54.

admissible challenge warranting litigation on the plausibility of the current cost estimates.

b. Sufficiency of Contingency Allowance

Pilgrim Watch claims that Holtec's decommissioning cost estimate contains an inadequate amount of contingency funding.⁸⁶ It notes that an extra 17% has been added to the decommissioning, site restoration, and spent fuel management cost estimates to account for contingencies, but Pilgrim Watch asserts that this additional amount is expected to be "fully consumed" and does not adequately account for inflation or increases in prices of goods and services over the course of the project.⁸⁷ However, licensees' site-specific decommissioning cost estimates usually include a contingency allowance to cover the estimated amount of additional expenses. NRC guidance provides for licensees to update their decommissioning cost estimate yearly for inflation and as appropriate for other significant increases in project costs.⁸⁸ That the additional amount added to the decommissioning, site restoration, and spent fuel management cost estimates is expected to be fully expended in the course of the planned activities does not raise a genuine material dispute with Holtec's demonstration of financial qualification. The NRC does not have a minimum contingency requirement for the site-specific estimate, and Holtec's 17% contingency allowance falls within the range of contingency allowances that have been commonly added to site-specific decommissioning cost estimates.⁸⁹

⁸⁶ The contingency allowance in Entergy's site-specific decommissioning cost estimate was derived from an examination of the major activities (*e.g.*, decontamination, segmentation, equipment handling, packaging, transport, and waste disposal) that have been known historically to require a contingency allocation. These activities were each assigned a respective contingency value based on the difficulty of the decommissioning task and actual experience with decommissioning projects (*e.g.*, 75% for reactor segmentation; 50% for decontamination; 25% for low-level waste disposal; 15% for heavy equipment and tooling). *See* Entergy Site-Specific Decommissioning Cost Estimate, § 3.3.1 (Contingency), at 4, attached to Entergy PSDAR (Entergy DCE). Twenty-six different decommissioning tasks in Entergy's DCE were assigned a contingency value. The contingency values were applied on a line-item basis. The estimated costs for each of the twenty-six separate components of work were multiplied by their assigned contingency value and the results were added to the decommissioning cost. These additional amounts added to the decommissioning cost estimate were summed together. For Entergy, the total amount for contingency represented 16.92% of the total estimated cost for license termination, spent fuel management, and site restoration.

⁸⁷ *See* PW Petition at 22.

⁸⁸ *See* Assuring the Availability of Funds for Decommissioning Nuclear Reactors, Regulatory Guide 1.159, rev. 2 (Oct. 2011), at 12 (ML112160012) (Regulatory Guide 1.159).

⁸⁹ *See, e.g.*, Crystal River Nuclear Generating Station Unit 3 Site Specific Decommissioning Cost Estimate (May 2018), app. C, tbl. C (last page) (ML18178A181) (18.2% contingency allowance);
(Continued)

Pilgrim Watch claims that Holtec's contingency factor does not satisfy 10 C.F.R. § 72.30(b)(2)(ii), which requires a decommissioning cost estimate to contain an "adequate contingency factor." But that regulation refers to a contingency factor to be applied to the decommissioning cost estimate for an ISFSI, not to a power reactor. For ISFSI decommissioning, Holtec included a contingency allowance of 25%, which is consistent with NRC guidance on the ISFSI decommissioning cost estimate.⁹⁰ Pilgrim Watch has not identified a genuine material dispute with the application over the 17% contingency factor that Holtec applied to the decommissioning, site restoration, and spent fuel management cost estimates.

c. Rate of Return Used in Cost Estimate

While Pilgrim Watch accepts that the NRC by regulation allows licensees to assume an annual real rate of return on the trust fund of 2% over inflation, Pilgrim Watch asserts that decommissioning costs will escalate at a higher rate than inflation. It therefore claims that the additional cost increases over inflation in the decommissioning costs "will wipe-out" the estimated \$3 million dollars that Holtec's cash flow analysis predicts will remain in the trust fund at final license termination in 2063.⁹¹ We disagree for several reasons. First, we find unsupported Pilgrim Watch's argument that decommissioning costs will increase at an annual rate higher than inflation.⁹² Pilgrim Watch does not provide either an affidavit from an expert or another source supporting its predictions. Indeed, Pilgrim Watch's own cited reference, a report describing the total estimated decommissioning costs of dozens of plants, stated that total costs "hovered around" the same level for four years between 2014 to 2017.⁹³ And the cited report de-

Fort Calhoun Station Site-Specific Decommissioning Cost Estimate (attached to PSDAR) (Feb. 2017), app. C, tbl. C (last page) (ML17089A59) (16.33% contingency allowance); Three Mile Island Unit 1 Site-Specific Decommissioning Cost Estimate (Apr. 2019) § 6.1, at 19 (ML19095A010) (12.9% contingency allowance); Decommissioning Cost Analysis for the Monticello Nuclear Generating Plant (Oct. 2014), app. D, tbl. D (last page) (ML16005A105) (16.94% contingency allowance).

⁹⁰ See "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," NUREG-1757, vol. 3, rev. 1 (Feb. 2012), at 4-11; DCE at 25-26.

⁹¹ See PW Petition at 24.

⁹² See *id.* at 24-25.

⁹³ See "2018 Nuclear Decommissioning Funding Study," Callan Investments Institute, at 3, 9 (2018 Callan Report); PW Petition at 24. Pilgrim Watch also references a 2015 Callan report stating that total decommissioning cost estimates rose approximately 60% between 2008 and 2014. But the 2015 report also noted that part of the increase in costs was due to more licensees using a site-specific decommissioning cost estimate, which, unlike cost estimates derived from the NRC's minimum formula in 10 C.F.R. § 50.75(c), also included site restoration and spent fuel management

(Continued)

scribed total decommissioning costs as having *decreased* in 2017.⁹⁴ Regardless of increases in particular decommissioning-related costs that may have occurred *prior to 2014*, Pilgrim Watch does not support its claim that decommissioning costs will escalate annually at a rate higher than inflation going forward. With significant increases in the numbers of plants that are entering decommissioning, it is difficult to predict how gained experience and economies of scale will affect decommissioning costs, and Pilgrim Watch's cited references do not support its claim that the "only rational and factually supportable assumption would be that decommissioning costs will increase at an annual rate that is at least about 4% higher than the rate of annual inflation."⁹⁵

Second, even were Pilgrim Watch's predictions to come true, the NRC will be able to monitor increased withdrawals from the trust fund and increased projected costs as reported in the annual decommissioning financial assurance status reports.⁹⁶ As described above, if the status report predicts a shortfall in funding, the licensee must provide additional financial assurance.⁹⁷ Consistent with NRC guidance, Holtec should adjust its decommissioning cost estimate at least once a year to ensure that the estimate reflects cost changes from inflation or other cost factors.⁹⁸ Rather than speculate about highly uncertain circumstances and events, it is appropriate to rely on close annual monitoring of expenditures, projected remaining expenses, and remaining funding. Further, Holtec must provide its license termination plan at least two years prior to its expected date for partial site release (approximately 2026) with an updated decommissioning cost estimate, which provides another significant occasion to assess the adequacy of decommissioning funding.⁹⁹ At that point, many decommissioning activities will already have taken place; actual costs of completed activities will be known; a

costs, which the report noted can "run into the hundreds of millions of dollars." See "2015 Nuclear Decommissioning Funding Study, Callan Investment Institute," at 3. And Pilgrim Watch refers to a 2011 NRC list of questions and answers, in which one answer addressed increases over a twenty-year period in cost escalation factors, including labor, energy, and low-level waste disposal, used to escalate decommissioning costs based on the 10 C.F.R. § 50.75(c) generic minimum formula. See PW Petition at 23 (citing NRC Questions and Answers, Encl. 5, SECY-11-0133 (ML111950031)). But Pilgrim Watch does not acknowledge that Holtec's low-level waste disposal estimates are based on pricing that was "confirmed" by selected waste disposal facilities. See DCE at 26.

⁹⁴ See 2018 Callan Report at 9.

⁹⁵ See PW Petition at 24.

⁹⁶ See 10 C.F.R. § 50.82(a)(8)(v).

⁹⁷ See *id.* § 50.82(a)(8)(vi).

⁹⁸ See Regulatory Guide 1.159 at 12 (addressing "Inflation" and "Frequency of Adjustment"); see also 10 C.F.R. § 50.82(a)(8)(v)(B) (financial assurance status report must include an "estimate of the costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year, and the decommissioning criteria upon which the estimate is based").

⁹⁹ See Applicants Answer to PW at 19 (partial site release expected by 2026).

site characterization will have been completed; and an updated decommissioning cost estimate based on refined site condition information will be provided.¹⁰⁰

Pilgrim Watch provides no support for its additional claim that spent fuel management costs could potentially increase (from 2019 to 2063) at an annual rate of 4% over inflation.¹⁰¹ Notably, spent fuel management costs from the time of partial license termination (approximately 2027-28) until 2063 would only entail those relating to maintenance and oversight of the ISFSI. Holtec will nonetheless have to annually inform the NRC of the status of its spent fuel management funding, and if its funding does not cover the projected costs, it would need to provide a funding plan to cover the costs.¹⁰² To the extent that spent fuel management costs may prove to be higher than currently estimated, we expect that Holtec would seek correspondingly higher amounts in its litigation asserting breach of the Standard Contract. Pilgrim Watch does not claim that Holtec will not be able to obtain reimbursement for its spent fuel management costs. Pilgrim Watch effectively claims that, in the event of an actual or projected funding shortfall, Holtec will refuse to make additional financial commitments and, in so doing, would choose to violate NRC regulations. We decline to make this assumption.

d. Claims Relating to Future Actions by DOE

Pilgrim Watch raises cost-related claims relating to actions that DOE may take. Pilgrim Watch states that the Standard Contract with DOE currently requires spent fuel to be packaged into DOE-approved transportation casks. In addition, Pilgrim Watch challenges Holtec's assumptions regarding when DOE will remove the spent fuel from the Pilgrim site.¹⁰³

Pilgrim Watch argues that if DOE were to mandate fuel repackaging, this could cause Holtec to incur significant unaccounted-for expenses.¹⁰⁴ We recognize that no certainty exists at this time regarding how DOE will ultimately perform regarding the Pilgrim spent fuel or which party would bear responsibility for the costs of transferring fuel to DOE-supplied containers. But DOE

¹⁰⁰ The NRC requires a licensee that specifies a delayed completion of decommissioning by including a storage or surveillance period to provide a means of adjusting cost estimates over the storage or surveillance period. *See* 10 C.F.R. § 50.82(a)(8)(iv). We do not have a similar requirement for licensees using the DECON approach to decommissioning, but such licensees would be expected within a short time-frame to submit an updated cost estimate with a license termination plan.

¹⁰¹ *See* PW Petition at 25.

¹⁰² 10 C.F.R. § 50.82(a)(8)(vii) (status report); *see also* 10 C.F.R. § 50.55(bb) (spent fuel management funding plan).

¹⁰³ *See* PW Petition at 26-31, 59.

¹⁰⁴ *See id.* at 21, 30, 61-63.

was found liable for breaching the Standard Contract and liable for licensees' related spent fuel management expenses; we will not presume, as a reason to deny a license transfer, that DOE will likely succeed in requiring licensees to bear additional fuel packaging-related expenses. Nor would this question be one that could reasonably be resolved in an NRC adjudicatory hearing. As for other potentially major — but uncertain — events, any significant increase in costs would warrant an updating of the decommissioning cost estimate and would be reflected in a licensee's annual status report, which must provide the projected remaining costs of decommissioning.

Pilgrim Watch claims that Holtec has not justified its assumption that DOE will begin removing spent fuel from the Pilgrim site in 2030 and will complete removal of the fuel by 2062.¹⁰⁵ Pilgrim Watch further claims that Holtec has not explained how it would address the possibility of indefinite storage.¹⁰⁶ Pilgrim Watch argues that the Continued Storage Rule discussed onsite storage for 100 years; using the annual spent fuel management costs estimated in Holtec's PSDAR, the additional fifty-seven years of storage would cost more than \$380 million.¹⁰⁷ Pilgrim Watch further argues that Holtec has not accounted for costs of replacing aging casks and replacing storage pads "every 100 years."¹⁰⁸

We do not require that the site-specific decommissioning cost estimate include estimated costs for potential but highly uncertain contingencies. That indefinite storage is "possible" does not make it likely, and we find it reasonable to expect that a repository will become available before 2063. While the NRC's generic environmental impact statement (GEIS) for the Continued Storage Rule acknowledges the possibility that fuel could remain onsite indefinitely, the GEIS also supports a conclusion that a repository will be available by 2063. Indeed, the GEIS notes that safe storage of spent fuel in a geologic repository is technically feasible using currently available technology, with no major breakthrough in science or technology needed, and it found "25 to 35 years . . . a reasonable period for repository development."¹⁰⁹ As the GEIS describes, DOE's stated goal is to have a repository sited by 2026, the site characterized and the repository designed and licensed by 2042, and repository operations started by 2048.¹¹⁰ Holtec's final license termination timeframe is in our view plausible and therefore acceptable for financial assurance predictions.

¹⁰⁵ See *id.* at 26-31, 59.

¹⁰⁶ See *id.* at 30.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* at 30-31.

¹⁰⁹ See Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel (Final Report), NUREG-2157, vol. 1 (Sept. 2014), app. B, at B-2, B-8 to B-9 (ML14196A105).

¹¹⁰ *Id.* at B-8.

If new information regarding repository development were to render the 2062 date unrealistic, the NRC would address any potential need for an adjustment to spent fuel management funding. In issuing the Continued Storage Rule, the NRC stated that the agency would “continue to monitor changes in national policy and developments in spent fuel storage and disposal technology.”¹¹¹ And the NRC noted that if future developments warrant, licensees could be required to “amend their licenses, which would be accompanied by site-specific safety and environmental reviews.”¹¹² We decline at this time to require licensees or transfer applicants to predict how the cost of spent fuel management will be borne in the future in the event indefinite storage is needed.

As to Holtec’s assumption of 2030 as the starting date for DOE beginning the transfer of fuel from the Pilgrim site, Holtec states that, consistent with Entergy’s spent fuel disposal plans for Pilgrim, the spent fuel would not necessarily go at that time to a final repository.¹¹³ Pilgrim Watch references a Congressional Research Service report on civilian nuclear waste disposal that concludes that “longer on-site storage is almost a certainty,” but the same report indicates that there have been corporate and legislative initiatives aimed at providing interim storage options.¹¹⁴ And two separate applications for interim storage facilities are currently before the NRC. While those applications are still under review, and it is uncertain whether statutory changes will be made to allow DOE to take title to and transport the spent fuel to an interim disposal site, we accept as plausible that by 2030 a storage facility will be available to receive the Pilgrim waste.

Finally, because disposal of spent fuel and high-level waste is a federal responsibility, additional delays in DOE taking the Pilgrim spent fuel beyond 2030 would mean that Holtec could recover additional spent fuel management costs from DOE. Holtec already intends to seek reimbursements from DOE based on its estimated \$500 million in spent fuel management expenses. While Pilgrim Watch contests the lack of a license condition or other regulatory commitment requiring Holtec to use funds obtained through litigation or settlement for expenditures that exceed the currently estimated costs, it does not argue that Holtec is unlikely to receive substantial reimbursements for ongoing spent fuel management costs at Pilgrim — recoveries that could be used to defray additional costs if fuel removal does not begin in 2030.¹¹⁵ Yearly spent fuel management costs

¹¹¹ See Continued Storage of Spent Nuclear Fuel, Final Rule, 79 Fed. Reg. 56,238, 56,246 (Sept. 19, 2014).

¹¹² *Id.*

¹¹³ See DCE at 43.

¹¹⁴ See PW Petition at 30 n.17; Congressional Research Service, “Civilian Nuclear Waste Disposal” (Sept. 6, 2018), at 4-5; 35-36.

¹¹⁵ PW Petition at 18, 26.

are relatively predictable on a year-to-year basis, and the NRC would require an updated spent fuel management plan to address any major change resulting in a projected shortfall in spent fuel management funding.

e. Low Level Radioactive Waste Disposal Costs

Pilgrim Watch also raises the possibility that Holtec may not receive approval from the Texas Compact Commission to dispose of the Class B and C waste at Waste Control Specialists resulting in higher costs.¹¹⁶ Holtec states that most of its waste meets the Class A definition but that for its Class B and C waste it will file an import petition with the Texas Compact Commission to obtain approval to dispose of out-of-compact waste. Holtec also states that it currently holds a contract with Waste Control Specialists permitting the disposal of radioactive waste from any decommissioning project in the United States.¹¹⁷ But Pilgrim Watch does not indicate that licensees have experienced difficulty in gaining approval from the Texas Compact Commission to import Class B and C waste for disposal at Waste Control Specialists. Based on the information before us, we have no basis to view as implausible Holtec's assumption that Class B and C waste will be disposed of at Waste Control Specialists.¹¹⁸

f. Delays in Work Schedule

Among its proposed scenarios of circumstances that could lead to increased costs, Pilgrim Watch claimed in its petition that delays in the decommissioning schedule may lead to a funding shortfall in the decommissioning trust.¹¹⁹ Common types of delays due to weather, equipment, and labor generally are anticipated and covered by the contingency allowance that has been, as a general practice, added to the cost estimates. And, as we observe above, Holtec's total contingency allowance amount is consistent with that of other licensees and would be expected to cover common causes of delay. If a delay were to occur *and* it caused an overall schedule delay that significantly increased costs, we would expect such an increase to be reflected in the annual financial assurance status report on decommissioning funding. Therefore, Pilgrim Watch does not raise a genuine material dispute with the application over the potential costs of delays in decommissioning.

¹¹⁶ See *id.* at 59.

¹¹⁷ See, e.g., DCE at 27.

¹¹⁸ See Entergy DCE, § 1.3.2.

¹¹⁹ PW Petition at 21, 63, 127.

g. Potential Denial of Exemption Request

Pilgrim Watch also argued that the application fails to consider what would happen if the exemption were not granted.¹²⁰ But the Applicants point out that if the exemption request were not granted, the Application would either be revised, withdrawn, or rejected.¹²¹ We agree that this argument does not raise a genuine dispute with the application.

h. Scenarios Requiring Additional Financial Assurance

Pilgrim Watch likewise identifies scenarios that, if they occurred, would need to be addressed in the decommissioning or spent fuel management funding status reports and, as necessary, would require that Holtec provide additional financial assurance. These other scenarios include its assertions that Holtec may need to replace failed casks or pads;¹²² spent fuel canisters may corrode and leak and need repair;¹²³ and terrorist attacks or acts of malice against the spent fuel pool or the ISFSI could cause dry cask rupture.¹²⁴ Pilgrim Watch does not link these scenarios with a supported challenge to a specific part of the application and therefore does not articulate a genuine dispute with the application. Moreover, as we have explained above, our regulatory structure assures that funding shortfalls will be identified and addressed on a regular basis. Pilgrim Watch does not show how these scenarios would go unaddressed, and thus its claims lack factual support.

i. Existing Contamination at the Site and Lack of Site Characterization

Pilgrim Watch next argues that Holtec's cost estimates are based on an incorrect assumption that the Pilgrim site is essentially "clean."¹²⁵ But Pilgrim Watch does not identify any such claim in Holtec's application or cost estimate, nor do we find one.¹²⁶ We note that Holtec based its decommissioning cost

¹²⁰ See *id.* at 64-65.

¹²¹ Applicants Answer to PW at 58.

¹²² See PW Petition at 27, 30.

¹²³ See *id.* at 31, 77. Pilgrim Watch raises, without support, a concern about salt-induced stress corrosion cracking. See *id.* at 77. It also raises a concern about the use of high burnup fuel. *Id.* But Pilgrim Watch does not provide a supported argument challenging the application linked to these concerns.

¹²⁴ See *id.* at 71-76.

¹²⁵ See *id.* at 31.

¹²⁶ In its reply, Pilgrim Watch states that it "does not dispute" that the license transfer application and the PSDAR do not "specifically describe the Pilgrim site as 'clean.'" See Pilgrim Watch Reply

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estimate on its review of the historical contamination event records maintained under 10 C.F.R. § 50.75(g).¹²⁷ Holtec concluded that these events were well documented and the cleanup efforts following the specific recorded events “were effective such that no significant contamination remained following cleanup operations.”¹²⁸ But that is not an assertion that no further cleanup will be necessary during the decommissioning process at the particular areas where a recorded incident of contamination took place. Nor is it an assertion that other areas at the facility do not have contamination. In its decommissioning cost estimate, Holtec states that it plans bulk removal of large contaminated components and that its estimate includes a conservative estimate of contaminated soil that will need to be removed, packaged, shipped, and disposed of as low level or exempt waste.¹²⁹ In addition, regarding non-radiological site restoration, Holtec states it will need to remove asbestos-containing material and hazardous and universal waste.¹³⁰ Pilgrim Watch does not address or otherwise challenge Holtec’s \$40 million estimate for non-radiological site restoration.

Pilgrim Watch also argues that no site characterization has been performed to

to Applicants’ Answer Opposing Pilgrim Watch Petition for Leave to Intervene and Hearing Request (Apr. 1, 2019), at 15 (PW Reply to Applicants). Pilgrim Watch goes on to claim that the application, cost estimate, and PSDAR do not justify an assumption that there is “no significant contamination.” *See id.* (citing DCE at 22). To the extent that Pilgrim Watch is introducing new claims in its reply brief, Commission practice generally does not allow entirely new arguments to be presented in a reply. *See, e.g., Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-25, 60 NRC 223, 225 (2004). Regardless, Pilgrim Watch does not raise a litigable issue here. Pilgrim Watch claims that while it will “assume that, to some unknown extent, Holtec may have reviewed some 50.75(g) records and received some data and historical information from Entergy . . . even Holtec recognized that what it had done was not enough to know what contamination is actually on site” because it planned to conduct site characterization activities to identify, categorize, and quantify radiological, regulated, and hazardous wastes. *See* PW Reply to Applicants at 15-16. In essence, Pilgrim Watch merely reiterates its claim that because the cost estimate was not based on a full site characterization, Holtec cannot now know the true decommissioning costs. *See id.* at 16. But at this stage we do not require the cost estimate to be confirmed by a site characterization.

¹²⁷ Pilgrim Watch argues that Holtec “admits” that site characterization is necessary to supplement the historic plant records on which Holtec bases its cleanup estimates. PW Petition at 32-33. The application does not specifically describe the contents of historical plant records, and therefore Pilgrim Watch may not know specific historical data to the extent that such data are not publicly available. But the NRC has not required licensees to include summaries of this historical data in their site-specific cost estimates. Moreover, to the extent that Pilgrim Watch found it needed additional information to review the application, the Hearing Opportunity Notice provided steps potential intervenors should take to access material, non-public information. Hearing Opportunity Notice, 84 Fed. Reg. at 819. Pilgrim Watch did not request access to non-public information in this proceeding.

¹²⁸ DCE at 23.

¹²⁹ *Id.*

¹³⁰ *See id.* at 16, 23; HDI PSDAR at 11; *see also* DCE at 49-50 (listing site restoration costs).

identify, categorize, and quantify radiological and non-radiological contamination.¹³¹ To the extent that Pilgrim Watch disputes Holtec's cost estimate because it is not based on a completed site characterization, Pilgrim Watch does not raise an admissible, genuine material dispute with the application. We do not require that a site characterization be performed at this stage, and we therefore do not require that the current site-specific decommissioning cost estimate be based on or confirmed by a site characterization.

Our regulations require a site characterization when a licensee submits its license termination plan. The license termination plan must be submitted at least two years before the date of license termination. Among other items, it must include a site characterization and an updated site-specific decommissioning cost estimate for the remaining decommissioning activities.¹³² Holtec states that it plans to submit its license termination plan about two years prior to the year in which Holtec expects that the site will be released (except for the ISFSI portion). This license termination plan review, which will be subject to a hearing opportunity, will therefore encompass the site characterization and the updated decommissioning cost estimate.

To the extent that Pilgrim Watch challenges the adequacy or accuracy of Holtec's cost estimates because a site characterization has not yet been completed, Pilgrim Watch impermissibly challenges our regulations.¹³³ Because we do not require a site characterization at this point, we likewise do not require Holtec's current cost estimates to be based on verified quantities, types, and locations of contamination.¹³⁴

Holtec has indicated that performing the site characterization, an iterative process, is one of its first tasks upon assuming the ownership and control of the site. Accordingly, we expect that Holtec's decommissioning cost estimate will be updated as warranted based on the results of the site characterization that Holtec is performing this year.

As discussed above, the licensee must provide every year in the financial assurance status report an estimate of the cost to complete decommissioning and

¹³¹ See PW Petition at 31-54.

¹³² See 10 C.F.R. § 50.82(a)(9)(ii)(A), (F).

¹³³ See *id.* § 2.335(a).

¹³⁴ NRC decommissioning cost estimates are required at different stages: (1) initial cost estimates at the operating license stage may be based on the NRC's generic minimum formula found in 10 C.F.R. § 50.75(c) and must be adjusted annually; (2) a preliminary decommissioning cost estimate must be provided at or about five years prior to the projected end of operations, pursuant to § 50.75(f)(3); (3) a site-specific decommissioning cost estimate must be provided within two years following permanent cessation of operations, pursuant to § 50.82(a)(4)(i) (provided in the PSDAR) and § 50.82(a)(8)(iii); and (4) an updated decommissioning cost estimate of remaining costs must be provided in a license termination plan, pursuant to § 50.82(a)(9)(ii)(F). There are different expectations of the estimates to be provided under each of these stages.

the decommissioning criteria on which the estimate is based.¹³⁵ NRC guidance on decommissioning cost estimates specifically addresses the need to adjust the decommissioning cost estimate to account for “updated information about the facility conditions, such as larger levels of contamination than anticipated.”¹³⁶ The NRC also expects that the cost estimate will be adjusted annually to account for inflation. The cost estimate will also be updated to account for technological or plant status changes, including “recent developments in decontamination, waste processing and disposal, or cutting equipment and other technology; . . . updated waste disposal conditions; updated residual radioactivity limits; and experience gained from the actual decommissioning of similar facilities.”¹³⁷

In sum, while the NRC must be satisfied that an applicant has demonstrated financial qualification to obtain an NRC license, annual monitoring of the decommissioning and spent fuel management funding ensures that projected funding will continue to remain sufficient to cover decommissioning and spent fuel management costs. Therefore, Pilgrim Watch’s argument that the cost estimates are deficient because the actual amounts of contamination will not be known until a site characterization is completed does not raise a genuine material dispute with the application.

j. Claims of Existing Site Contamination

To the extent that Pilgrim Watch suggests that there is current contamination that will cause decommissioning activities to have environmental impacts exceeding those described in relevant environmental impact statements, Pilgrim Watch does not support its arguments and these claims fall beyond the scope of this license transfer proceeding. Similarly, to the extent that Pilgrim Watch claims that relevant environmental impact statements contain inaccurate information on site conditions, Pilgrim Watch does not support its claims and such claims likewise fall beyond the scope of this proceeding.¹³⁸

Pilgrim Watch claims that the “cost of decontaminating and restoring the Pilgrim site will be more, probably far more than Holtec has estimated.”¹³⁹ It claims that “over the years, Pilgrim has buried contaminated material on site and has had many leaks and releases.”¹⁴⁰ In support, it refers to multiple asserted

¹³⁵ See 10 C.F.R. § 50.82(a)(8)(v), (vi).

¹³⁶ Regulatory Guide 1.159 at 12.

¹³⁷ *Id.*

¹³⁸ See PW Petition at 33-34.

¹³⁹ *Id.* at 35.

¹⁴⁰ *Id.* at 36. Pilgrim Watch states that an environmental monitoring report issued in 1983 indicated excessively high readings of Cs-137 at two offsite locations. See PW Petition at 39-40. But the

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events, results of surveys, and NRC inspection results.¹⁴¹ But it does not link these cited items to the license transfer application. It does not explain how the historic reports or events that it references have significance today; what that significance is (e.g., a particular level of residual radioactivity likely to exist today at levels that exceed standards); or how the information challenges a specific aspect of the application (e.g., estimated remediation costs that call into question Holtec's cost estimates). Pilgrim Watch does not articulate a genuine dispute with Holtec's site-specific decommissioning cost estimate or the site restoration cost estimate.¹⁴²

Pilgrim Watch claims that there has not been an adequate program at Pilgrim for inspecting buried pipes and tanks, and it suggests that there is contamination around the buried pipes and tanks that may not be accounted for in the decommissioning cost estimate. This claim is unsupported.¹⁴³

In addition, Pilgrim Watch notes, and Holtec does not dispute, that groundwater monitoring at Pilgrim has shown elevated levels of radionuclides, including tritium.¹⁴⁴ But again, Pilgrim Watch provides no expert opinion or other factual support indicating that there is significant remaining contamination which will require remediation at a cost that may make a material difference to Holtec's financial qualification. One of Pilgrim Watch's cited references is an updated

report also concluded that it was "highly unlikely" that the Pilgrim facility was the cause of the Cs-137 readings, which were over 1,000,000 times what would be expected — at a residence located over ten miles away from the Pilgrim plant. Ultimately, the report found that the absence of Cs-134 and the unusual reading indicated that atmospheric fallout from weapons testing may have been the primary cause of elevated cesium levels. See PW Petition, Ex. 3, Pilgrim Nuclear Power Station, Environmental Radiation Monitoring Program, at 3-68, 3-69, 3-80.

¹⁴¹ See PW Petition at 36-54.

¹⁴² See *id.* at 36-44. For example, Pilgrim Watch references a 1988 article in the *Boston Globe*, which stated that a 5,000 cubic feet pile of dirt near Pilgrim contained Cs-134, Cs-137, and Co-60. But the article states that this pile of dirt near the Pilgrim parking lot did not have levels of radioactivity exceeding federal standards. See "Radioactivity Detected in Dirt Pile Near Pilgrim," by Larry Tye, *Boston Globe* (Jan. 21, 1988), at 29. Nothing in the article indicates that the pile of dirt posed any public health and safety or environmental concern, even in 1988.

¹⁴³ See PW Petition at 42-44. The adequacy of Entergy's aging management program for buried pipes and tanks was the subject of an evidentiary hearing at the time the Pilgrim operating license was renewed. The Board found in favor of the applicant; we declined review. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-08-22, 68 NRC 590, 593 (2008), *petition for review denied*, CLI-14-10, 71 NRC 449, 477 (2010).

¹⁴⁴ See PW Petition at 44-48. Pilgrim Watch's citations to the NRC Liquid Radioactive Release Lessons Learned Task Force Final Report do not raise a dispute with the Holtec application. See *id.* at 50-52, 103 (citing "NRC Liquid Radioactive Release Lessons Learned Task Force, Final Report" (2006) (ML062650312)). The report proposed improvements to radiological effluent and environmental monitoring, which led to expanded monitoring at nuclear power plant facilities including at Pilgrim. The recommendations and conclusions of the 2006 report do not suggest that current radiological effluent and environmental monitoring is unreliable.

report by the Commonwealth's Bureau of Environmental Health on tritium in groundwater at Pilgrim covering the months July-December 2018.¹⁴⁵ The report notes that out of twenty-three routinely sampled groundwater wells, in all wells but one (MW-219) tritium levels were below the EPA drinking water standard.¹⁴⁶ The report states that Entergy identified the source of tritium in MW-219 and installed a containment system and that levels of tritium in that well had stabilized at 1,000 pCi/L (well below the EPA drinking water standard of 20,000 pCi/L).¹⁴⁷ This report, on its face, does not support Pilgrim Watch's claims. And Pilgrim Watch does not address how this or other reports it references call into question the plausibility of Holtec's decommissioning cost estimate or otherwise raise a genuine material dispute with the application.

Pilgrim Watch also does not support its claim that there has been "hazardous waste dumping" at Pilgrim — that barrels of chemical waste were shipped from New Jersey and buried along Pilgrim's access road.¹⁴⁸ Indeed, Pilgrim Watch states that the Commonwealth did not investigate such claims of buried hazardous wastes because no evidence of buried wastes had been identified on which the Commonwealth could rely to pursue an investigation.¹⁴⁹

Further, Pilgrim Watch does not support its claim that the decommissioning cost estimate is inadequate because it fails to include the cost of an "adequate study to locate sites where potential masses of contaminated material susceptible to ignition might accumulate during decommissioning and the costs of forestalling a fire by removing or limiting heat, oxygen, and/or fuel."¹⁵⁰ Holtec notes that it has onsite property damage insurance and offsite nuclear liability insurance and that its plant deactivation activities will include removing combustibles and chemicals to permit fire protection system modifications.¹⁵¹ Pilgrim Watch also provides no expert opinion or factual support for its claims that Holtec failed to consider what it asserts are likely increased decommissioning costs due to climate change.¹⁵² And it does not adequately support its claim that

¹⁴⁵ See PW Petition at 44 n.38 (with link to state groundwater monitoring reports); "Update of the Tritium in Groundwater Investigation at Pilgrim Nuclear Power Station, Plymouth, MA" (July-December 2018) (Tritium Investigation Update).

¹⁴⁶ See Tritium Investigation Update at 2.

¹⁴⁷ See *id.* at 3.

¹⁴⁸ See PW Petition at 52-53 & nn.55-56. In support, Pilgrim Watch cites to a paper by the Jones River Watershed Association (PW Exhibit 4, ML19052A182, at 34) that merely states that "sources have reported" burials of hazardous waste and a 2013 Pilgrim Coalition newsletter, in which an individual stated that he had "tried to uncover chemical wastes . . . buried near the plant."

¹⁴⁹ See PW Petition at 53.

¹⁵⁰ *Id.* at 59.

¹⁵¹ See Applicants Answer to PW at 53.

¹⁵² See PW Petition at 60-61.

climate change impacts would likely cause a significant increase in decommissioning costs during the years 2019-27 or overall ISFSI decommissioning costs.

k. ISFSI Decommissioning

Pilgrim Watch also challenges the adequacy of Holtec's funding for the decommissioning of the ISFSI. Pilgrim Watch claims that Holtec's cash flow analysis does not take into account Holtec's estimated ISFSI decommissioning cost of \$4.2 million.¹⁵³ But while the cash flow analysis table does not display a separate column for ISFSI decommissioning, Holtec incorporated the estimated ISFSI decommissioning costs into its calculations by allocating portions of the overall ISFSI decommissioning costs into the separate categories of license termination, spent fuel management, and site restoration activities.¹⁵⁴ The decommissioning cost estimate further provides a table breaking down the ISFSI decommissioning costs into separate categories (e.g., removal costs, LLRW disposal costs, license termination, spent fuel, site restoration).¹⁵⁵ Pilgrim Watch does not address or challenge these stated costs.

Pilgrim Watch additionally claims that if decommissioning costs exceed inflation by 4% every year, then by its own calculations the ISFSI decommissioning cost will be \$24 million more than Holtec projects.¹⁵⁶ But Pilgrim Watch does not support this cost escalation claim regarding ISFSI decommissioning. In any event, Holtec must submit to the NRC an ISFSI decommissioning funding plan at least every three years with adjustments as necessary to account for changes in costs.¹⁵⁷ And because Holtec is relying on the decommissioning trust fund to pay for the ISFSI decommissioning costs, it will also need to provide this information in an annual financial status report on decommissioning.¹⁵⁸ That report is required to indicate the costs incurred the previous year, the remaining projected costs to complete the decommissioning, and the amount remaining in the trust fund. If there is a significant increase in projected ISFSI decommissioning costs, Holtec would need to provide additional financial assurance in the status report to cover those costs.

Pilgrim Watch also raises an unsupported challenge to Holtec's assumption that the ISFSI pads will not be contaminated.¹⁵⁹ But it asserts no factual basis or expert opinion challenging Holtec's assumption. Holtec states that its cost

¹⁵³ See *id.* at 80-81.

¹⁵⁴ See DCE at 28-30.

¹⁵⁵ See *id.* at 54.

¹⁵⁶ See PW Petition at 81.

¹⁵⁷ See 10 C.F.R. § 72.30(b)-(c).

¹⁵⁸ See *id.* § 50.82(a)(8)(vii).

¹⁵⁹ See PW Petition at 80 (citing DCE at 25).

estimate assumes that some of the inner steel liners and concrete overpacks will contain low levels of neutron-induced residual radioactivity that would necessitate remediation at the time of decommissioning.¹⁶⁰ But Pilgrim Watch provided no support for its assertion that contamination of underlying pads would be expected, particularly given that the canisters are stored in steel-lined concrete overpacks.¹⁶¹ Because Pilgrim Watch did not support its claim, we do not consider it further. Holtec's assumption will nonetheless need to be confirmed by verification surveys, as it indicates in its estimate.¹⁶² In sum, Pilgrim Watch has not provided a supported admissible dispute challenging the estimated ISFSI decommissioning.

l. Claims Relating to the PSDAR

Many of Pilgrim Watch's arguments suggest that this proceeding will approve HDI's PSDAR and thereby will authorize the decommissioning activities described in the report.¹⁶³ But the proposed license transfer does not permit Holtec Pilgrim and HDI to perform any decommissioning or spent fuel management activity not already authorized by the Pilgrim licenses. Similarly, neither Holtec Pilgrim nor HDI may undertake any decommissioning activities that result in any significant environmental impacts that have not been previously reviewed.¹⁶⁴

As we describe further below, the NRC does not approve a PSDAR, and most of the information in a PSDAR falls outside the scope of a license transfer proceeding. The Staff examined the PSDAR "only to determine whether Holtec Pilgrim and HDI are financially and technically qualified to hold the license for Pilgrim and the general license for the Pilgrim ISFSI . . . and to engage in the proposed maintenance and decommissioning activities."¹⁶⁵ In this sense, the site-specific decommissioning cost estimate and the associated decommissioning schedule must necessarily be reviewed as part of the determination concerning Holtec's financial qualification.¹⁶⁶ But a license transfer review does not itself involve any consideration of the potential environmental impacts of decommissioning activities.

¹⁶⁰ See Applicants Answer to PW at 60 (citing DCE at 25) (as an allowance nine of the sixty-one overpacks are assumed to contain residual radioactivity).

¹⁶¹ *Id.*

¹⁶² See DCE at 25.

¹⁶³ See, e.g., PW Petition at 18-19, 129.

¹⁶⁴ See 10 C.F.R. § 50.82(a)(6)(ii).

¹⁶⁵ SER at 3.

¹⁶⁶ See *id.* at 9 n.1 (noting that the NRC does not approve a PSDAR and that the Staff relied on the HDI PSDAR for the site-specific decommissioning cost estimate, and as a general reference for HDI's decommissioning plans).

As part of our oversight of decommissioning, the NRC requires a licensee to submit a PSDAR. Before or within two years following permanent cessation of operations, a licensee must submit a PSDAR to the NRC.¹⁶⁷ The PSDAR must contain (a) a description of the planned decommissioning activities and a schedule for their accomplishment; (b) the reasons for the licensee's conclusion that the specified decommissioning activities will be bounded by prior environmental impact statements; and (c) a site-specific decommissioning cost estimate.

The PSDAR's purpose is to provide a "general overview for the public and the NRC of the licensee's proposed decommissioning activities."¹⁶⁸ The PSDAR also informs the NRC Staff of the licensee's decommissioning schedule, allowing the Staff to plan for inspections and other decommissioning oversight activities. The NRC will provide notice of a PSDAR and an opportunity for public comment, and it will also hold a public meeting on the PSDAR.¹⁶⁹

But the NRC does not approve a PSDAR, nor does a PSDAR amend a license. That is because a PSDAR does not authorize a licensee to perform any decommissioning activity that is not already permitted under the license or would result in significant environmental impacts not already reviewed.¹⁷⁰ A licensee therefore may begin to perform major decommissioning activities consistent with its PSDAR ninety days after the NRC has received the PSDAR.¹⁷¹

NRC regulations expressly prohibit a licensee from performing any decommissioning activity that results in significant impacts "not previously reviewed."¹⁷² The NRC has evaluated potential environmental impacts of decommissioning nuclear power reactors in a comprehensive GEIS.¹⁷³ The "GEIS reflects the NRC's determination that decommissioning is not itself a major federal action" and "it serves 'to establish an envelope of environmental impacts associated with decommissioning activities.'"¹⁷⁴ The NRC's Decommissioning

¹⁶⁷ 10 C.F.R. § 50.82(a)(4)(i) (also providing for a copy to the affected state(s)).

¹⁶⁸ See Decommissioning of Nuclear Power Reactors, Final Rule, 61 Fed. Reg. 39,278, 39,281 (July 29, 1996) (Decommissioning Rule).

¹⁶⁹ 10 C.F.R. § 50.82(a)(4)(ii).

¹⁷⁰ See *id.* § 50.82(a)(6)(ii).

¹⁷¹ *Id.* § 50.82(a)(5). In issuing the PSDAR regulations, the NRC explained that initial decommissioning activities such as dismantlement are "not significantly different from routine operational activities such as replacement or refurbishment." See Decommissioning Rule, 61 Fed. Reg. at 39,284. The NRC therefore concluded that "these decommissioning activities do not present significant safety issues for which an NRC decision would be warranted." *Id.*

¹⁷² 10 C.F.R. § 50.82(a)(6)(ii).

¹⁷³ See Decommissioning GEIS.

¹⁷⁴ See *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-16-17, 84 NRC 99, 123 (2016) (quoting Decommissioning GEIS at 1-1).

GEIS addresses the potential impacts associated with both the SAFSTOR and DECON decommissioning approaches (as well as a combination of both).

In a PSDAR, a licensee must provide its reasons for concluding that the environmental impacts associated with planned decommissioning activities are bounded by previously issued, relevant site-specific or generic environmental impact statements.¹⁷⁵ If a licensee contemplates performing an activity with impacts not enveloped by previous environmental analyses, the licensee must submit a license amendment request, together with a supplemental environmental report evaluating the additional impacts.¹⁷⁶ Such a license amendment request would be subject to a hearing opportunity.

m. Miscellaneous Claims

Finally, as part of Contention I, Pilgrim Watch raises several additional claims that do not plausibly relate to the question of Holtec's financial condition, that are outside the scope of this license transfer proceeding, and that do not articulate admissible issues. These include (1) an apparent challenge to the 2002 Decommissioning GEIS's consideration of risk coefficients per unit dose;¹⁷⁷ (2) a claim that Holtec assumes incorrect "socioeconomic[] costs of decommissioning;"¹⁷⁸ (3) an environmental justice claim;¹⁷⁹ and (4) a claim that the impacts

¹⁷⁵ 10 C.F.R. § 50.82(a)(4)(i).

¹⁷⁶ *Vermont Yankee*, CLI-16-17, 84 NRC at 123-24; Decommissioning GEIS at 1-11, 2-3; Decommissioning Rule, 61 Fed. Reg. at 38,283, 39,286. NRC regulations also prohibit a licensee from performing any decommissioning activities that foreclose release of the site for unrestricted use or result in a loss of reasonable assurance that adequate funds will be available for decommissioning. See 10 C.F.R. § 50.82(a)(6).

¹⁷⁷ Pilgrim Watch claims that Holtec's discussion of potential radiological dose to the public and workers is based on "an outdated GEIS" using outdated risk coefficients per unit dose. See PW Petition at 54-55. Pilgrim Watch does not suggest how any of its claims call into question Holtec's decommissioning cost estimate. Holtec states that even apart from Pilgrim Watch's claim falling outside the scope of this proceeding, the 2002 Decommissioning GEIS used risk coefficients from the BEIR V report, which Pilgrim Watch did not address, and the 2013 GEIS on license renewal "discusses current risk coefficients" based on the BEIR VII report, and the difference is "within the margin of uncertainty associated with these estimates." See Applicants Answer to PW at 26 n.84 (citing "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (Final Report), NUREG-1437, rev. 1 (June 2013)).

¹⁷⁸ See PW Petition at 56-57. Providing funding to pay for local emergency planning is not part of the site-specific decommissioning cost estimate.

¹⁷⁹ See *id.* at 65.

of radiological accidents are not bounded by the previously issued GEIS.¹⁸⁰ We therefore conclude that Pilgrim Watch's Contention I is inadmissible.

2. *Pilgrim Watch's Contention II*

In Contention II, Pilgrim Watch argues that the license transfer request requires a NEPA environmental analysis and that the application is deficient for not including an ER;¹⁸¹ that the no significant hazards finding in 10 C.F.R. § 2.1315 does not apply;¹⁸² the categorical exclusion in 10 C.F.R. § 51.22(c)(21) does not apply;¹⁸³ and that the environmental impacts of decommissioning are not bounded by previously issued environmental impact statements.¹⁸⁴

Among its arguments calling for a NEPA analysis, Pilgrim Watch states that a lack of sufficient funds to carry out decommissioning “could result in significant adverse health, safety, and environmental impacts” and further “would increase the need for an updated site assessment and environmental impact statement.”¹⁸⁵ We find that the categorical exclusion applies to the license transfer and associated amendment and that therefore no additional NEPA analysis is required.

As an initial matter, Pilgrim Watch references 10 C.F.R. § 51.53(d) as support for its argument that the license transfer application needed to include an environmental report.¹⁸⁶ Section 51.53(d) refers to an applicant seeking a license amendment “approving a license termination plan or decommissioning plan under § 50.82.” Holtec seeks neither of these approvals at this time.¹⁸⁷ Following revisions to the decommissioning regulations in 1996, power reactor licensees

¹⁸⁰ See *id.* at 66-80. Pilgrim Watch claims that Holtec's cost estimates “ignore” the costs of mitigating radiological accidents. See *id.* at 66. But Holtec will carry onsite property damage insurance and offsite nuclear liability insurance in coverage amounts approved by the NRC. Moreover, although the various claims of accident risk and accident impacts are outside of the scope of this transfer proceeding, we note that these claims do not even appear relevant to Holtec's PS-DAR, which, pursuant to NRC regulations, addresses the environmental impacts associated with “site-specific decommissioning activities.” See 10 C.F.R. § 50.82(a)(4)(i). Most of Pilgrim Watch's arguments raise concerns about the potential environmental impacts of spent fuel storage in a pool or ISFSI, not the potential environmental impacts of decommissioning activities. See PW Petition at 66-80.

¹⁸¹ See PW Petition at 82.

¹⁸² See *id.* at 87-89.

¹⁸³ See *id.* at 89-90.

¹⁸⁴ See *id.* at 87-123.

¹⁸⁵ See *id.* at 123-25.

¹⁸⁶ See *id.* at 82, 85.

¹⁸⁷ Section 51.53(d) also applies to applicants for a license amendment authorizing decommissioning activities, which this proceeding likewise does not involve.

are “no longer . . . required to have an approved decommissioning plan” before undertaking major decommissioning activities.¹⁸⁸ The revised rules instead instituted the requirement that licensees provide a PSDAR.¹⁸⁹

Pilgrim Watch also references 10 C.F.R. § 51.20(b)(9), which requires an environmental impact statement in proceedings for away-from-reactor ISFSIs licensed pursuant to 10 C.F.R. Part 72.¹⁹⁰ But no such licensing action is involved in this proceeding.

a. Categorical Exclusion for License Transfers and Associated Amendments of License

The NRC has determined, by rule, that certain categories of licensing actions do not individually or collectively have a significant effect on the environment. Except in the case of special circumstances as determined by the Commission, no environmental assessment or environmental impact statement is required for these categories of licensing actions, which are categorically excluded from the need to prepare an NRC analysis under NEPA.¹⁹¹ A categorical exclusion “does not indicate the absence of an environmental review, but rather, that the agency has established a sufficient administrative record to show that the subject actions do not, individually or cumulatively, have a significant effect on the human environment.”¹⁹²

After performing numerous environmental assessments for license transfer applications, which demonstrated no significant environmental effects linked to the transfers, the NRC determined that license transfers do not significantly affect the environment.¹⁹³ Pursuant to 10 C.F.R. § 51.22(c)(21), the NRC categorically excluded license transfer actions from the need to perform further environmental analysis. As the NRC explained in issuing the categorical exclusion rule, license transfers do not “in and of themselves permit the licensee to operate the facility” in a different manner than that permitted under the existing licenses. Therefore a license transfer would not usually present environmental impacts any different from those already considered in relevant generic or site-specific NEPA analyses.¹⁹⁴ Consequently, unless we determine that special circumstances

¹⁸⁸ See Decommissioning Rule, 61 Fed. Reg. at 39,279. The reference in the regulation to a “decommissioning plan” relates to materials licensees. See *id.* at 39,290.

¹⁸⁹ See *id.* at 39,281; 10 C.F.R. § 50.82(a)(4).

¹⁹⁰ See PW Petition at 85.

¹⁹¹ See 10 C.F.R. § 51.22(b), (c).

¹⁹² Categorical Exclusions from Environmental Review, Final Rule, 75 Fed. Reg. 20,248, 20,251 (Apr. 19, 2010).

¹⁹³ See Streamlined Hearing Process, 63 Fed. Reg. at 66,728.

¹⁹⁴ See *id.*

are present, an environmental assessment or environmental impact statement is not required for approvals of direct or indirect transfers of any license issued by the NRC and for “any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license.”¹⁹⁵ Here, the Staff concluded that the license transfer action and the associated license amendment meet the criteria of the NRC’s categorical exclusion rule in 10 C.F.R. § 51.22.¹⁹⁶

b. Deletion of License Condition J (4)

Pilgrim Watch argues that Holtec erroneously relies on the generic determination that a license amendment that “does no more than conform the license to reflect the transfer action[] involves . . . no significant hazards consideration” to avoid performing an environmental analysis of the transfer.¹⁹⁷ It argues that the deletion of license conditions relating to parent company guarantees does more than “conform the license” to reflect the transfer.¹⁹⁸ As an initial matter, Pilgrim Watch mistakes the significance of the “no significant hazards consideration” finding. Section 2.1315 allowed the Staff to issue the license on an immediately effective basis, but Holtec’s justification for not submitting an environmental report with its application was the categorical exclusion found in 10 C.F.R. 51.22(c)(21).

The NRC imposed the parent company guarantee (License Condition J (4)) when it approved the transfer of the Pilgrim operating license from the Boston Edison Company to ENGCO in 1999.¹⁹⁹ As part of the previous transfer, Entergy International, a wholly owned subsidiary of Entergy Corporation, offered contingency funding to ENGCO via a specific Inter-Company Credit Agreement, which the Staff reviewed at the time of the transfer.²⁰⁰ Through the license transfer currently before us, Entergy International no longer will be a corporate affiliate of the company that was called ENGCO and now is renamed Holtec Pilgrim.²⁰¹

¹⁹⁵ 10 C.F.R. § 51.22(c)(21).

¹⁹⁶ See SER at 33 (mis-numbered as page 7).

¹⁹⁷ PW Petition at 87-88; see 10 C.F.R. § 2.1315.

¹⁹⁸ PW Petition at 88.

¹⁹⁹ License Condition J (4) required ENGCO to “have access to a contingency fund of not less than fifty million dollars.” See License Condition J (4).

²⁰⁰ See Safety Evaluation for the Proposed Transfer of Operating License and Materials License for Pilgrim Nuclear Power Station to Entergy Nuclear Generation Co. (Apr. 29, 1999), at 4, 9 (SER for 1999 License Transfer), Encl. 3 to Letter from Alan B. Wang, NRC, to Theodore A. Sullivan, Boston Edison Co., and Jerry W. Yelverton, ENGCO (Apr. 29, 2019) (ML011910099) (noting that the contingency funding would be available as necessary to cover operating costs if projected revenues were temporarily lost due to an outage).

²⁰¹ As the Applicants note, through the transfer sale, Entergy is “extinguishing its interests in
(Continued)

Holtec's proffered financial qualification demonstration relies only on the prepayment method of financial assurance, based on the funding accumulated in the trust fund estimated decommissioning cost. Had the Staff concluded that the trust fund by itself is insufficient, the Staff might have required additional financial assurance. Or alternatively, the Staff might have denied, limited, or otherwise conditioned the exemption. But the specific contingency funding provision is no longer an available financial assurance option. The proposed deletion of License Condition J (4) therefore was necessary to reflect the new financial qualification showing provided for applicants Holtec Pilgrim and HDI.

Accordingly, the license amendment associated with this transfer merely effectuated an approved transfer. In issuing the rule governing the categorical exclusion for license transfers the NRC stated that "amendments effectuating an approved transfer present no safety questions" and further that the NRC had "determined that a new categorical exclusion should be added" for license transfer actions and license amendments that effectuate the approved transfers.²⁰²

In contrast, the NRC made clear what type of license amendment requests would not fall within the categorical exclusion — "any request for an amendment that would directly affect the actual operation of a facility."²⁰³ The NRC observed based on its extensive experience with such matters, the typical license transfer review "consists largely of assuring that the ultimately licensed entity has the capability to meet financial qualification and decommissioning funding aspects of NRC regulations," and "[t]hese financial capabilities . . . have *no direct*" impact on the requirements governing a facility's operations.²⁰⁴ But those "[a]mendments that directly affect the actual operation of a facility" remain subject to the environmental review requirements in 10 C.F.R. Part 51.²⁰⁵

Here, the deletion of License Condition J (4) and of the three other financial license conditions imposed at the time of the 1999 license transfer do not directly affect the operation of the Pilgrim facility. Nor does deleting these financial conditions expand the activities authorized under the license. Therefore, we find that these deletions were administrative in nature and fall within the scope of the categorical exclusion in § 51.22(c)(21).²⁰⁶

and responsibility for Pilgrim," and therefore no Entergy-related support agreement would continue following the sale. *See* Applicants Answer to Commonwealth at 17 & n.62. No such support is offered or relied on as part of the equity purchase and sale agreement or likewise as part of the license transfer application.

²⁰² *See* Streamlined Hearing Process, 63 Fed. Reg. at 66,728.

²⁰³ *Id.*

²⁰⁴ *See id.* at 66,722 (emphasis added).

²⁰⁵ *See id.* at 66,728.

²⁰⁶ The three other deleted financial conditions, License Conditions J (1), J (2), and J (3) pertained
(Continued)

In sum, a license transfer applicant's reliance on different financial assurance methods than a current licensee would not normally present the potential for any new and significant risk of environmental harm. All applicants must demonstrate adequate financial qualification to take over the ownership and/or operation of a facility. The categorical exclusion rule applies even when an applicant does not rely on the same methods of showing financial qualification on which the current licensee relied. By deleting the four license conditions, the license amendment effectuated the approved transfer and thus falls within the scope of 10 C.F.R. § 51.22(c)(21).

c. Categorical Exclusion for Holtec's Application and Exemption Request

Pilgrim Watch further argues that the categorical exclusion generally applicable to license transfers should not apply to this proceeding. Pilgrim Watch raises various arguments similar to those it raised in Contention I, in which it argued that the site is contaminated and Holtec does not know the extent of the contamination and therefore is not prepared to deal with it.²⁰⁷ But, as we discussed above, these are issues associated with the future decommissioning, not the transfer of the license, and are outside the scope of this proceeding.

Specifically, Pilgrim Watch challenges HDI's conclusion in its PSDAR that the environmental impacts associated with the planned decommissioning activities are "less than and bounded by" previously issued environmental impact statements.²⁰⁸ Pilgrim Watch argues that the impacts are not bounded by earlier environmental analyses because those analyses either omitted crucial information or there is new information "resulting from events that occurred after the previous [environmental impact statements] were issued."²⁰⁹

But if Pilgrim Watch has grounds to believe that the impacts of planned decommissioning, site restoration, and spent fuel management activities exceed those previously reviewed, its recourse is a petition for enforcement action to address HDI's representations in the Pilgrim PSDAR.²¹⁰ For the reasons described above, in this license transfer proceeding the NRC will not approve the PSDAR or authorize any of the decommissioning, spent fuel management, and site restoration activities outlined in it. Although the site-specific decommissioning cost estimate that Holtec Pilgrim and HDI attached to the PSDAR

to specific actions to be taken at the time of the 1999 transfer and are on their face inapplicable here. See Application, Attach. A, "Renewed Facility Operating License (Changes)," at 4; see also SER for 1999 License Transfer at 11-12.

²⁰⁷ PW Petition at 91, 94-130.

²⁰⁸ *Id.* at 91; see also HDI PSDAR at 20; see also *id.* at 20-37 (providing reasons for conclusion).

²⁰⁹ PW Petition at 91.

²¹⁰ See 10 C.F.R. § 2.206; see also *id.* § 50.82(a)(4)(i), (6)(ii).

bears directly on the financial assurance findings that are required to approve the license transfer, the environmental impacts of the activities described in the PSDAR do not.²¹¹ Pilgrim Watch's various challenges to the environmental conclusions in the PSDAR accordingly fall outside the scope of this proceeding.

Finally, Pilgrim Watch argues that the categorical exclusion does not apply because Pilgrim Watch has asked for an environmental assessment.²¹² Pilgrim Watch points to the language in 10 C.F.R. § 51.22(b), which provides that environmental analyses are not required "[e]xcept in special circumstances as determined by the Commission upon its own initiative or upon request of any interested person." But the regulation simply allows an interested person to request that the Commission make the determination that "special circumstances" exist that warrant an exception to the categorical exclusion.²¹³ Pilgrim Watch's interpretation — that the categorical exclusion would not apply any time a petitioner asks that it not apply — would circumvent the purpose of the regulation.

D. Supplemental Motions

We also received several supplemental filings in support of the hearing requests. We address each briefly below.

1. New Decommissioning Activities Timeline

Pilgrim Watch filed a motion to supplement its hearing request based on Holtec's change in the project timeline.²¹⁴ But Pilgrim Watch does not provide expert or factual support indicating how the specific timeline change may materially impact the cash flow analysis or overall financial qualification demonstration.²¹⁵ There is no supported assertion of how the timeline change might affect Holtec's costs, for example. Further, potential increased costs due to delays in decommissioning commonly are addressed by the contingency added to decommissioning cost estimates, and Pilgrim Watch provides nothing to challenge

²¹¹ See HDI PSDAR at 20-37.

²¹² See PW Petition at 89-90.

²¹³ See 10 C.F.R. § 51.22(b).

²¹⁴ See Pilgrim Watch Motion to Supplement its February 20, 2019 Motion to Intervene and Request for Hearing, its April 1, 2019 Reply to Petitioners, and its May 3, 2019 Motion to Supplement (Nov. 25, 2019).

²¹⁵ Because we do not allow Pilgrim Watch to incorporate the contentions, arguments, and evidence of another petitioner unless it has first proposed its own admissible contention, we do not consider the evidence the Commonwealth filed in support of a similar motion concerning Holtec's timeline change. See Motion of the Commonwealth of Massachusetts to Amend its Petition with New Information (Dec. 13, 2019).

the assumption that potential added costs from the timeline change would be covered by Holtec's contingency allowance. To trigger an adjudicatory hearing, it is insufficient merely to claim that changes in the timing and duration of decommissioning "plainly impact" whether Holtec has adequate funding and "whether the license transfer application should be granted or denied."²¹⁶ Pilgrim Watch does not provide a supported challenge to Holtec's financial qualifications demonstration, and we therefore find that Pilgrim Watch has not raised an admissible contention.²¹⁷

2. *Motion Relating to Holtec's Announcement Regarding Acquisition of Indian Point*

Pilgrim Watch also filed a motion to supplement its hearing request with new information following a press release on April 16, 2019, by Entergy Corporation, in which Entergy stated its intention to sell Indian Point Units 1, 2, and 3 to Holtec.²¹⁸

Pilgrim Watch articulates its concern that Holtec will be decommissioning not just the Pilgrim and Oyster Creek sites simultaneously but also the Indian Point site. Pilgrim Watch states that the news about the additional units at Indian Point exacerbates its concerns about Holtec's financial ability to decommission Pilgrim.²¹⁹ But Pilgrim Watch does not raise a supported dispute challenging Holtec's financial qualifications to be the owner and operator of Pilgrim.

Pilgrim Watch notes that the NRC Staff issued a Request for Additional Information (RAI) to Holtec, seeking more information to demonstrate that HDI's management and technical support organization will have sufficient resources (e.g., corporate structure, internal procedures, management and technical support organization staff capacities) to conduct licensed activities at both the Oyster Creek and Pilgrim sites.²²⁰ But Pilgrim Watch's reference to the RAI does not raise an admissible challenge to the application. The Staff simply requested additional information regarding HDI's management and technical support organization, a matter going to HDI's overall technical qualifications to conduct

²¹⁶ See *id.* at 5-6.

²¹⁷ Moreover, as a procedural matter, NRC regulations do not provide for motions to supplement a hearing request. Motions for leave to file new or amended contentions must be filed pursuant to 10 C.F.R. § 2.309(c)(1), which addresses the factors for filings submitted after the contention deadline.

²¹⁸ See Pilgrim Watch Motion to Supplement its Motion to Intervene and Request for Hearing (Apr. 26, 2019).

²¹⁹ See *id.* at 1-2.

²²⁰ See *id.* at 2 (quoting Request for Additional Information (Mar. 21, 2019) (ML19086A349)).

licensed activities at both Oyster Creek and Pilgrim.²²¹ The RAI does not raise a concern with Holtec's financial qualification to conduct licensed activities. Moreover, Pilgrim Watch did not raise a challenge to HDI's technical qualifications — Pilgrim Watch states that its motion is filed in support of its Contentions I (financial qualification) and II (NEPA claims).²²² We have found neither contention admissible, and the additional information in the motion does not render either contention admissible.

3. *Pilgrim Watch Motion to File a New Contention*

Pilgrim Watch also submitted a motion to file a new Contention III, raising licensee character claims. In support of Contention III, Pilgrim Watch argues that Holtec and SNC-Lavalin “have a long-standing history of corruption, fraud, bribery and lying in connection with their corporations’ business dealings.”²²³ Pilgrim Watch claims that the NRC cannot grant the license transfer without first investigating Holtec International, SNC-Lavalin, HDI, and CDI and without determining, based on the investigations, that “each of them is trustworthy and reliable and otherwise possesses the character prerequisite to allowing it to participate in or control the decommissioning of Pilgrim Nuclear Power Station.”²²⁴

Pilgrim Watch claims that its contention is timely because it only learned upon reading our June 18, 2019, license transfer decision in *Oyster Creek* that the NRC conducted “no background check and made no determination of trustworthiness and reliability” of HDI, CDI, Holtec, and SNC-Lavalin, and that the NRC has “no intention of considering the trustworthiness, reliability, and character” of these entities.²²⁵ Pilgrim Watch also bases the timeliness of its contention on a June 19, 2019, e-mail from an NRC Public Affairs officer responding to James Lampert’s June 17, 2019, e-mail, in which Mr. Lampert inquired about whether NRC rules, regulations, or policies require a licensee to be deemed

²²¹ Merely identifying a Staff RAI, which is a common Staff practice in seeking information as part of its review of applications, does not identify a genuine material dispute with an application. See, e.g., *Oconee*, CLI-99-11, 49 NRC at 336-37.

²²² See Pilgrim Watch’s Reply to Applicants’ Answer Opposing Pilgrim Watch’s Motion to Supplement its Motion to Intervene and Request for Hearing (May 6, 2019), at 4. Pilgrim Watch again improperly casts its motion as merely a “supplement” but not an amendment to its hearing request. *Id.* NRC regulations do not provide for such supplements to hearing requests that are not filed under the contention admissibility regulations.

²²³ See Pilgrim Watch Motion to File a New Contention (July 16, 2019), at 10 (PW Motion to File New Contention).

²²⁴ *Id.* at 1.

²²⁵ See *id.* at 5.

trustworthy and reliable.²²⁶ Further, Pilgrim Watch states that only on June 18, 2019, did it learn of a letter — dated December 20, 2018 — from the NRC responding to other concerns expressed regarding Holtec International.²²⁷

While the NRC has the discretion and the authority under the AEA to examine questions of licensee character, and we may admit for hearing a contention challenging an applicant's or licensee's character, there are no statutory or regulatory requirements mandating the NRC to conduct an investigation into the character of license transfer applicants and their owners. Pilgrim Watch's references to regulatory requirements governing licensee programs for controlling access to nuclear power plants, including the use of background checks, therefore are not relevant to this license transfer proceeding.²²⁸

Pilgrim Watch in fact makes clear that its contention does not “seek to prove” that Holtec, SNC-Lavalin, HDI, and CDI are untrustworthy and unreliable; rather its contention is that in order to grant the license transfer application, the NRC must first conduct an investigation into these companies' character.²²⁹ As warranted, the NRC examines allegations involving management conduct, culture, or specific improper or illegal actions by licensees or their personnel. But there is no requirement to conduct investigations into the corporate “character” of companies that submit applications to the NRC.

Moreover, we find the contention neither timely nor otherwise admissible. Motions for leave to file a new contention after the applicable deadline for contentions will not be entertained unless the information upon which the filing was based was not previously available; the information upon which the filing is based is materially different from information previously available; and the filing has been submitted in a timely fashion based on the availability of the information.²³⁰ None of the three documents on which Pilgrim Watch relies to show timeliness provides good cause for the delayed filing of Contention III.

Our decision in *Oyster Creek* did not set forth a new standard regarding contentions raising claims of licensee character. We reiterated a longstanding NRC standard that, to be admissible as a litigable matter in an adjudicatory proceeding, claims of deficient licensee character or integrity must have “some direct and obvious relationship between the character issues and the licensing

²²⁶ See *id.* at 4-5; see also *id.*, Ex. 1, E-mail from Neil Sheehan, NRC Public Affairs, to James Lampert (June 19, 2019).

²²⁷ See PW Motion to File New Contention at 4; see also *id.*, Ex. 1, Letter from Dori L. Willis, NRC, to Kevin Kamps, BeyondNuclear.Org (Dec. 20, 2018) (Kamps Letter).

²²⁸ See *id.* at 19-20 (citing 10 C.F.R. § 73.56).

²²⁹ See Pilgrim Watch Reply to Applicants' Answer Opposing Pilgrim Watch's Motion to File a New Contention (Aug. 19, 2019), at 2; see also PW Motion to File New Contention at 2-3.

²³⁰ See 10 C.F.R. § 2.309(c)(1).

action in dispute.”²³¹ We stated that claims of prior violations or events involving a company must be “directly germane to the challenged licensing action.”²³² Our decision does not justify the delayed submission of Contention III. Moreover, the claims regarding SNC-Lavalin that we referenced in *Oyster Creek* were not new matters; we noted that similar comments regarding SNC-Lavalin had been filed before the NRC in November 2018. And the petitioner in that proceeding, the Township of Lacey, filed its petition to intervene raising the SNC-Lavalin claims in November 2018 as well. Our *Oyster Creek* decision therefore presents no new information that would serve as a basis for Contention III.

Nor does the June 19, 2019 e-mail from the NRC’s Public Affairs officer, responding to a question from Mr. Lampert, provide a ground for timely filing. The e-mail merely reflected an effort to respond to Mr. Lampert’s inquiry regarding NRC regulations and policy. It does not contain new and materially different information than information previously available.

Lastly, Pilgrim Watch states that it only learned of a December 2018 letter, which Pilgrim Watch cited in support of Contention 3, from the NRC in June 2019.²³³ The letter responded to an allegation against Holtec raised by Mr. Kamps and the Beyond Nuclear organization. But Pilgrim Watch does not indicate that it could not have known earlier of the referenced allegations against Holtec, which involved alleged events that took place between 2000 and 2004.²³⁴ Indeed, Pilgrim Watch in its proposed contention cites to information provided by Mr. Kamps and Beyond Nuclear relevant to these allegations that date back to as early as 2015.²³⁵ Pilgrim Watch does not dispute that the allegations were in the public domain but states it was not aware earlier of them, and that it is basing the timeliness of its claim on new information in the NRC’s letter. There is, however, no new information in the letter that supports Contention III. The letter states, for example, that Mr. Kamps did not provide specific information or details pertaining to any activities that could be in violation of NRC regulations. The letter further states that the individual to whom a purported bribe was offered is deceased and therefore the NRC could not obtain “additional information regarding the attempted bribe.”²³⁶

To be sure, Pilgrim Watch raises numerous claims concerning SNC-Lavalin.²³⁷ But as Pilgrim Watch notes, these are “longstanding” claims that

²³¹ *Oyster Creek*, CLI-19-6, 89 NRC at 477 (quoting *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 365 (2001)).

²³² *Id.*

²³³ See PW Motion to File New Contention at 4.

²³⁴ See *id.*, Ex. 1, Kamps Letter, Enclosure.

²³⁵ See *id.* at 16 & nn. 9-10.

²³⁶ See *id.*, Ex. 1, Kamps Letter, Enclosure.

²³⁷ See *id.* at 10-14; *id.*, Ex. 2 at 29-32.

have been reported in “[n]umerous news media.”²³⁸ They are not new. And many of the claims involving SNC-Lavalin involve alleged wrongdoing in other countries; Pilgrim Watch does not link any of the alleged improprieties with the Pilgrim facility. We have stated that “[a]bsent strong support for a claim that difficulties at other plants run by a corporate parent will affect the plant(s) at issue before the Commission, we are unwilling to use our hearing process as a forum for a wide-ranging inquiry into the corporate parent’s general activities across the country.”²³⁹ In this case, Pilgrim Watch seeks that we link disparate international activities from years ago, with no obvious connection to nuclear power plant decommissioning or the Pilgrim facility, to this license transfer action merely because the international co-parent of CDI was involved in those actions. But Pilgrim Watch provides no adequate link between SNC-Lavalin and this license transfer.

Pilgrim Watch also raises concerns regarding Holtec’s Chief Executive Officer (CEO). These claims include asserted false or misleading statements in a 2014 application submitted to New Jersey government officials.²⁴⁰ But the article that Pilgrim Watch cites reflects that New Jersey has a task force looking into matters that include the allegation.²⁴¹ If the investigation into the actions in New Jersey results in findings that bear on Holtec’s applications pending before the NRC or on its licensed activities, we will consider the findings and respond as appropriate. Here, however, Pilgrim Watch has not established a “direct and obvious” relationship between the claim and this license transfer action. To avoid open-ended inquiries into matters ultimately unrelated to NRC-licensed activities, we have limited contentions raising claims of poor or improper management or character to claims that “relate directly to the proposed licensing action.”²⁴² Pilgrim Watch’s motion is both untimely and does not raise an admis-

²³⁸ See *id.* at 10.

²³⁹ *Power Authority of the State of New York* (James A. Fitzpatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 312 (2000).

²⁴⁰ See PW Motion to File New Contention at 14-15; *id.*, Ex. 2 at 33-35.

²⁴¹ See Nancy Solomon and Jeff Pillets, *A False Answer, a Big Political Connection and \$260 Million in Tax Breaks* (May 23, 2019), available at <https://www.propublica.org/article/holtec-international-george-norcross-tax-breaks> (last visited July 2, 2020).

²⁴² *Millstone*, CLI-01-24, 54 NRC at 366 (quoting *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 120 (1995)). In addition, Pilgrim Watch quotes a letter that was sent from the New Mexico Commissioner of Public Lands to Holtec’s CEO, with copies to the NRC Chairman and the Secretary of Energy. See PW Motion to File New Contention at 15-16; see also *id.*, Ex. 2 at 36-37 (Letter from Stephanie Garcia Richard, Commissioner of Public Lands, to Krishna Singh, President and CEO of Holtec (June 19, 2019)). The letter states that Holtec made misrepresentations to the NRC in its application for a nuclear waste storage facility in New Mexico. We are aware that this letter has been submitted by a petitioner

(Continued)

sible contention related directly to the license transfer application. We therefore deny it.

4. Pilgrim Watch Motion on Biodiversity

Finally, Pilgrim Watch filed a motion to supplement its request for hearing with what it asserts is new and significant information regarding biodiversity.²⁴³ The motion references a *New York Times* article describing a report by the United Nations on biodiversity and ecosystem services.²⁴⁴ Pilgrim Watch argues that the report and related United Nations statement is relevant to its Contention II on the environmental impacts of decommissioning and that it is relevant to its claim in Contention I that Holtec's cost estimate is inaccurate. We deny the motion.

As we have noted, our regulations do not provide for a motion to supplement a hearing request. Pilgrim Watch does not address the timeliness factors for filing a new or amended contention under 10 C.F.R. § 2.309(c)(1). In any event, the asserted biodiversity issue is outside the scope of this proceeding. In addition, Pilgrim Watch does not explain how the asserted biodiversity concerns would impact decommissioning costs and therefore fails to raise a genuine dispute challenging Holtec's cost estimate. The motion therefore does not render Pilgrim Watch's Contention I admissible.

III. CONCLUSION

For the reasons outlined in this decision, we *deny* Pilgrim Watch's request for hearing and petition to intervene.

in the *Holtec International* (Hi-Store Consolidated Interim Storage Facility) (CISF) proceeding on the waste disposal facility application, which that letter concerns. This matter is already under consideration in the Holtec CISF proceeding, to which the claims directly pertain. Pilgrim Watch's motion, however, does not draw a direct link between the New Mexico Commissioner of Public Land's letter and this license transfer proceeding.

²⁴³ Pilgrim Watch Motion to Supplement its Motion to Intervene and Request for Hearing – Biodiversity (May 9, 2019).

²⁴⁴ See *id.* at 1-2.

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
This 12th day of November 2020.

Commissioner Baran, Dissenting

In this license transfer proceeding for the Pilgrim Nuclear Power Station, Pilgrim Watch submitted one contention challenging the Applicants' financial qualifications and a second contention arguing that NRC did not meet its obligations under the National Environmental Policy Act (NEPA). The majority decision finds both contentions inadmissible and denies Pilgrim Watch's request for a hearing. In my view, the majority decision takes an overly strict approach to contention admissibility and inappropriately delves into and decides the merits of aspects of the contentions. It also downplays the importance of the financial qualifications review at the time of license transfer. Therefore, I respectfully dissent. I would admit aspects of both Pilgrim Watch contentions and find that Pilgrim Watch has standing to pursue those contentions at a hearing.

I. BACKGROUND

NRC regulations require a license transfer applicant like Holtec to demonstrate its financial and technical qualifications.¹ As the Pilgrim reactor is permanently shut down, Holtec must demonstrate that it has the financial qualifications both to complete radiological decommissioning and to manage spent fuel until it is removed from the site. Because the exemption issued by the NRC Staff allows Holtec to withdraw funds from the decommissioning trust fund for non-radiological site restoration, those site restoration costs are also relevant to our review.

Holtec relies solely on the funding in the Pilgrim decommissioning trust fund to demonstrate its financial qualifications. At the time of the license transfer closing, the trust fund contained \$1.03 billion. The cash flow analysis in Holtec's application projects that approximately \$3.6 million will remain in the trust fund in 2063, by which time Holtec expects the spent fuel to be removed from the site. Holtec's application projects that, by the end of 2027, \$210 million will remain in the fund for spent fuel management (the maintenance and oversight of the Independent Spent Fuel Storage Installation (ISFSI) until 2063).

II. PILGRIM WATCH'S CONTENTION I ON FINANCIAL QUALIFICATIONS

In its financial qualifications contention, Pilgrim Watch argues that the Applicants have not presented sufficient evidence to NRC of adequate financial as-

¹ See 10 C.F.R. § 50.82(a)(8)(i)(B) and (C); 10 C.F.R. § 50.80(b)(1)(i).

surance to meet regulatory requirements.² Pilgrim Watch contends that Holtec's decommissioning cost estimate (on which the license transfer application relies) is insufficiently detailed and inadequately supported. In its timely Motion to Supplement, Pilgrim Watch provides additional factual support for this contention by including new information related to a planned delay in Holtec's decommissioning schedule. The Motion to Supplement should be granted.

This element of Pilgrim Watch's financial qualifications contention is admissible. Pilgrim Watch argues that Holtec's new plan to take an additional two years or more to complete decommissioning and site restoration renders Holtec's cash flow analysis inaccurate. Holtec's application does not account for this delay, and Pilgrim Watch raised a material dispute over whether increased project management and overhead costs from the schedule change would exceed the projected \$3.6 million trust fund surplus by a substantial margin. Based on the information before us, I find that Pilgrim Watch has raised a genuine factual dispute about whether potential increased costs due to the timeline change will have a material impact on Holtec's financial qualification demonstration.

Holtec may be able to obtain damages from the Department of Energy for partial breach of contract as a result of the Department's failure to take title to Pilgrim's spent fuel. However, these potential litigation recoveries are not part of the financial qualifications demonstration in Holtec's application. As a result, this potential source of future funding cannot be considered in assessing the admissibility of Pilgrim Watch's contention.

Pilgrim Watch has raised a genuine issue of material fact regarding the adequacy of Holtec's cost estimates. Therefore, this aspect of Pilgrim Watch's Contention I should be admitted for hearing. A hearing is the proper forum for examining whether any license conditions, such as requiring Holtec to deposit some portion of the litigation recoveries into the decommissioning trust fund, are necessary to ensure the overall adequacy of spent fuel management funding.

III. PILGRIM WATCH'S CONTENTION II ON NEPA

In Contention II, Pilgrim Watch argues that a NEPA environmental analysis must be prepared as part of the agency's review of Holtec's license transfer application. Pilgrim Watch points to the potential negative environmental consequences of insufficient funding to complete radiological decommissioning, perform site restoration, and manage Pilgrim's spent fuel until it is removed from the site. Holtec contends that an Environmental Assessment (EA) or Environmental Impact Statement (EIS) is not required because license transfers fall

² Pilgrim Watch Petition to Intervene and Hearing Request (Feb. 20, 2019) (Pilgrim Watch Petition) at 14-15.

under a categorical exclusion established by NRC regulations. Pilgrim Watch and Holtec both recognize that NRC regulations provide a categorical exclusion for at least some license transfer applications. They disagree about whether the categorical exclusion applies in this particular case.

The categorical exclusion in 10 C.F.R. § 51.22(c)(21) applies to “[a]pprovals of direct or indirect transfers of any license issued by NRC and any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license.” The dispute centers on the meaning of “required to reflect” and the application of that phrase to the facts of this case. As the majority decision explains,

the Staff issued the license amendment reflecting the transfer and the name change, as well as the deletion of four financial license conditions imposed when the NRC approved the transfer of the Pilgrim license from the Boston Edison Company. This included License Condition J (4), which had required ENGEC to have access to contingency funding of “not less than fifty million dollars (\$50m) for payment, if needed, of Pilgrim operating and maintenance expenses, the cost to transition to decommissioning status in the event of a decision to permanently shut down the unit, and decommissioning costs.” The condition specified that once the plant had shut down following a decision to decommission, “Entergy Nuclear will use any remainder of the \$50m contingency fund that has not been used to safely operate and maintain the plant to support the safe and prompt decommissioning of the plant, to the extent such funds are needed for safe and prompt decommissioning.”³

The majority decision also notes that

although ENGEC’s name would be changed to Holtec Pilgrim, the same legal entity will continue to exist as Pilgrim’s owner before and after the transfer. . . . ENGEC would be converted to a limited liability company and . . . under applicable Massachusetts law on such a conversion, the converted entity is considered to be the same entity as that which existed prior to the conversion.⁴

Pilgrim Watch argues that dropping the substantive license condition providing for a \$50 million contingency fund was not “required to reflect” the approved license transfer.⁵ This is because the \$50 million license condition was applied

³ Majority Decision at pp. 363-64 (quoting Letter from A. Christopher Bakken III, ENOI, to NRC Document Control Desk (Nov. 16, 2018), Encl. 1, Application for Order Consenting to Direct and Indirect Transfers of Control of Licenses and Approving Conforming License Amendment, and Request for Exemption from 10 C.F.R. § 50.82(a)(8)(i)(A) (Application), Attach. A, “Renewed Facility Operating License (Changes),” at 4, Condition J (4) (ML18320A031)).

⁴ Majority Decision at p. 355 n.9.

⁵ Pilgrim Watch Petition at 88.

to ENGEC, which will continue to exist after the license transfer under the name Holtec Pilgrim. According to Pilgrim Watch, “Holtec and Entergy seek to do far more than conform the license to reflect the proposed transfer,” which could have been accomplished by changing the name from ENGEC to Holtec Pilgrim.⁶

On the other hand, Holtec argues that removal of the \$50 million contingency fund license condition “merely conforms the license to reflect the proposed transfer, because Holtec Pilgrim and HDI are basing their financial qualifications on the adequacy of the [decommissioning trust fund] and are not relying on any parent support agreement or any other form of supplemental financial assurance to support their financial qualifications.”⁷ In Holtec’s view, the deletion of the license condition is an “administrative amendment.”⁸

Thus, there is a clear dispute about the application of the categorical exclusion provision to the facts of this case. Pilgrim Watch and Holtec both make plausible arguments about whether NRC can rely on a categorical exclusion for the Pilgrim license transfer. The majority decision inappropriately digs into the merits of the competing claims and, without the benefit of a hearing, decides that Holtec should prevail. At this stage in the proceeding, what matters is that Pilgrim Watch has met the requirements for an admissible contention. The merits of this substantive factual dispute must be resolved at a hearing.

IV. PILGRIM WATCH’S STANDING

As Pilgrim Watch has submitted two admissible contentions, we must determine whether it has standing to pursue those contentions. In determining whether a petitioner has established standing, the Commission looks for guidance to judicial concepts of standing, which require a showing of a concrete and particularized injury (actual or threatened) that is fairly traceable to the challenged action and likely to be redressed by a favorable decision in the proceeding.⁹ The asserted injury also must be arguably within the zone of interests protected by the governing statute.¹⁰

⁶ Pilgrim Watch Reply to Applicants’ Answer Opposing Pilgrim Watch Petition for Leave to Intervene and Hearing Request (Apr. 1, 2019), at 26 (internal quotation marks and brackets omitted), 27.

⁷ Applicants’ Answer Opposing Pilgrim Watch Petition for Leave to Intervene and Hearing Request (Mar. 18, 2019), at 65.

⁸ *Id.*

⁹ See, e.g., *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995); *USEC Inc.* (American Centrifuge Plant), CLI-05-11, 61 NRC 309, 311 (2005).

¹⁰ *Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 47 (1994).

Pilgrim Watch seeks admission as a party to intervene on behalf of its members and asserts that it has representational standing.¹¹ To establish representational standing, an organization must demonstrate how at least one of its members may be affected by the challenged licensing action and would have standing in his or her own right.¹² The organization must identify that member by name and address and demonstrate that the member has authorized the organization to request a hearing on his or her behalf.¹³ Here, Pilgrim Watch included with its hearing request the declarations of five of its members.¹⁴ The declarants affirm that they reside at distances ranging from approximately three to ten miles from Pilgrim.

In previous license transfer proceedings, the Commission found the concerns of nearby residents over a licensee's financial ability to properly carry out and complete decommissioning sufficient to establish standing.¹⁵ In the context of standing, the Commission has recognized that inadequate decommissioning funding could lead to uncompleted decommissioning, and in turn that inadequate "cleanup of the reactor site . . . may result in adverse health effects, loss of aesthetic enjoyment, and diminished property values for those who live, work or play in the immediate vicinity."¹⁶

Consistent with these precedents, Pilgrim Watch has adequately demonstrated an injury in fact that is fairly traceable to the license transfer action. Pilgrim Watch's fundamental concern is that the Pilgrim site could be abandoned due to a lack of sufficient funding for decommissioning and spent fuel management, or that insufficient funding could prevent decommissioning work and spent fuel activities from being "properly managed . . . according to applicable federal, state, and local requirements."¹⁷ It argues that underfunding may lead to "cutting corners" and that funding may prove inadequate to maintain the ISFSI long-term (including in the event the ISFSI is affected by a natural hazard, such as rising

¹¹ See Pilgrim Watch Petition at 6.

¹² *Vermont Yankee Nuclear Power Corp. and AmerGen Vermont, LLC* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163 (2000).

¹³ *Id.*

¹⁴ See Declarations, attached as Ex. 1 to PW Petition at 133-43.

¹⁵ See, e.g., *Vermont Yankee*, CLI-00-20, 52 NRC at 163 n.4 (petitioner would "like to walk and hike in the area after it is decommissioned and therefore claims an interest in sufficient funding being set aside for the decommissioning to be properly carried out").

¹⁶ See *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 207-09 (1998) (where petitioner resided approximately 6 miles away and walked and hiked in surrounding area); see also *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75-76 (1994) (acknowledging link between adequacy of funding and ensuring safe and timely decontamination of site).

¹⁷ Pilgrim Watch Petition at 8.

sea levels).¹⁸ Pilgrim Watch members reside within a few miles of the facility and affirm that they frequently engage in recreational activities on the beaches and bays in the area of Pilgrim.

Moreover, Pilgrim Watch seeks a modification of the licenses to prevent potential underfunding.¹⁹ Insufficient financial qualifications, if demonstrated on the merits, can be remedied in this proceeding through financial license conditions or other means. Thus, the injury asserted by Pilgrim Watch can be redressed by a favorable decision in this proceeding.

Therefore, I find that Pilgrim Watch has standing to intervene in this proceeding.

V. CONCLUSION

For these reasons, I would *grant* Pilgrim Watch's request for hearing and petition to intervene and *admit* the specified portions of Pilgrim Watch's Contention I and Contention II.

¹⁸ *See id.* at 133 (Mary Lambert Declaration); 140 (Rebecca Chin Declaration); 142 (David O'Connell Declaration).

¹⁹ *See, e.g.,* Pilgrim Watch Petition at 134, 140.

Commissioner Hanson, dissenting in part

I join in part, and dissent in part from the majority's decision to dismiss Pilgrim Watch's petition for leave to intervene and request for a hearing in this license transfer proceeding. While I agree with the majority's dismissal of Contention II, I would find that Pilgrim Watch has met the contention admissibility standards for certain aspects of Contention I and has demonstrated standing to intervene.

This license transfer proceeding presents the Commission with questions not answered by past cases or addressed by current guidance. NRC guidance describes the general information that needs to be included in an application of this type, but it does not elaborate on the level of detail that is expected or required to demonstrate reasonable assurance of adequate protection. While I agree with the majority's conclusion that an applicant need not provide an exhaustive level of detail at this stage, the applicant's estimates should have an articulated basis to inform not only the agency decisionmaker, but also the interested public. Pilgrim Watch raises a series of concerns in Contention I related to the cost estimates provided by the applicants, citing the slim margin provided in the application between the estimated costs and the projected amount in the decommissioning trust fund.¹ As specified below, I would find certain aspects of Contention I admissible.

First, Pilgrim Watch challenges the lack of detail provided in the application to justify a 17% contingency factor.² The majority relies on past examples of contingency factors in other cases to justify dismissing this concern and further states that the "NRC does not have a minimum contingency requirement for the site-specific estimate." While this information is pertinent to determining an appropriate contingency factor, it does not address the issue raised by Pilgrim Watch in this contention admissibility proceeding. Namely, that there is a lack of justification provided in the application for the choice of a 17% contingency factor. I would therefore find that this issue raises a genuine dispute with the applicants on a material issue, meeting 10 C.F.R. § 2.309(f)(1)(vi).

Second, Pilgrim Watch is concerned that decommissioning costs will rise faster than the rate of inflation and that these cost increases will result in a depletion of the decommissioning trust fund before final license termination.³ Pilgrim Watch references an NRC document and two studies that call into question the assumptions made in the application about the cost of decommission-

¹ Pilgrim Watch Petition to Intervene and Hearing Request (Feb. 20, 2019) (PW Petition).

² PW Petition at 22.

³ See PW Petition at 24-25.

ing.⁴ Pilgrim Watch further explains how a change in this assumption could influence the overall cost estimate and impact the financial assurance provided by the decommissioning trust fund.⁵ The majority evaluates the merits of Pilgrim Watch's supporting evidence and holds it to a standard not anticipated by our regulations at the contention admissibility stage. Further, the majority relies heavily on Holtec's future obligation to submit annual decommissioning financial assurance status reports. But future requirements cannot fulfill the obligations of an applicant now. I would therefore find that Pilgrim Watch raises a genuine dispute with the applicants on a material issue, meeting 10 C.F.R. § 2.309(f)(1)(vi).

In addition to the two issues raised in its initial petition for hearing, Pilgrim Watch submitted a motion to supplement its hearing request with additional information related to its concerns about a potential delay in schedule causing increased overhead costs and in turn, a deficiency in the amount available in the decommissioning trust fund.⁶ This motion includes a Holtec presentation from November 2019, which Pilgrim Watch offers as support to demonstrate a delay in the schedule. Pilgrim Watch asserts that this delay is not accounted for in the current cost estimates and is therefore material to whether the decommissioning trust fund is adequate to demonstrate Holtec's financial assurance.⁷ The majority rejects this additional information as unsupported, stating that it does not explain how the delay could materially impact the cash flow analysis. Further, the majority opinion states that Pilgrim Watch does not challenge the assumption that the potential added costs from the timeline change would be covered by the contingency allowance provided in the application. In my view, Pilgrim Watch has addressed these precise issues adequately enough to meet the contention admissibility standards. Not only has Pilgrim Watch connected the dots between the delay in schedule and the potential impact on cost estimates, it separately challenges the assumptions underlying the contingency allowance as inadequate. Presentation of additional material or expert testimony is unnecessary at this stage in the proceeding to support the simple assertion that delays in schedule, on the order of years, could challenge a cost estimate. As this motion was based on information not previously available and filed promptly after the new information became available, I would find that Pilgrim Watch has demonstrated

⁴ See PW Petition at 23-26; *see also* "2018 Nuclear Decommissioning Funding Study," Callan Investments Institute, at 3, 9; "2015 Nuclear Decommissioning Funding Study," Callan Investment Institute, at 3; NRC Questions and Answers, Encl. 5, SECY-11-0133 (ML111950031).

⁵ See PW Petition at 24-25.

⁶ See Pilgrim Watch Motion to Supplement its February 20, 2019 Motion to Intervene and Request for Hearing, its April 1, 2019 Reply to Petitioners, and its May 3, 2019 Motion to Supplement (Nov. 25, 2019).

⁷ See *id.* at 5-6.

good cause for an amended contention under 10 C.F.R. § 2.309(c)(1) and raised a genuine dispute with the applicants on a material issue pursuant to 10 C.F.R. § 2.309(f)(1)(vi).

I would further find that Pilgrim Watch has established representational standing in this proceeding pursuant to 10 C.F.R. § 2.309(d). The Pilgrim Watch petition includes declarations from members living within 10 miles of the site that have assented to representation. Further, Pilgrim Watch describes an injury in fact that is fairly traceable to the proceeding. Namely, that mismanagement of decommissioning activities or a shortfall in the decommissioning trust fund could result in a radiological accident or radiological contamination with offsite consequences.⁸ Finally, consistent with Commission precedent, I would allow Pilgrim Watch to adopt the contentions and supporting information submitted on behalf of the Commonwealth of Massachusetts because it has offered at least one admissible contention and established standing to intervene in this proceeding.⁹

⁸ See PW Petition at 7-8.

⁹ *Consolidated Edison Co. of New York* (Indian Point Units 1 and 2), CLI-01-19, 54 NRC 109, 132-33 (2001).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

William J. Froehlich, Chairman
Michael M. Gibson
Dr. Gary S. Arnold

In the Matter of

Docket No. IA-20-008-EA
(ASLBP No. 20-968-04-EA-BD01)

JOSEPH SHEA
(Order Prohibiting Involvement
in NRC-Licensed Activities
Immediately Effective)

November 3, 2020

On August 24, 2020, the Nuclear Regulatory Commission's Office of Enforcement (NRC Staff) issued an order that banned, effective immediately, an employee of an NRC licensee from NRC-licensed activities for five years. The order was based on the violation of the deliberate misconduct standard in 10 C.F.R. § 50.5 that caused the licensee to be in violation of 10 C.F.R. § 50.7. This proceeding concerns the employee's motion to set aside the immediate effectiveness of the order. The NRC Staff made the order effective immediately. The Board considered evidence presented in the record and at oral argument by the NRC Staff and Mr. Shea. In LBP-20-11, the Board majority granted the motion and held that the evidence presented was not adequate.

ENFORCEMENT PROCEEDING: BURDEN OF PROOF

NRC is authorized to issue immediately effective enforcement orders if it "finds that the public health, safety, or interest so requires or that the violation or conduct causing the violation is willful." 10 C.F.R. § 2.202(a)(5). When the

immediate effectiveness of an order has been challenged, “[t]he NRC staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds for the immediately effective order and immediate effectiveness is warranted.”

REGULATIONS: MISCONDUCT STANDARD; 10 C.F.R. § 50.5

Deliberate misconduct within the meaning of that regulation refers to “an intentional act or omission that the person knows would cause a licensee or applicant to be in violation of any rule, regulation or order; or any term, condition, or limitation, of any license issued by the Commission.” *See* 10 C.F.R. § 50.5(c)(1). Deliberate misconduct within the meaning of 10 C.F.R. § 50.5 is more than “careless disregard” or “deliberate ignorance.” Instead, it requires “an intentional act or omission” that the person knows would cause a licensee to be in violation of any rule. *Id.*

ENFORCEMENT ACTIONS: MOTION TO SET ASIDE “EFFECTIVE IMMEDIATELY” ASPECT OF ENFORCEMENT ORDER

One may challenge the “effective immediately” aspect of an enforcement order by moving to set it aside on the ground that the order is “not based on adequate evidence but on mere suspicion, unfounded allegations, or error.” 10 C.F.R. § 2.202(c)(2)(i). The motion must “state with particularity the reasons why the order is not based on adequate evidence and must be accompanied by affidavits or other evidence relied on.” *Id.*

ENFORCEMENT ACTIONS: IMMEDIATE EFFECTIVENESS REVIEW (TWO-PART TEST APPLYING “ADEQUATE EVIDENCE” STANDARD)

When an immediately effective enforcement order is challenged, the NRC Staff must satisfy a two-part test: it must demonstrate that adequate evidence supports a conclusion that (1) the licensee violated a Commission requirement (10 C.F.R. § 2.202(a)(1)), *and* (2) the violation was “willful,” *or* the violation poses a risk to “the public health, safety, or interest” that requires immediate action (*id.* § 2.202(a)(5)). *See also Safety Light Corp.* (Bloomsburg, Pennsylvania Site), LBP-05-2, 61 NRC 53, 61 (2005) (citing 10 C.F.R. § 2.202(a)(1), (a)(5)).

**ENFORCEMENT ACTIONS: IMMEDIATE EFFECTIVENESS
REVIEW (“ADEQUATE EVIDENCE” STANDARD)**

The “adequate evidence” standard is not onerous. It consists of more than uncorroborated suspicion or accusation, but it does not rise to the level of preponderance of the evidence. Adequate evidence exists “when the facts and circumstances within the NRC Staff’s knowledge, or which it has reasonably trustworthy information, are sufficient to warrant a person of reasonable caution to believe that the charges specified in the order are true.” 57 Fed. Reg. 20,194, 20,196 (May 12, 1992).

**ENFORCEMENT ACTIONS: IMMEDIATE EFFECTIVENESS
REVIEW (MEANING OF “WILLFUL” VIOLATION, 10 C.F.R. § 2.202)**

A licensee willfully violates a Commission requirement within the meaning of section 2.202 if, regardless of culpable purpose, it: (1) intentionally performs an act that it knows is prohibited (willful commission), or intentionally fails to perform an act that it knows is required (willful omission); or (2) engages in conduct that may be characterized as careless disregard of requirements that results in a violation of such requirements.

**MEMORANDUM AND ORDER
(Granting Motion to Set Aside the Immediate Effectiveness)**

Before the Board is Joseph Shea’s September 22, 2020 motion to set aside the immediate effectiveness of the Nuclear Regulatory Commission (NRC) Office of Enforcement’s Order banning Mr. Shea from NRC-licensed activities.¹ For the reasons set forth below, the Board grants the motion.

I. BACKGROUND

The Tennessee Valley Authority (TVA) holds multiple licenses issued by

¹ Joseph Shea’s Motion to Set Aside the Immediate Effectiveness of an Order Banning Him from Engaging in NRC-Licensed Activities, Answer, and Request for Hearing (Sept. 22, 2020) [hereinafter Shea’s Motion]. Mr. Shea also filed a Motion for Leave to Reply. The Board grants Mr. Shea’s Motion for Leave to Reply. *See* Joseph Shea’s Motion for Leave to Reply to the NRC Staff Answer (Oct. 5, 2020) [hereinafter Shea’s Reply].

the NRC pursuant to Part 50 of Title 10 of the Code of Federal Regulations.² These licenses authorize the operation of TVA's nuclear facilities in accordance with the conditions specified in the individual licenses and the Commission's regulations. Mr. Shea was employed as Vice President of Nuclear Technology Innovation at TVA until August 24, 2020.³ When the events that gave rise to the Enforcement Order took place, Mr. Shea was serving as TVA's Vice President of Regulatory Affairs and Support Services.⁴ He is currently in a Rotational Management Development position reporting to TVA's Chief Operating Officer and, in this capacity, has no interaction with TVA's NRC-licensed activities.⁵

From April 2019 until January 2020, the NRC Office of Investigations (OI) conducted an investigation into whether Mr. Shea knowingly terminated a TVA employee (Beth Wetzel) for engaging in protected activity, which would be a deliberate misconduct violation. The OI concluded that Mr. Shea placed Ms. Wetzel on administrative leave and subsequently terminated her employment with TVA, in part, because she engaged in a protected activity (raising concerns about a chilled work environment).⁶ By these actions, the NRC Staff (Staff) alleges, Mr. Shea engaged in deliberate misconduct (contrary to 10 C.F.R. § 50.5(a)(1)), which caused TVA to violate the NRC's Employee Protection Rule (contrary to 10 C.F.R. § 50.7).

While Mr. Shea was the Vice President of Regulatory Affairs at TVA, Ms. Wetzel was the Manager of Emerging Regulatory Issues and reported to Erin Henderson, who was the Director of Corporate Nuclear Licensing (CNL) and reported to Mr. Shea.⁷ On March 9, 2018, Ms. Henderson filed a complaint with Mr. Shea in which she accused five TVA employees of "harassment."⁸ Ms. Wetzel was one of the employees whom Ms. Henderson accused of harassment.⁹ Ms. Wetzel, in an email to Mr. Shea concerning her travel expenses, expressed her own concerns with Ms. Henderson:

I know that Erin has used HR to investigate people, reported people to ECP, threatened to have people for cause drug tested, pulled badging gate records and probably a lot more actions that I'm not aware of. She has demonstrated a long-

² Order Prohibiting Involvement in NRC-Licensed Activities Immediately Effective (Aug. 24, 2020) (ADAMS Accession No. ML20219A676) [hereinafter Enforcement Order].

³ *Id.*

⁴ Shea's Motion at 6.

⁵ *Id.*, attach., Aff. of Joseph Shea (Sept. 22, 2020).

⁶ Enforcement Order at 2.

⁷ NRC Staff Answer to Motion to Set Aside the Immediate Effectiveness of the Order and Answer to the Request for a Hearing (Sept. 28, 2020) at 7 [hereinafter Staff's Answer]; Tr. at 85 (Kirkwood).

⁸ Staff's Answer at 6.

⁹ *Id.*

standing pattern of using TVA processes as punitive and retaliatory tools. Based on the lack of detail in her “NEI Loanee Confirmation 2018” document, I anticipate her using my travel vouchers as an investigative tool.¹⁰

The Staff seeks to characterize Ms. Wetzel’s complaint detailing Ms. Henderson’s alleged retaliatory harassment as the protected activity that resulted in her termination.¹¹

After Mr. Shea received this complaint from Ms. Wetzel, he consulted with the TVA Executive Review Board (ERB), whose purpose is to ensure personnel action is consistent with company practices, and is not based on retaliation for protected activities.¹² The ERB concluded Ms. Wetzel could be terminated for non-discriminatory reasons.¹³ At the time of Ms. Wetzel’s email, the TVA Office of General Counsel (OGC) was investigating a different allegation concerning Ms. Wetzel. After Mr. Shea forwarded the email to the OGC, it separately concluded that Ms. Wetzel’s “pattern of making base[less] assertions of unethical behavior . . . constituted . . . violations of TVA’s ethical policy.”¹⁴ Mr. Shea subsequently caused Ms. Wetzel’s employment to be terminated.

Based on this series of events, on August 24, 2020, the Staff issued an order, effective immediately, banning Mr. Shea from involvement in NRC-licensed activities for five years.¹⁵ The Staff made the Enforcement Order “immediately effective” because of “the significance of the underlying issues, Joseph Shea’s position within TVA that has a very broad sphere of influence, and the deliberate nature of the actions.”¹⁶ The Enforcement Order also stated that “the NRC lacks the requisite reasonable assurance that licensed activities can be conducted in compliance with the Commission’s requirements and that the health and safety of the public will be protected if Mr. Shea were permitted at this time to be involved in NRC-licensed activities.”¹⁷

On September 22, 2020, Mr. Shea filed a response to the Enforcement Order, both requesting a hearing on whether the Enforcement Order should be sustained, and moving to set aside the Enforcement Order’s immediate effectiveness.¹⁸ Mr. Shea argues the Staff has failed to meet its burden to provide

¹⁰ Staff’s Answer, Report of Investigation (ROI), Ex. 11, Emails between Shea and Wetzel, dated May 7 and 14, 2018 at 14.

¹¹ Staff’s Answer at 7-8.

¹² Shea’s Motion at 12; Tr. at 74 (Walsh).

¹³ Shea’s Motion at 13.

¹⁴ See Staff’s Answer, ROI, Ex. 30, Interview of Joseph Shea at 29, 31; Tr. at 111-12 (Walsh).

¹⁵ Enforcement Order at 1, 4.

¹⁶ *Id.* at 3.

¹⁷ *Id.*

¹⁸ Shea’s Motion at 1.

adequate evidence of deliberate misconduct and that his due process rights have been violated.¹⁹ On September 28, 2020, the Staff submitted an answer to Mr. Shea's Motion to set aside the Enforcement Order's immediate effectiveness.²⁰ The Staff argues it presented adequate evidence of Mr. Shea's deliberate misconduct by showing his awareness of both the regulations and his awareness of Ms. Wetzel's involvement in protected activities.²¹

An Initial Pre-Hearing Conference was held telephonically on September 30, 2020.²² At the prehearing conference, Mr. Shea requested, and was granted, the opportunity to file a response to the Staff's Answer. On October 5, 2020, Mr. Shea filed a response²³ and on October 13, 2020 the Staff replied to Mr. Shea's response.²⁴

At the initial pre-hearing conference, the Staff and Mr. Shea agreed to bifurcate this proceeding with the first phase addressing the motion to set aside the immediate effectiveness of the Enforcement Order, and the second phase a Subpart G hearing that will address whether the Enforcement Order should be sustained. The Subpart G hearing will be held at a later date.²⁵

II. LEGAL STANDARDS

A. NRC Enforcement Authority

Under 10 C.F.R. § 2.202, the Commission may issue an order to a licensee or to an individual subject to NRC jurisdiction. Specifically, pursuant to 10 C.F.R. § 2.202(a)(5), the NRC is authorized to issue immediately effective enforcement orders if it "finds that the public health, safety, or interest so requires or that the violation or conduct causing the violation is willful."²⁶ When the immediate effectiveness of an order has been challenged, "[t]he NRC staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds

¹⁹ *Id.* at 4, 15, 18, 23.

²⁰ NRC Staff Answer to Motion to Set Aside the Immediate Effectiveness of the Order and Answer to the Request for a Hearing (Sept. 28, 2020) [hereinafter Staff's Answer].

²¹ *Id.* at 8-10.

²² Licensing Board Order (Scheduling Initial Prehearing Teleconference) (Sept. 29, 2020) at 2 (unpublished).

²³ Shea's Reply at 1-2.

²⁴ NRC Staff Reply to Mr. Shea's Motion for Leave to Respond and Mr. Shea's Response to NRC Staff Answer (Oct. 13, 2020) [hereinafter Staff Reply to Shea's Reply].

²⁵ Tr. at 1-43. The Board notes that its determination today regarding the adequacy of the evidence presented for the immediate effectiveness determination is separate from, and has no bearing on, a future Board decision whether the Enforcement Order should be sustained.

²⁶ 10 C.F.R. § 2.202(a)(5).

for the immediately effective order and immediate effectiveness is warranted.”²⁷ Application of this evidentiary standard in the context of immediately effective orders “strikes a reasonable balance between the Commission’s ability to protect the public health, safety, or interest on the basis of reasonably trustworthy information while still providing affected parties with a measure of protection against arbitrary enforcement action by the Commission.”²⁸

B. Burden of Proof for Immediately Effective Orders

In response to an immediately effective order, a licensee or any other person adversely affected may move the presiding officer to set aside the immediate effectiveness of the order²⁹ and may demand a hearing on the merits of the order.³⁰ In a motion to set aside the immediate effectiveness of the order, an alleged wrongdoer bears the burden of going forward with evidence that the order is “not based on adequate evidence but on mere suspicion, unfounded allegations, or error.”³¹ Moreover, the motion “must state with particularity the reasons why the order is not based on adequate evidence and must be accompanied by affidavits or other evidence relied on.”³²

Ultimately, however, the Staff bears the burden of persuasion to show that the order is based on adequate evidence.³³ When an immediate effectiveness determination is challenged, “the [NRC S]taff must satisfy a two-part test: It must demonstrate that adequate evidence — i.e., reliable, probative, and substantial evidence — supports a conclusion that (1) the [alleged wrongdoer] violated a Commission requirement, and (2) the violation was ‘willful,’ or the violation poses a risk to ‘the public health, safety, or interest’ that requires immediate action.”³⁴

²⁷ *Id.* § 2.202(c)(2)(vi); see *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 301-02 (1994) (comparing “adequate evidence” to the probable cause standard).

²⁸ *Advanced Med. Sys.*, CLI-94-6, 39 NRC at 301-02 (quoting Revisions to Procedures to Issue Orders: Challenges to Orders That Are Made Immediately Effective, 57 Fed. Reg. 20,194, 20,196 (May 12, 1992)).

²⁹ 10 C.F.R. § 2.202(a)(3), (c)(2)(i).

³⁰ *Id.* § 2.202(c).

³¹ *Id.* § 2.202(c)(2)(i).

³² *Id.*

³³ *Id.* § 2.202(c)(2)(vi).

³⁴ *Safety Light Corp.* (Bloomsburg, Pennsylvania Site), LBP-05-2, 61 NRC 53, 61 (2005) (citing 10 C.F.R. § 2.202(a)(1), (a)(5)). See Hearings on Challenges to the Immediate Effectiveness of Orders, 80 Fed. Reg. 63,409, 63,411 (Oct. 20, 2015). The Commission quoted Safety Light as the two-part test that must be met by the Staff.

Adequate evidence is not an onerous burden, but merely requires a showing that the order is based on more than “mere suspicion, unfounded allegations, or error.”³⁵ The Commission likens the adequate evidence standard to one of probable cause.³⁶ Because probable cause “deals with probabilities and depends on the totality of the circumstances,”³⁷ it is “a fluid concept” that is “not readily, or even usefully, reduced to a neat set of legal rules.”³⁸ It “requires only a probability or substantial chance of criminal activity, not an actual showing of such activity.”³⁹ Probable cause “is not a high bar.”⁴⁰

C. Deliberate Misconduct

The Staff alleges Mr. Shea’s actions violated 10 C.F.R. § 50.5, “Deliberate Misconduct,” and caused TVA to violate 10 C.F.R. § 50.7, “Employee Protection”⁴¹ when he terminated Ms. Wetzel. At this juncture, the Board must answer the limited question of whether the Staff provided adequate evidence of Mr. Shea’s deliberate misconduct, in contravention of 10 C.F.R. § 50.5.

When the Commission promulgated the deliberate misconduct rule in 1991, it envisioned that deliberate misconduct would only be found in “a very few significant or egregious cases[.]”⁴² Deliberate misconduct within the meaning of 10 C.F.R. § 50.5 is more than “careless disregard” or “deliberate ignorance.”⁴³ Instead, it requires “an intentional act or omission” that the person knows would cause a licensee to be in violation of any rule.⁴⁴ Also in that 1991 rulemaking, the Commission explained that “[a]n individual acting in this manner has the

³⁵ 10 C.F.R. § 2.202(c)(2)(i).

³⁶ Probable cause exists where “the facts and circumstances within [the arresting officers’] knowledge and of which they had reasonably trustworthy information [are] sufficient in themselves to warrant a man of reasonable caution in the belief that [an offense has been or is being committed].” *Carroll v. United States*, 267 U.S. 132 (1925). Adequate evidence, as defined by the Commission, is found when “facts and circumstances within the NRC Staff’s knowledge, of which it has reasonably trustworthy information, are sufficient to warrant a person of reasonable caution to believe that the charges specified in the order are true and that the order is necessary to protect the public health, safety or interest.” 57 Fed. Reg. at 20,196; *see Advanced Med. Sys.*, CLI-94-6, 39 NRC at 301.

³⁷ *Maryland v. Pringle*, 540 U.S. 366, 370 (2003).

³⁸ *Illinois v. Gates*, 462 U.S. 213, 232 (1983).

³⁹ *Id.* at 243-44 n.13.

⁴⁰ *Kaley v. United States*, 571 U.S. 320, 338 (2014).

⁴¹ Enforcement Order at 2.

⁴² Revisions to Procedures to Issue Orders; Deliberate Misconduct by Unlicensed Persons, 56 Fed. Reg. 40,664, 40,670, 40,675 (Aug. 15, 1991).

⁴³ Hearings on Challenges to the Immediate Effectiveness of Orders, 80 Fed. Reg. 63,409, 63,409 (Oct 20, 2015).

⁴⁴ 10 C.F.R. § 50.5(c).

requisite intent to act in a wrongful manner”⁴⁵ and that it “is necessary that the person recognize that the action was improper.”⁴⁶ Indeed, the Commission stated the range of actions that would subject an individual to action under the deliberate misconduct rule “does not differ significantly from the range of actions that might subject the individual to criminal prosecution.”⁴⁷

Not only must the element of “actual knowledge” be present,⁴⁸ but a 10 C.F.R. § 50.5 violation requires a showing that it was deliberate. Therefore, insofar as an immediately effective order is based on deliberate misconduct,⁴⁹ the Staff must also show adequate evidence of intent to act in a wrongful manner⁵⁰ to satisfy the first requirement of the Commission’s two-part test.

In other words, to uphold the immediate effectiveness of a 10 C.F.R. § 50.5 violation, the Staff must present adequate evidence that the alleged wrongdoer (1) knowingly (2) engaged in deliberate misconduct.⁵¹ This “knowingly” requirement needed to support an immediately effective order is to be distinguished from mere “willfulness,” which can be established by showing merely an act of careless disregard. In fact, the NRC’s own Enforcement Policy states: “A showing of willfulness is insufficient because a willful violation is defined “as one that involves either a deliberate violation of NRC requirements or careless disregard of NRC requirements,”⁵² and does not require a demonstration that the violation was knowing, as is required in 10 C.F.R. § 50.5. Further, adequate evidence of an “intentional act or omission” that causes a Commission violation is insufficient to demonstrate adequate evidence of a 10 C.F.R. § 50.5 violation if the Staff does not also show that the alleged wrongdoer “knowingly” engaged

⁴⁵ *Id.* at 40,679.

⁴⁶ *Id.* at 40,681; *see id.* (stating “it would be an erroneous reading of the final rule on deliberate misconduct to conclude that conscientious people may be subject to personal liability for mistakes. The Commission realizes that people may make mistakes while acting in good faith. Enforcement actions directly against individuals are not to be used for activities caused by merely negligent conduct. These persons should have no fear of individual liability under this regulation, as the rule requires that there be deliberate misconduct before the rule’s sanctions may be imposed.”).

⁴⁷ *Id.* at 40,675. In this regard, the Supreme Court has implied that probable cause of a specific intent crime requires evidence of intent. *See Dist. of Columbia v. Wesby*, 138 S. Ct. 577, 586-88 (2018).

⁴⁸ *David Geisen*, LBP-09-24, 70 NRC 676, 701 (2009).

⁴⁹ Policy and Procedure for Enforcement Actions; Deliberate Misconduct Rule, 63 Fed. Reg. 1982, 1984 (1998).

⁵⁰ Staff Guidance emphasizes the difficulty in establishing intent for a 10 C.F.R. § 50.5 violation by stating that determining “the state of mind and intent of the individual” for a deliberate misconduct violation may “be difficult to prove.” SECY-02-0166, Policy Options and Recommendations for Revising the NRC’s Process for Handling Discrimination Issues, at 92 (Sept. 2002) (ADAMS Accession No. ML022120479).

⁵¹ 10 C.F.R. § 50.5(a), (a)(1).

⁵² NRC Enforcement Policy at 84 (Jan. 15, 2020) (ADAMS Accession No. ML19352E921).

in deliberate misconduct. Knowledge of a rule is not the same as knowledge that one is engaging in conduct contrary to that rule.⁵³

III. ANALYSIS

For the reasons explained below, we grant Mr. Shea's motion to set aside the immediate effectiveness of the Enforcement Order because the Staff failed to meet the first requirement of the *two-part* test⁵⁴ — that there must be adequate evidence of an intentional violation of a Commission requirement.

Because the alleged violation is deliberate misconduct, the Staff must provide adequate evidence that Mr. Shea “knew” and had “actual knowledge”⁵⁵ that his actions would cause TVA to violate 10 C.F.R. § 50.7. Stated otherwise, “intent is the touchstone.”⁵⁶ More specifically, a showing of deliberate misconduct requires adequate evidence — “reliable, probative, and substantial evidence”⁵⁷ — of “the state of mind and intent of [Mr. Shea],”⁵⁸ of “the requisite intent [of Mr. Shea] to act in a wrongful manner,”⁵⁹ and that “[Mr. Shea] recognize[d] that [his] action was improper.”⁶⁰ Because the range of actions that would penalize an individual for violating the deliberate misconduct rule “does not differ significantly from the range of actions that might subject the individual to criminal prosecution,”⁶¹ the Staff must show the Enforcement Order is based on more than “mere suspicion, unfounded allegations, or error.”⁶²

We emphasize that resolution of the instant motion comes down to one central question, as articulated by the Staff, “whether there is adequate evidence to conclude that Mr. Shea, with the knowledge that his actions were prohibited, deliberately terminated Ms. Wetzel because she expressed her concerns on numerous occasions, that there was a chilled work environment . . . at TVA.”⁶³

⁵³ See *Bryan v. United States*, 524 U.S. 184, 184 (1998) (holding a defendant need not be aware of a specific law violated but must only have knowledge that his/her actions were unlawful).

⁵⁴ See *supra* note 34 and accompanying text.

⁵⁵ *Geisen*, LBP-09-24, 70 NRC at 701.

⁵⁶ Tr. at 118 (Walsh).

⁵⁷ *Safety Light Corp.*, LBP-05-2, 61 NRC at 61.

⁵⁸ 56 Fed. Reg. at 40,679.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.* at 40,675.

⁶² 10 C.F.R. § 2.202(c)(2)(i).

⁶³ Tr. at 84 (Kirkwood); Tr. at 119 (Walsh) (“The key here is Joe Shea’s intent, and whether or not he knew what he was doing was wrong.”).

The key issue before us, then, is “about *Mr. Shea’s actions* in terminating Ms. Wetzel for her protected activity,”⁶⁴ and nothing else.⁶⁵

While the Staff concedes it does not have direct evidence of Mr. Shea’s intent, it maintains that it provided circumstantial evidence of Mr. Shea’s intent sufficient to infer the requisite intent.⁶⁶

The Staff’s circumstantial evidence largely focuses on Ms. Wetzel’s actions and whether her actions constituted protected activity.⁶⁷ The Staff describes a convoluted history of allegations between employees and supervisors,⁶⁸ involving opaque statements regarding chilled work environments, and several examples of protected activity,⁶⁹ but it fails to establish the requisite connection between these allegations and Mr. Shea’s decision to terminate Ms. Wetzel.⁷⁰

⁶⁴ Tr. at 85 (Kirkwood) (emphasis added).

⁶⁵ Whether TVA, as a licensee, violated 10 C.F.R. § 50.7 is beyond the scope of this proceeding. NRC issued a separate enforcement order to TVA for a 10 C.F.R. § 50.7 violation with regards to Ms. Wetzel’s termination. See Notice of Violation and Proposed Imposition of Civil Penalty (Aug. 24, 2020) (ADAMS Accession No. ML20232B803).

⁶⁶ Staff Reply to Shea’s Reply at 12-13.

⁶⁷ Staff’s Answer at 7-8; Staff Reply to Shea’s Reply at 15-16 (summarizing Ms. Wetzel’s protected activities and assuming Mr. Shea’s “awareness” of those activities means he deliberately terminated her for those specific activities, without supporting evidence). Section 50.7 does not require a showing of intent or deliberate misconduct, but it puts a lower evidentiary burden on the Staff to show, through adequate evidence, the elements of a *prima facie* employee discrimination case (1) that the individual engaged in protected activity, (2) that an adverse employment action was taken, and (3) that the individual’s protected activity was a contributing factor in the adverse employment action. Further, the standards for 10 C.F.R. § 50.7 permit the Staff to infer whether a protected activity is a contributing factor to an adverse personnel action if it shows a reasonable person could infer that protected activities influenced the unfavorable personnel action to some degree. *Id.* at 197. Unlike the adequate evidence required in 10 C.F.R. § 50.5, to establish adequate evidence for a violation of 10 C.F.R. § 50.7, the Staff need not show any evidence of intent, “actual knowledge,” or that the alleged wrongdoer knew his actions would cause a licensee to violate a Commission regulation. Rather, the Staff is permitted to draw inferences based on the “reasonable person” standard. The standards for 10 C.F.R. § 50.5 do not permit “reasonable” inferences, but require actual knowledge, and there is no burden on the alleged wrongdoer to refute anything with “clear and convincing evidence.” In sum, the two regulations require significantly different types of evidence, such that it would constitute clear error to equate the lower burden of a 10 C.F.R. § 50.7 (Employee Protection) violation with a 10 C.F.R. § 50.5 (Deliberate Misconduct) violation.

⁶⁸ See Staff’s Answer at 7. For example, the Staff stated that “Ms. Wetzel engaged in protected activity when she participated in a DOL proceeding, such that statements she had made were reported in Ms. Connor’s DOL complaint, which also were identified in Ms. Henderson’s complaint.” *Id.* This is convoluted and the Board cannot make a determination of who said, or submitted, what in this statement.

⁶⁹ *Id.*

⁷⁰ The Staff incorrectly phrases the issue here as whether the “Staff has shown adequate evidence such that a person of reasonable caution would believe that Mr. Shea had in fact terminated Ms.

(Continued)

Based only on the record before us now, we find that the Staff has not presented adequate circumstantial evidence of deliberate misconduct to warrant the immediate effectiveness of the Enforcement Order.⁷¹

Mr. Shea satisfied the initial burden of going forward by presenting evidence he had non-discriminatory reasons to terminate Ms. Wetzel because both the ERB and OGC indicated it was the proper course of action.⁷² Although the Staff has asserted that the ERB and OGC reports were merely “window dressing” to “cover” Mr. Shea’s deliberate misconduct,⁷³ it has not presented adequate evidence to meet its burden of persuasion that these reports served as cover for Mr. Shea’s intent.⁷⁴ At this stage, the Staff has presented nothing more than “mere suspicion [and] unfounded allegations.”⁷⁵ In fact, the Staff admitted so by stating it “will show how that [OGC] investigation was not at all independent[.]”⁷⁶ An admission that the Staff “will” do something implies it has not yet done so. As such, the Staff has not provided adequate evidence to justify the accusation that the ERB and OGC acted as cover.

Wetzel based, in part, on her protected activity.” Staff Reply to Shea’s Reply at 16. The Staff must show through adequate evidence that Mr. Shea had “actual knowledge” that his actions would cause TVA to violate 10 C.F.R. § 50.7. The question is not whether “he should have known” or whether a “reasonable person” would have known. *See Geisen*, LBP-09-24, 70 NRC at 701.

⁷¹ Whether TVA, as a licensee, violated 10 C.F.R. § 50.7 is beyond the scope of this proceeding. NRC issued a separate enforcement order to TVA for a 10 C.F.R. § 50.7 violation with regards to Ms. Wetzel’s termination. *See* Notice of Violation and Proposed Imposition of Civil Penalty (Aug. 24, 2020) (ADAMS Accession No. ML20232B803).

⁷² Staff’s Answer, ROI, Ex. 7, Review of TVA’s ECP Investigation at 3 (stating a legitimate business reason existed for each of the actions taken by CNL management in addressing performance issues with the “concerned individual” and that TVA policy and procedure also governed the actions taken by management); *see* Echavarria Aff. ¶ 13 (stating that in a questionnaire to the ERB members asking “[d]oes it appear the individual’s involvement in a protected activity contributed in any way to the proposed recommendation?” The answer is marked “No.”); *see also* Shea’s Motion at 11 (“On August 30, 2018, OGC recommended that [Ms. Wetzel] be separated from the company, either by a no-fault separation agreement or termination, because it found that [Ms. Wetzel]’s pattern of behaviors towards Ms. Henderson as described above violated multiple TVA policies and federal law.” (citing Ex. 14, TVA OGC Report)). Exhibit 14 should contain the “TVA OGC Supplemental Report,” but it is not included in the excerpted pages provided by the Staff in its response, although the Staff stated it provided the entire report. Tr. at 100 (Kirkwood); Shea’s Motion at 11 n.37.

⁷³ Tr. at 111 (Walsh) (stating that the Staff’s categorization that the OGC investigation and recommendation was a “cover” or “window dressing” is “clear admission by the Staff that [its] action is based on mere suspicion and not on evidence”).

⁷⁴ In addition, Mr. Shea stated, in reference to the dispute between Ms. Henderson and Ms. Wetzel that he wanted “the organization’s support to draw equally well-documented analysis and conclusions, whatever they might be[.]” Shea’s Motion, attach. 4 at 3.

⁷⁵ 10 C.F.R. § 2.202(c)(2)(i).

⁷⁶ Tr. at 87-88 (Kirkwood).

While the Staff purports to discredit the input of the ERB and OGC as “mere window dressing” for Mr. Shea’s actions,⁷⁷ what the Staff is effectively asking of us is to weigh the evidence and entirely discredit contrary statements of the ERB and OGC. As the Staff itself stated, such a weighing of the evidence is inappropriate at this stage.⁷⁸ As such, we will not weigh the evidence and discredit both reports, but take the contents at face value. Nonetheless, in addressing this argument, the Staff points to *no evidence* that the ERB or OGC acted as “cover” or “mere window-dressing” for Mr. Shea’s actions. While that may be a legitimate line of inquiry at an evidentiary hearing,⁷⁹ there is no evidence⁸⁰ before us to suggest either the ERB or OGC did not fulfill its professional responsibilities and act truthfully. In fact, as argued by Mr. Shea,⁸¹ these arguments amount to “mere suspicion [and] unfounded allegations.”⁸²

The relevant intents of either the ERB or OGC have no bearing on Mr. Shea’s intent in terminating Ms. Wetzel. If either body had the requisite intent to act in a wrongful manner (for which we have no evidence before us) it would still not be indicative of Mr. Shea’s intent. As noted, the only relevant inquiry is whether Mr. Shea engaged in deliberate misconduct, not whether the ERB or OGC did.⁸³

The Staff suggests Mr. Shea’s reading of the deliberate misconduct regulation would result in an impossible task for the Staff. Specifically, the Staff asserts it “could never establish deliberate misconduct so long as the [alleged wrongdoer] denied the violation.”⁸⁴ But it is not Mr. Shea’s denial of wrongdoing on which we rely here. Rather, we reviewed the totality of the circumstances and concluded that the Staff has not provided any evidence to support its inference

⁷⁷ Tr. at 104 (Kirkwood) (“In terms of the ultimate question of whether or not the OGC Report caused Mr. Shea to think that the action was acceptable, I think that’s better left for the merits, one, but two, I think that we will show that Mr. Shea was effectively using these various processes as a cover for his deliberate activities.”); Tr. at 109 (Kirkwood).

⁷⁸ Staff Reply to Shea’s Reply at 6.

⁷⁹ The Staff may rely on additional evidence not cited in the Enforcement Order, but it may not issue the order based merely on the hope that it will thereafter find the necessary quantum of evidence to sustain the order’s immediate effectiveness. *See Advanced Med. Sys.*, CLI-94-6, 39 NRC at 285.

⁸⁰ As stated above, the Staff admitted it has not provided evidence that the OGC investigation was not independent, but “will” do so. Tr. at 87-88 (Kirkwood).

⁸¹ Tr. at 112-13 (Walsh).

⁸² 10 C.F.R. § 2.202(c)(2)(vi). The Supreme Court stated, in the context of prosecutorial misconduct, that “[d]eliberate misconduct generally must be inferred from the objective evidence.” *Oregon v. Kennedy*, 456 U.S. 667, 690 n.29 (1982). A subjective inference with no supporting evidence that the ERB or OGC are not independent cannot constitute objective evidence.

⁸³ Tr. at 84 (Kirkwood).

⁸⁴ Staff Reply to Shea’s Reply at 12 (“Under the standard Mr. Shea asserts, the NRC Staff could never establish deliberate misconduct so long as the individual denied the violation.”).

that the ERB and OGC acted as “cover” to hide deliberate misconduct by Mr. Shea.⁸⁵ Without such evidence, the ERB and OGC conclusions support Mr. Shea’s assertions that he believed he was taking the proper action.⁸⁶ Mr. Shea, like the Staff, can rely on circumstantial evidence to support his position.⁸⁷ In any event, there is significantly more evidence before us indicating a lack of Mr. Shea’s intent than just his denial of wrongdoing.

In sum, the Staff has not proffered adequate evidence to support a conclusion that Mr. Shea violated 10 C.F.R. § 50.5,⁸⁸ such that this Board could infer that Mr. Shea knew that by terminating Ms. Wetzel, he would cause TVA to violate 10 C.F.R. § 50.7.⁸⁹

IV. CONCLUSION

We conclude that the Staff has failed to meet its burden to provide adequate evidence of a 10 C.F.R. § 50.5 violation by Mr. Shea. Accordingly, Mr. Shea’s motion to set aside the immediate effectiveness of the Enforcement Order is granted. This ruling does not stay the immediate effectiveness of the Enforcement Order⁹⁰ and it “will not be effective” until this matter is addressed by the Commission.⁹¹ As required by 10 C.F.R. § 2.202(c)(2)(viii), the Board refers this ruling to the Commission.⁹²

⁸⁵ See *supra* notes 77-82 and accompanying text.

⁸⁶ Tr. at 55-56 (Walsh).

⁸⁷ Staff Reply to Shea’s Reply at 12 (“It is well established that evidence of a deliberate violation need not rely on a confession, but rather can be established through circumstantial evidence.”).

⁸⁸ *Safety Light Corp.*, LBP-05-2, 61 NRC at 61 (citing 10 C.F.R. § 2.202(a)(1), (a)(5)).

⁸⁹ Mr. Shea also asserted that this immediately effective order is violative of due process. We reject that claim in its entirety. When the Commission published its final rule on immediately effective orders, it acknowledged that “an immediately effective order may cause a person to suffer loss of employment while the order is being adjudicated” but recognized that the effects of health and safety violations are paramount over an individual’s right of employment. The rule sets forth a process by which an individual may seek to set aside the immediate effectiveness of an order whose immediate effect was improperly imposed, and Mr. Shea has availed himself of that process here. Revisions to Procedures to Issue Orders: Challenges to Orders that are Made Immediately Effective, 57 Fed. Reg. 20,194, 20,195 (May 12, 1992).

⁹⁰ 10 C.F.R. § 2.202(c)(2)(vii).

⁹¹ *Id.* § 2.202(c)(2)(viii).

⁹² *Id.*

It is so ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Michael M. Gibson
ADMINISTRATIVE JUDGE

Dr. Gary S. Arnold
ADMINISTRATIVE JUDGE

Rockville, Maryland
November 3, 2020

Judge Froehlich, Dissenting

I write today to disassociate myself from the majority opinion. I disagree with the analysis and the legal standard that underlie the majority's conclusion. I believe that if the proper legal standard were applied, the Board would find that the NRC Staff has met its burden of presenting adequate evidence to support the immediate effectiveness of the Enforcement Order (Order).

For an order to be effective immediately "the NRC staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds for the immediately effective order and immediate effectiveness is warranted."⁹³ The Commission's regulations provide that the Commission may, upon a finding that the public health, safety, or interest so requires or that the violation or conduct causing the violation is willful, make an order immediately effective.⁹⁴ When an immediate effectiveness determination is challenged, the NRC Staff "must satisfy a two-part test: It must demonstrate that adequate evidence — i.e., reliable, probative, and substantial evidence — supports a conclusion that (1) the [alleged wrongdoer] violated a Commission requirement, and (2) the violation was 'willful,' or the violation poses a risk to 'the public health, safety, or interest' that requires immediate action."⁹⁵

The majority opinion commits fundamental legal error when it expands the showing that the NRC Staff must make. In the context of a charge that Mr. Shea violated 10 C.F.R. § 50.5, the NRC Staff must only allege "an intentional act or omission that the person knows would cause a licensee to be in violation of any rule or regulation or other NRC requirement."⁹⁶ The majority proclaims, however, that the Staff must provide adequate evidence that Mr. Shea "knew" and had "actual knowledge" that his violations would cause TVA to violate 10 C.F.R. § 50.7.⁹⁷

The majority would require that the NRC Staff present evidence of Mr. Shea's state of mind and his intent and that he recognized his actions were improper.⁹⁸ This is not the burden under the Commission's regulations. The issue is *not* what went on in Mr. Shea's head, but rather whether there is "adequate evidence"

⁹³ 10 C.F.R. § 2.202(c)(2)(vi); see *Advanced Medical Systems*, CLI-94-6, 39 NRC 285, 301-02 (1994) (comparing "adequate evidence" to the probable cause standard).

⁹⁴ 10 C.F.R. § 2.202(a)(5).

⁹⁵ *Safety Light*, LBP-05-2, 61 NRC at 61 (citing 10 C.F.R. § 2.202(a)(1), (a)(5)).

⁹⁶ The Deliberate Misconduct Final Rule lists a number of deliberate misconduct violations. "Additional examples include a supervisor who discharges an employee for raising safety concerns" 56 Fed. Reg. 40,664 at 40,678, 40,680. The final rule does not require an inquiry into the supervisor's mental processes.

⁹⁷ Majority at pp. 416-17, 418, 419, 421 (references to Mr. Shea's state of mind and requisite intent).

⁹⁸ *Id.*

that supports a conclusion that (1) Mr. Shea violated a Commission requirement, and (2) the violation was ‘willful,’ or the violation poses a risk to ‘the public health, safety, or interest’ that requires immediate action.⁹⁹

Federal statutes and Commission regulations prohibit the firing of an employee for engaging in protected activity. Individuals working for NRC licensees are protected from retaliation for reporting potential violations of the Energy Reorganization Act (ERA)¹⁰⁰ or the Atomic Energy Act (AEA)¹⁰¹ to their employers or to the government. Under the ERA, employees of TVA, an NRC licensee, are protected from retaliation for engaging in protected activity.¹⁰² Federal law prohibits retaliation against employees who provide information they reasonably believe evidences violation of any law, rule, or regulation; abuse of authority, or creates a substantial and specific danger to public health and safety. Section 211 of the ERA protects employees who disclose concerns about nuclear safety or a violation of an NRC rule or regulation. The Enforcement Order charges Mr. Shea, as the Vice President of Regulatory Affairs at TVA, engaged in deliberate misconduct when he placed on paid administrative leave and later terminated Ms. Wetzel for engaging in protected activity by raising concerns about a chilled work environment.”¹⁰³ All that is required to be shown is that Mr. Shea fully understood or should have understood his responsibility to comply with the ERA and Commission regulations. No party argued that these laws and regulations were unknown to Mr. Shea.

The majority decision cites the *Safety Light* case.¹⁰⁴ That case requires that there be “adequate evidence” of a violation of a Commission requirement. In section 50.5(c), deliberate misconduct means “an intentional act or omission that the person knows: (1) [w]ould cause a licensee . . . to be in violation of any rule, regulation, or order.” Thus, a necessary part of showing adequate evidence of a violation of § 50.5 is showing (1) that a regulation was violated and (2)

⁹⁹ *Hamlin Testing Laboratories, Inc.*, 2 AEC 423, 428 (1964) (a licensee willfully violated a Commission requirement when it “knew what was required of it under the Commission’s regulations and the terms and conditions of its license, and [failed] to comply therewith”); *X-Ray Engineering Co.*, 1 AEC 553, 555 (1960). *See also* 55 Fed. Reg. 12,374, 12,375 (Apr. 3, 1990) (in *Federal Register* notice of proposal to revise regulations to address willful misconduct by unlicensed individuals, Commission states that a “violation is willful if an individual either knew that the conduct was prohibited or showed a careless disregard for whether the conduct was prohibited”).

¹⁰⁰ Energy Reorganization Act of 1974, § 211(a)(1), 42 U.S.C. § 5851(a)(1) (2018).

¹⁰¹ Atomic Energy Act of 1954, 42 U.S.C. § 2011 et seq.

¹⁰² Protected activities include notifying an employer of an alleged violation of the ERA or the AEA, testifying, assisting or participating in any other actions to carry out the purposes of the ERA or the AEA. 42 U.S.C. § 5851.

¹⁰³ Enforcement Order at 2.

¹⁰⁴ *Safety Light*, LBP-05-2, 61 NRC at 61 (2005) (citing 10 C.F.R. § 2.202(a)(1), (a)(5)).

that the violation was intentional.¹⁰⁵ What is required is that the NRC Staff be satisfied that the individual charged fully understood or should have understood his or her responsibility.¹⁰⁶ No reasonable argument can be made that Mr. Shea was not aware of the requirements of sections 50.5 and 50.7. The NRC Staff has presented “adequate evidence” that Mr. Shea intentionally terminated Ms. Wetzel, in part, because she engaged in protected activity. Adequate evidence has been submitted to show (for purposes of an immediately effective order) that the termination of Ms. Wetzel was a deliberate violation. It is ironic that the majority began its analysis of what the NRC Staff must show by stating “that there must be adequate evidence of a violation of a Commission requirement.”¹⁰⁷ They fail to recognize the fact that it is a “violation of a Commission requirement” for a licensee or one of its executives to terminate an employee for engaging in protected activities.¹⁰⁸

The majority compounds its fundamental error by prematurely weighing the evidentiary value of select portions of the TVA ERB Report and an internal TVA OGC Report. These documents and others in the case contain conflicting accounts of the advice Mr. Shea was provided, including warnings that the personnel actions he was taking were related to protected activities.¹⁰⁹ The majority opines on how these two documents, among the dozens filed, may have affected Mr. Shea’s decision-making process. The majority draws inferences that these two documents somehow show a lack of requisite intent.¹¹⁰ Not only is such an analysis completely unnecessary for purposes of determining whether an order should be made immediately effective, it is premature. The probative value of these and other exhibits is an issue to be decided in the upcoming evidentiary hearing, not at this stage of the proceedings.

The majority is critical of the NRC Staff for not presenting evidence that would address the majority’s premature conclusion that portions of the TVA-ERB Report and the TVA-OGC Report show that Mr. Shea’s actions were based on non-protected actions. The majority struggles with the significance of and the weight to be accorded to these two reports — are they “window dressing” or are they evidence of Mr. Shea’s non-retaliatory motives in terminating Ms. Wetzel? The part that these two reports played in Mr. Shea’s personnel decisions is an issue that could be addressed at the evidentiary hearing. There is no need

¹⁰⁵ The NRC Staff contends, “Retaliation in violation of 10 C.F.R. § 50.7 is, by its nature, an intentional act.” Staff Answer at 11.

¹⁰⁶ Deliberate Misconduct Rule — Final Rule, 56 Fed Reg 40,664 at 40,673.

¹⁰⁷ Majority at p. 418.

¹⁰⁸ Energy Reorganization Act of 1974, § 211(a)(1), 42 U.S.C. § 5851(a)(1) (2018).

¹⁰⁹ Exhibit 14, page 32 of 42 (“The Whistleblower Protection Act, 5 USC 2302 (2012) does apply.”), Exhibit 17, pages 34-35 (Concerns with Wetzel Adverse Employment Action).

¹¹⁰ Majority at p. 421.

for the NRC Staff to counter or rebut inferences gleaned by the majority from documents the NRC Staff included in its probable cause submission.

The sole question to be decided at this stage is whether the NRC Staff has submitted “adequate evidence” to support the immediate effectiveness of its Order. The NRC Staff has submitted the affidavits of two Special Agents, together with the Report of Investigation conducted in this matter. The Report of Investigation reflects sworn statements of more than twenty individuals, and documentary evidence from the files of the TVA and the U.S. Department of Labor. It also includes the TVA-ERB Report¹¹¹ and the TVA-OGC Report.¹¹² The Report of Investigation concluded that a preponderance of the evidence indicated deliberate misconduct.¹¹³ Among the evidence filed to show Mr. Shea knowingly engaged in unlawful employment discrimination against Ms. Wetzel include (1) a history of chilled work environment allegations in the Corporate Nuclear Licensing division while Ms. Henderson was its Director;¹¹⁴ (2) allegations of a chilled work environment made internally to the TVA Employee Concerns Program,¹¹⁵ to the NRC,¹¹⁶ and to the U.S. Department of Labor;¹¹⁷ (3) multiple statements in Ms. Henderson’s formal complaint to Mr. Shea that Ms. Wetzel (one of Ms. Henderson’s subordinates) was harassing Ms. Henderson by alleging that Ms. Henderson had created a chilled work environment;¹¹⁸ (4) the TVA-OGC Report (Slater Report) which identified Ms. Wetzel’s retaliation concerns;¹¹⁹ and (5) the TVA Executive Resources Board report which indicates Ms. Wetzel had engaged in protected activity.¹²⁰ The proximity in time between

¹¹¹ Staff’s Answer, Ex. 16.

¹¹² Staff’s Answer, Ex. 14.

¹¹³ ROI page 1 and page 49.

¹¹⁴ Staff’s Answer, attach. 2, Aff. of Ian A. Gifford ¶¶ 6, 7 (Sept. 28, 2020) [hereinafter Gifford Aff.]; Report of Investigation (ROI) at 14, 24, 42; Ex. 7, ROI; Ex. 10, ROI; Tr. at 10, 104-05, 107, 114.

¹¹⁵ Gifford Aff. ¶¶ 6, 7; Ex. 7, ROI at 11, 23. The TVA ECP had found that the “behaviors exhibited by [Ms. Henderson], including [the] perception that employees were written up after disagreeing with [Ms. Henderson], have the potential to create an work environment that is not conducive to raising safety concerns,” and that Ms. Henderson’s actions create a perception of retaliation. See Staff’s Answer, attach. 1, Aff. of Alejandro Echavarria ¶¶ 13, 17, 23 (Sept. 28, 2020) [hereinafter Echavarria Aff.]; ROI at 48; ROI, Ex.10 at 1.

¹¹⁶ Echavarria Aff. ¶¶ 12, 13; Ex. 10, ROI at 7; Gifford Aff. ¶ 7.

¹¹⁷ Echavarria Aff. ¶ 13; ROI at 48; Ex. 10, ROI at 1.

¹¹⁸ Echavarria Aff. ¶¶ 12, 13, 24; Gifford Aff. ¶ 7; ROI at 14, 22, 24, 42; Ex. 10, ROI; Staff Answer at 8-9, Tr. 95, 104-05, 107.

¹¹⁹ Echavarria Aff. ¶¶ 13, 20, 21; ROI at 32, 42-43; Ex. 20, ROI at 29; Echavarria Aff. ¶ 20; Ex.11, ROI at 13-14; Gifford Aff. ¶ 7.

¹²⁰ See Ex. 16, at 6; Echavarria Aff. ¶¶ 15-17, 20. Although the Executive Resources Board ultimately concluded Ms. Wetzel could be terminated for non-discriminatory reasons, it also acknowledged that Ms. Wetzel had engaged in protected activities.

Ms. Wetzel's engagement in protected activities and her subsequent termination is additional evidence of Mr. Shea's deliberate misconduct.¹²¹

The "adequate evidence" standard is not onerous. It consists of more than uncorroborated suspicion or accusation, but it does not rise to the level of preponderance of the evidence. Adequate evidence exists "when the facts and circumstances within the NRC staff's knowledge, of which it has reasonably trustworthy information, are sufficient to warrant a person of reasonable caution to believe that the charges specified in the order are true."¹²² Adequate evidence is not an onerous burden, but merely requires a showing that the order is based on more than "mere suspicion, unfounded allegations, or error."¹²³ It "requires only a probability or substantial chance of criminal activity, not an actual showing of such activity."¹²⁴ Probable cause "is not a high bar."¹²⁵ The NRC Staff has demonstrated the need for an immediately effective order based on violations of the ERA and Commission regulations. The NRC Staff has presented adequate evidence (in the context of a motion to set aside) that a protected activity was a contributing factor to the adverse action.¹²⁶ The NRC Staff evidence presented is not mere suspicion, unfounded allegations or error.

I am also uncomfortable with the prospective effect of the majority's decision on the TVA workplace during the pendency of this proceeding. The Enforcement Order not only found Mr. Shea's actions to be deliberate, but also found that his actions had a negative impact on TVA employees' ability to raise safety concerns out of fear of retaliation. Section 2.202 permits the Commission to issue "an order . . . to an unlicensed person who willfully causes a licensee to be in violation of Commission requirements or whose willful misconduct undermines, or calls into question, the adequate protection of the public health and safety in connection with activities regulated by the NRC under the [AEA]."¹²⁷ The Enforcement Order was made immediately effective because of the (1) sig-

¹²¹ See Order Prohibiting (Thomas Summers) Involvement In NRC-Licensed Activities (Sept. 12, 2019) at 1, 6 (finding the temporal proximity of the individual's submission of the condition report and the initiation of the adverse action . . . deemed it a discriminatory act) (ADAMS Accession No. ML19234A336).

¹²² 57 Fed. Reg. at 20,196.

¹²³ 10 C.F.R. § 2.202(c)(2)(i).

¹²⁴ *Illinois v. Gates*, 462 U.S. 213, 243-44 n.13 (1983).

¹²⁵ *Kaley v. United States*, 571 U.S. 320, 338 (2014).

¹²⁶ See Energy Reorganization Act of 1974, as amended, § 211(b)(3)(c), 42 U.S.C. § 5851(b)(3)(C) (2018); see also *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 1), CLI-04-24, 60 NRC 160, 183 (2004). A prima facie showing of a violation of the ERA must show (1) that the individual engaged in protected activity, (2) that an adverse employment action was taken, and (3) that the individual's protected activity was a contributing factor in the adverse employment action. *Id.* at 187.

¹²⁷ 56 Fed. Reg. 40,664 at 40,665.

nificance of the violation of NRC's employee protection regulations, (2) Mr. Shea's broad sphere of influence as Vice President of Nuclear Technology Innovation, (3) the deliberate nature of his misconduct,¹²⁸ and (4) the public health and safety consequences of Mr. Shea's continued involvement in NRC-licensed activities.¹²⁹ When the NRC determines that the conduct that caused a violation was willful *or* when the Commission determines that the public health, safety, or interest requires immediate action, the Commission may make orders immediately effective.¹³⁰ Making enforcement orders "immediately effective" has been an integral part of 10 C.F.R. § 2.202 since 1962, and Section 9(b) of the Administrative Procedure Act (APA), 5 U.S.C. § 558(c), expressly authorizes immediately effective orders. In this case, the NRC Staff has presented adequate evidence of the willfulness of Mr. Shea's action¹³¹ and has shown that immediate effectiveness is necessary "to protect public health and safety or to minimize danger to life or property or to protect the common defense and security."¹³² The NRC must be able to rely on TVA and its senior employees to comply with NRC requirements, including the statutory requirement¹³³ prohibiting discrimination against an employee for engaging in protected activities.

I conclude, and believe a person of "reasonable caution" would also conclude, the NRC Staff has proffered adequate evidence to support a preliminary conclusion that (1) Mr. Shea violated a Commission requirement, and (2) the violation was either "willful," or poses a risk to "the public health, safety, or interest" that requires immediate action.¹³⁴ The evidence submitted fully satisfies the requirement in 10 C.F.R. § 2.202(a)(5) for immediate effectiveness.

At the evidentiary hearing the parties will undoubtedly argue the weight to be given to the actions discussed in the majority opinion. I am confident there

¹²⁸ Deliberate misconduct, by itself, raises a significant public health and safety concern. 56 Fed. Reg. at 40,676.

¹²⁹ Enforcement Order at 3-4. "The NRC considers deliberate violations of 10 C.F.R. § 50.7 significant because of the potential that it may make others hesitant to raise safety issues for fear of retaliation." Section 4.1 of the NRC Enforcement Policy. "The Director of the [NRC] Office of Enforcement concluded that the NRC no longer has reasonable assurance that Mr. Shea would comply with the NRC's requirements and the public health and safety be protected." Gifford Aff. ¶ 9.

¹³⁰ 10 C.F.R. § 2.202(b).

¹³¹ Unlicensed persons are subject to immediate effective orders when it is "demonstrated that future control over their activities subject to the NRC's jurisdiction is deemed to be necessary or desirable to protect public health and safety or to minimize danger to life or property or to protect the common defense and security." 56 Fed. Reg. at 40,673.

¹³² 50 Fed. Reg. 12,370 at 12,371.

¹³³ Energy Reorganization Act (ERA), 42 U.S.C. § 5851, as amended by the Energy Policy Act of 2005, Pub. L. No. 109-58, August 8, 2005.

¹³⁴ *Safety Light Corp.*, LBP-05-2, 61 NRC at 61 (citing 10 C.F.R. § 2.202(a)(1), (a)(5)).

will be considerable testimony and cross-examination of witnesses as to the contents and significance of the TVA-OGC Report and the ERB Reports, as well as evidence and testimony yet to be filed. At this juncture, however, I find the NRC Staff has presented adequate evidence to justify the issuance of the immediately effective Enforcement Order for Mr. Shea's alleged violations of Section 211 of the Energy Reorganization Act and of NRC regulations.¹³⁵ At the evidentiary hearing the parties will have full opportunity to present testimony, exhibits, and other evidence to sustain or refute the merits of the August 24, 2020 Enforcement Order.

I look forward to the evidentiary hearing on the facts and circumstances that prompted the issuance of the Order. The Board's ruling on the Order's immediate effectiveness and my dissent should not be taken as prejudgment of the merits of the Orders' issuance.

William J. Froehlich
ADMINISTRATIVE JUDGE

Rockville, Maryland
November 3, 2020

¹³⁵ The Enforcement Order was issued pursuant to sections 103, 161b, 161i, 161o, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 C.F.R. § 2.202 and 10 C.F.R. § 50.5.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ronald M. Spritzer, Chairman
Nicholas G. Trikouros
Dr. Sekazi K. Mtingwa

In the Matter of

Docket No. 50-443-LA-2
(ASLBP No. 17-953-02-LA-BD01)

NEXTERA ENERGY SEABROOK, LLC
(Seabrook Station, Unit 1)

November 6, 2020

In its Initial Decision, LBP-20-9, the Board found that the license amendment request filed by NextEra Energy Seabrook, LLC (NextEra), regarding the operating license for Seabrook Unit 1, in Seabrook, New Hampshire satisfied the reasonable assurance standard and applicable regulatory requirements. However, the Board added four license conditions. With those conditions, it resolved the reformulated contention in favor of NextEra. C-10 filed a Motion to Re-Open the Record for Consideration of Supplemental Testimony Regarding License Conditions, a Motion for Leave to File Motion for Partial Reconsideration, and a Motion for Partial Reconsideration of LBP-20-9. NextEra filed answers opposing all three of C-10's motions. The Staff opposed C-10's Motion to Reopen and every revision to the license conditions posited by C-10 in its Motion for Partial Reconsideration, except that it agreed with C-10 that the phrase "significantly" should be removed from license condition e. In addition, the Staff asked the Board to increase the threshold for the engineering evaluation called for in license condition e. The Staff also suggested several non-substantive changes to the conditions. C-10 later filed a motion for leave to reply to the Staff's and NextEra's answers, accompanied by a Reply to Oppositions to Motions for Partial Reconsideration and to Reopen for Consideration of Supplemental Testimony Regarding License Conditions and Proposed Ex. INT053/INT055,

Rebuttal Supplemental Testimony of Victor E. Saouma, Ph.D. On consideration, the Board denied C-10's various motions, except that it granted leave to file C-10's Reply and Proposed Ex. INT053/INT055 to the extent they addressed two specific issues.

RULES OF PRACTICE: MOTIONS TO REOPEN

Section 2.326 of the NRC's rules of practice sets forth the requirements to reopen a closed evidentiary record. The motion must (1) be timely; (2) "address a significant safety or environmental issue[]"; and (3) "demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially." 10 C.F.R. § 2.326(a)(1)-(3). "[T]he motion must be accompanied by affidavits that set forth the factual and/or technical bases for the movant's claim" *Id.* § 2.326(b).

RULES OF PRACTICE: MOTIONS TO REOPEN

Commission precedent indicates reopening the record is an "extraordinary action" that imposes a "'deliberately heavy' burden" on a movant to meet the "high standard" of reopening the record. *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-11-2, 73 NRC 333, 338 (2011) (quoting Criteria for Reopening Records in Formal Licensing Proceedings, 51 Fed. Reg. 19,535, 19,538 (May 30, 1986)); *id.* at 338 (quoting *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC 658, 674 (2008)).

RULES OF PRACTICE: MOTIONS TO REOPEN

"[T]o meet the reopening standard . . . it is insufficient merely to point to disputed facts." *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-10, 75 NRC 479, 499 (2012).

RULES OF PRACTICE: MOTIONS TO REOPEN

The most important criterion in a motion to reopen is the second requirement, identification of a significant safety or environmental issue. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-834, 23 NRC 263, 264 (1986).

RULES OF PRACTICE: MOTIONS TO REOPEN; NEW INFORMATION; TIMELINESS

“[D]ocuments merely summarizing earlier documents or compiling preexisting, publicly available information into a single source do not render ‘new’ the summarized or compiled information.” *Vt. Yankee*, CLI-11-2, 73 NRC at 344.

RULES OF PRACTICE: MOTIONS TO REOPEN; NEW INFORMATION; TIMELINESS

To satisfy timeliness, “[t]he critical question is whether the information could have been submitted earlier.” *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-815, 22 NRC 198, 202 (1985) (citations omitted); *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-10-19, 72 NRC 529, 546 (2010). If the information offered with a motion to reopen had “been apparent from the outset of th[e] proceeding” or “is not an unexpected revelation,” the motion must be denied as untimely. *Vt. Yankee*, CLI-11-2, 73 NRC at 340 (quoting *Vt. Yankee*, LBP-10-19, 72 NRC at 546, 547).

RULES OF PRACTICE: MOTIONS TO REOPEN; SIGNIFICANT SAFETY/ENVIRONMENTAL ISSUE

To satisfy the second requirement for a motion to reopen, a movant must identify “uncorrected . . . errors [that] endanger safe plant operation.” *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-940, 32 NRC 225, 243 (1990) (quoting *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-756, 18 NRC 1340, 1345) (1983)).

RULES OF PRACTICE: MOTIONS TO REOPEN; MATERIALLY DIFFERENT RESULT

To satisfy the third requirement to reopen a record, a movant must submit evidence “sufficiently compelling to suggest a likelihood of materially affecting the ultimate results in the proceeding.” *Pilgrim*, CLI-12-10, 75 NRC at 499. A board must determine “the likelihood that a different result will be reached if the [new] information is considered.” 51 Fed. Reg. at 19,537.

RULES OF PRACTICE: MOTIONS TO REOPEN

Repeating arguments on existing safety issues already rejected by a licensing board or offering differing analyses on existing factual information is wholly

insufficient to reopen the record. *See Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-85-42, 22 NRC 795, 799 (1985).

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

Motions for reconsideration may not be filed except upon a showing of compelling circumstances, such as the existence of a clear and material error in a decision that could not have reasonably been anticipated, which renders the decision invalid. 10 C.F.R. § 2.323(e).

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

Reconsideration is “an extraordinary action and should not be used as an opportunity to reargue facts and rationales which were (or should have been) discussed earlier.” Changes to Adjudicatory Process, 69 Fed. Reg. 2,182, 2,207 (Jan. 14, 2004).

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

The identification of compelling circumstances is a high standard that “is intended to permit reconsideration only where manifest injustice would occur in the absence of reconsideration” and requires more than a request that a presiding officer “reexamine existing evidence that may have been misunderstood or overlooked, or to clarify a ruling on a matter.” Changes to Adjudicatory Process, 69 Fed. Reg. 2,182, 2,207 (Jan. 14, 2004).

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

The Commission strictly applies the reconsideration standard. *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 400-01 (2006); *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 622 (2004).

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

“[R]econsideration petitions must establish an error in a . . . decision, based upon an elaboration or refinement of an argument already made, an overlooked controlling decision or principle of law, or a factual clarification.” *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-18, 58 NRC 433, 434 (2003) (citing *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-02-1, 55 NRC 1, 2 (2002)).

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

A movant must identify a legal or factual error to succeed on its motion for reconsideration. *See Millstone*, CLI-03-18, 58 NRC at 435.

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

Motions for reconsideration “may not be filed except upon leave of the presiding officer.” 10 C.F.R. § 2.323(e).

LICENSE CONDITIONS: LICENSEE DISCRETION

No statute or regulation mandates an explicit level of detail or a limit on licensee discretion in license conditions.

LICENSE CONDITIONS

The Commission may impose license conditions “as it deems appropriate and necessary.” 10 C.F.R. § 50.50.

ATOMIC ENERGY ACT: SAFETY FINDINGS (OR REASONABLE ASSURANCE STANDARD)

OPERATING LICENSE AMENDMENTS: RESPONSIBILITY OF LICENSING BOARD

The “[r]easonable assurance” [standard] is not quantified as equivalent to a 95% (or any other percent) confidence level but is based on sound technical judgment of the particulars of a case and on compliance with our regulations.” *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 262-63 (2009); *see AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-07-17, 66 NRC 327, 340 (2007), *aff’d*, CLI-09-7, 69 NRC 235 (2009); *see also N. Anna Envtl. Coal. v. NRC*, 533 F.2d 655, 667-68 (D.C. Cir. 1976).

REGULATIONS: INTERPRETATION (10 C.F.R. § 2.323(c))

A party may file an answer in support of or in opposition to a motion, accompanied by affidavits or other evidence. 10 C.F.R. § 2.323(c).

REGULATIONS: INTERPRETATION (10 C.F.R. § 2.323(c))

An answer to a motion for reconsideration is permitted by 10 C.F.R. § 2.323(c).

RULES OF PRACTICE: NRC STAFF GUIDANCE DOCUMENTS

A Staff guidance document is not binding on a licensing board. “NUREGs and Regulatory Guides, by their very nature, serve merely as guidance and cannot prescribe requirements [whereas o]nly statutes, regulations, orders, and license conditions can impose requirements upon applicants and licensees.” *Cu-rators of the University of Missouri* (TRUMP-S Project), CLI-95-1, 41 NRC 71, 98 (1995) (citing *Carolina Power & Light Co. and North Carolina Eastern Municipal Power Agency* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986)).

RULES OF PRACTICE: NRC STAFF GUIDANCE DOCUMENTS

An agency violates the Administrative Procedure Act if it treats a guidance document as binding, either on itself or on the regulated community. *Gen. Elec. Co. v. EPA*, 290 F.3d 377, 384-85 (D.C. Cir. 2002); *McLouth Steel Prods. Corp. v. Lee*, 838 F.2d 1317, 1321-32 (D.C. Cir. 1988); *New Jersey v. NRC*, 526 F.3d 98, 102 (3d Cir. 2008).

MEMORANDUM AND ORDER
(Denying Motion to Reopen, Motion for Leave, and
Motion for Partial Reconsideration; Granting in Part
and Denying in Part Motion for Leave to Reply)

On August 21, 2020, this Licensing Board issued an Initial Decision (LBP-20-9) concerning a challenge by intervenor C-10 Research and Education Foundation (C-10) to a license amendment request (LAR) filed by NextEra Energy Seabrook, LLC (NextEra), regarding the 10 C.F.R. Part 50 operating license for Seabrook Unit 1, in Seabrook, New Hampshire.¹ The license amendment revised the Unit 1 Updated Final Safety Analysis Report to include methods for analyzing the impact of concrete degradation caused by the alkali-silica reaction

¹ LBP-20-9, 92 NRC 58 (2020). A comprehensive summary of this proceeding can be found in LBP-20-9 and thus need not be repeated here.

(ASR) affecting seismic Category I reinforced concrete structures at Seabrook.² On March 11, 2019, the NRC Staff (Staff) issued the license amendment to NextEra.³ In our Initial Decision, we found that the license amendment, with the addition of four license conditions, labeled c. through f., provided reasonable assurance of adequate protection.⁴

On August 31, 2020, C-10 filed a Motion to Re-Open the Record for Consideration of Supplemental Testimony Regarding License Conditions (Motion to Reopen),⁵ a Motion for Leave to File Motion for Partial Reconsideration (Motion for Leave),⁶ and a Motion for Partial Reconsideration of LBP-20-09 (Motion for Partial Reconsideration).⁷ In its motions, C-10 argues the license conditions imposed by the Board in LBP-20-9 “must be amended because they currently lack sufficiently specific terms for ensuring timely and reliable detection of unacceptable development of internal cracks caused by [ASR] in concrete structures at the Seabrook nuclear power plant.”⁸ C-10 also asserts that (1) error bars should be required in license condition c.;⁹ (2) the word “significantly” should be removed from license condition e. because it is too vague and leaves too much discretion to NextEra;¹⁰ (3) acoustic sensors and bi-annual monitoring of the rebar should be required in license condition d;¹¹ and (4) license condition

² See Ex. INT010, Seabrook, License Amendment Request 16-03 — Revise Current Licensing Basis to Adopt a Methodology for the Analysis of Seismic Category I Structures with Concrete Affected by Alkali-Silica Reaction (Aug. 1, 2016) at PDF 1-3. As we noted in our initial decision, for reference clarity, we refer to the original LAR pages using their PDF page numbers. See LBP-20-9, 92 NRC at 73 n.1.

³ Ex. INT024, NRC Safety Evaluation Related to Amendment No. 159 to Facility Operating License No. NPF-86 (Mar. 11, 2019) at 2, 61-63.

⁴ LBP-20-9, 92 NRC at 217-18. The conditions were labeled c. through f. because the license amendment already included conditions a and b imposed by the NRC Staff.

⁵ [C-10]’s Motion for Partial Reconsideration and Motion to Re-Open the Record for Consideration of Supplemental Testimony Regarding License Conditions in LBP-20-09 (Aug. 31, 2020) at 4-5 [hereinafter Motion for Partial Reconsideration and Motion to Reopen]. Accompanying these C-10 motions are two proposed exhibits that contained public and non-public versions of supplemental testimony supporting the motions from C-10’s expert witness at the evidentiary hearing, Dr. Victor E. Saouma. See Ex. INT052, Supplemental Testimony of Victor E. Saouma, Ph.D. Regarding LBP-20-09 (non-public); Ex. INT054, Supplemental Testimony of Victor E. Saouma, Ph.D. Regarding LBP-20-09 — Redacted Public Version [hereinafter Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony]. The Board will include a parallel citation to both exhibits in the subsequent discussion.

⁶ [C-10]’s Motion for Leave to File Motion for Partial Reconsideration of LBP-20-09 (Aug. 31, 2020) [hereinafter Motion for Leave].

⁷ See Motion for Partial Reconsideration and Motion to Reopen at 2-4.

⁸ *Id.* at 1-2.

⁹ See Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 1-2.

¹⁰ *Id.* at 4.

¹¹ *Id.* at 2.

f. should be modified to require petrography able to identify cracks “as small as 10 [micrometers] (μm).”¹²

On September 10, 2020, NextEra filed answers opposing all three of C-10’s August 31 motions.¹³ NextEra generally argues that C-10’s motions fail to satisfy any of the requirements for reconsideration and to reopen the record¹⁴ and that C-10’s arguments in its Motion for Partial Reconsideration address the adequacy of the license conditions but do not identify a clear and material error.¹⁵

The Staff also filed answers on September 10, 2020.¹⁶ It opposes C-10’s Motion to Reopen.¹⁷ The Staff also opposes every revision to the license conditions posited by C-10 in its Motion for Partial Reconsideration, except that it agrees with C-10 that the phrase “significantly” should be removed from license condition e.¹⁸ Instead of asking the Board to remove that term, however, the Staff asks the Board to increase the threshold for the engineering evaluation called for in license condition e. to 0.24 millimeters per meter (mm/m) (0.024%) from 0.2 mm/m (0.02%).¹⁹ The Staff also suggests several non-substantive changes to the conditions, including spelling out several acronyms and removing unnecessary language.²⁰

On September 17, 2020, C-10 filed a motion for leave to reply to the Staff’s

¹² *Id.* at 5.

¹³ NextEra’s Answer Opposing C-10’s Motion to Reopen the Record for Consideration of Supplemental Testimony (Sept. 10, 2020) [hereinafter NextEra Ans. to Motion to Reopen]; NextEra’s Answer Opposing C-10’s Motion for Leave and Motion for Partial Reconsideration of LBP-20-9 (Sept. 10, 2020) [hereinafter NextEra Ans. to Motion for Partial Reconsideration].

¹⁴ NextEra Ans. to Motion to Reopen at 3-8; NextEra Ans. to Motion for Partial Reconsideration at 3-10.

¹⁵ NextEra Ans. to Motion for Partial Reconsideration at 4-5 (“Dr. Saouma does not identify any ‘error’ in the Board’s decision. Rather, he expresses his dissatisfaction with the ruling and notes how he would modify the license conditions. But Dr. Saouma’s personal preferences do not conjure a ‘manifest injustice.’ Moreover, C-10 fails to explain why Dr. Saouma could not have provided these views earlier in the proceeding.”).

¹⁶ NRC Staff’s Answer to C-10’s Motion for Partial Reconsideration and to Reopen the Record (Sept. 10, 2020) [Staff Ans. to Motion for Partial Reconsideration and Motion to Reopen]. In support of its answer, the Staff also provided an affidavit that contained information from the Staff’s expert witnesses at the hearing. *See* Staff Ans. to Motion for Partial Reconsideration and Motion to Reopen, Aff. of Angela Buford, Bryce Lehman, Jacob Philip, and George Thomas in Response to C-10’s Motion for Partial Reconsideration and to Reopen the Record (Sept. 10, 2020) [hereinafter New Staff Affidavit].

¹⁷ Staff Ans. to Motion for Partial Reconsideration and Motion to Reopen at 3-4.

¹⁸ *Id.* at 4-5.

¹⁹ *Id.* at 5.

²⁰ Staff Ans. to Motion for Partial Reconsideration and Motion to Reopen at 3.

and NextEra's answers (Motion for Leave to Reply),²¹ accompanied by (1) C-10's Reply to Oppositions to Motions for Partial Reconsideration and to Reopen for Consideration of Supplemental Testimony Regarding License Conditions (C-10's Reply), and (2) Proposed Ex. INT053/INT055, Rebuttal Supplemental Testimony of Victor E. Saouma, Ph.D.²² In his Rebuttal Testimony, Dr. Saouma, among other things, opposes the Staff's request that the Board should change the value in license condition e. from 0.2 mm/m (0.02%) to 0.24 mm/m (0.024%).²³

On September 28, 2020, NextEra filed an answer opposing C-10's Motion for Leave to File a Reply and its request for leave to file Proposed Ex. INT053/INT055.²⁴ NextEra argued that several procedural and substantive grounds warranted Board denial of the Motion for Leave to Reply and the admission of Proposed Ex. INT053/INT055.²⁵

For the reasons explained below, C-10's motions are denied, except that we grant C-10's Motion for Leave to Reply solely for the purposes identified *infra* in Section II.D. The Board adopts the non-substantive changes proposed by the Staff, but we deny its request to adopt a specific numeric threshold of 0.24 mm/m (0.024%) for the engineering evaluation referred to in license condition e.

I. LEGAL STANDARDS

A. Motion to Reopen

Section 2.326 of the NRC's rules of practice sets forth the requirements

²¹ [C-10]'s Motion for Leave to File Reply to Oppositions to Motion for Partial Reconsideration of LBP-20-09 (Sept. 17, 2020) [hereinafter Motion for Leave to Reply].

²² [C-10]'s Reply to Oppositions to Motion for Partial Reconsideration and Motion to Re-Open the Record for Consideration of Supplemental Testimony Regarding License Conditions in LBP-20-09 (Sept. 17, 2020) at 6 (non-public); C-10's Reply to Oppositions to Motion for Partial Reconsideration and Motion to Re-Open the Record for Consideration of Supplemental Testimony Regarding License Conditions in LBP-20-09 (Oct. 5, 2020) at 6 (redacted public version) [hereinafter C-10's Reply]. In the subsequent discussion, the Board will refer to C-10's public filing.

In support of its reply, C-10 once again proffered additional proposed public and nonpublic versions of an exhibit consisting of testimony from its expert witness Dr. Saouma. *See* Ex. INT053, Rebuttal Supplemental Testimony of Victor E. Saouma, Ph.D. Regarding LBP-20-09 (non-public); Ex. INT055, Rebuttal Supplemental Testimony of Victor E. Saouma, Ph.D. Regarding LBP-20-09 - REDACTED PUBLIC VERSION [hereinafter Proposed Ex. INT053/INT055, Dr. Saouma Rebuttal Supplemental Testimony]. The Board will include a parallel citation to both exhibits in the subsequent discussion.

²³ C-10's Reply at 6; Proposed Ex. INT053/INT055, Dr. Saouma Rebuttal Supplemental Testimony at 6.

²⁴ NextEra's Answer Opposing C-10's Motion for Leave to File a Reply and Motion for Leave to File [Ex.] INT053 (Sept. 28, 2020) [hereinafter NextEra Ans. to Motion for Leave to Reply].

²⁵ *Id.* at 2.

to reopen a closed evidentiary record. The motion must (1) be timely; (2) “address a significant safety or environmental issue[]”; and (3) “demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.”²⁶ In addition, “the motion must be accompanied by affidavits that set forth the factual and/or technical bases for the movant’s claim. . . .”²⁷ Commission precedent indicates reopening the record is an “extraordinary action”²⁸ that imposes a “‘deliberately heavy’ burden” on a movant to meet the “high standard” of reopening the record.²⁹ Accordingly, “[t]o meet the reopening standard . . . it is insufficient merely to point to disputed facts.”³⁰ Instead, the most important criterion in a motion to reopen is the second requirement, identification of a significant safety or environmental issue.³¹

For a motion to reopen to be timely, it must seek to admit information that could not have been submitted at an earlier time in the proceeding.³² In other words, “[t]he critical question is whether the information could have been submitted earlier.”³³ If the information offered with a motion to reopen had “been apparent from the outset of th[e] proceeding” or “is not an unexpected revelation,” the motion must be denied as untimely.³⁴ In addition, “documents merely summarizing earlier documents or compiling preexisting, publicly available in-

²⁶ 10 C.F.R. § 2.326(a)(1)-(3).

²⁷ *Id.* § 2.326(b).

²⁸ *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-11-2, 73 NRC 333, 338 (2011) (quoting Criteria for Reopening Records in Formal Licensing Proceedings, 51 Fed. Reg. 19,535, 19,538 (May 30, 1986)); *id.* at 337-38 (“We consider reopening the record for any reason to be ‘an extraordinary action’ and we therefore impose a deliberately heavy burden upon an intervenor who seeks to supplement the evidentiary record after it has been closed, even with respect to an existing contention.” (quotations and citations omitted)).

²⁹ *Id.* at 338 (quoting *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC 658, 674 (2008)).

³⁰ *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-10, 75 NRC 479, 499 (2012).

³¹ *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-834, 23 NRC 263, 264 (1986).

³² See *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), CLI-99-12, 36 NRC 62, 76 (1992).

³³ *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-815, 22 NRC 198, 202 (1985) (citations omitted); *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-10-19, 72 NRC 529, 546 (2010) (“For purposes of the timeliness analysis under 10 C.F.R. § 2.326(a)(1), the question is: when should these issues have been identified and asserted? Are these complaints based on new information, or on information that has been available for a significant time period?”).

³⁴ *Vt. Yankee*, CLI-11-2, 73 NRC at 340 (quoting *Vt. Yankee*, LBP-10-19, 72 NRC at 546, 547).

formation into a single source do not render ‘new’ the summarized or compiled information.”³⁵

Turning to the second requirement to reopen a record,³⁶ a movant must identify “uncorrected . . . errors [that] endanger safe plant operation.”³⁷ Finally, to satisfy the third requirement to reopen a record,³⁸ a movant must seek to submit evidence “sufficiently compelling to suggest a likelihood of materially affecting the ultimate results in the proceeding.”³⁹ A board must determine “the likelihood that a different result will be reached if the [new] information is considered.”⁴⁰ The movant bears the burden to satisfy each requirement.⁴¹

B. Motion for Leave to File and Motion for Partial Reconsideration

Under 10 C.F.R. § 2.323(e), “[m]otions for reconsideration may not be filed except . . . upon a showing of compelling circumstances, such as the existence of a clear and material error in a decision, which could not have reasonably been anticipated, that renders the decision invalid.”⁴² The Commission has stated that reconsideration is “an extraordinary action and should not be used as an opportunity to reargue facts and rationales which were (or should have been) discussed earlier.”⁴³ The identification of compelling circumstances is a high standard that “is intended to permit reconsideration only where manifest injustice would occur in the absence of reconsideration” and requires more than a request that a presiding officer “reexamine existing evidence that may have been misunderstood or overlooked, or to clarify a ruling on a matter.”⁴⁴

Motions for reconsideration are not granted “lightly,” and the Commission strictly applies the reconsideration standard.⁴⁵ Notably, “[r]econsideration peti-

³⁵ *Id.* at 344.

³⁶ 10 C.F.R. § 2.326(a)(2).

³⁷ *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-940, 32 NRC 225, 243 (1990) (quoting *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-756, 18 NRC 1340, 1345) (1983)).

³⁸ 10 C.F.R. § 2.326(a)(3).

³⁹ *Pilgrim*, CLI-12-10, 75 NRC at 499.

⁴⁰ 51 Fed. Reg. at 19,537.

⁴¹ *Oyster Creek*, CLI-08-28, 68 NRC at 668-69.

⁴² 10 C.F.R. § 2.323(e).

⁴³ Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2207 (Jan. 14, 2004).

⁴⁴ *Id.* (stating the “compelling circumstances” standard is “a higher standard than the existing case law” which permitted motions for reconsideration “to reexamine existing evidence that may have been misunderstood or overlooked, or to clarify a ruling on a matter”).

⁴⁵ *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 400-01 (2006); *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 622 (2004).

tions must establish an error in a . . . decision, based upon an elaboration or refinement of an argument already made, an overlooked controlling decision or principle of law, or a factual clarification.”⁴⁶ In addition, the publication of a legally required document, by itself, is not an unanticipated event sufficient to justify reconsideration.⁴⁷ At bottom, a movant must identify a legal or factual error to succeed on its motion for reconsideration.⁴⁸ In addition to the strict standards, motions for reconsideration “may not be filed except upon leave of the presiding officer.”⁴⁹

II. BOARD RULING

A. Motion to Reopen

Because C-10 fails to meet the high bar for reopening the record, the Motion to Reopen is denied.

Regarding timeliness, the issue is not just whether the Motion to Reopen was filed within ten days of our Initial Decision,⁵⁰ but whether the information contained in Proposed Ex. INT052/INT054 could have been submitted earlier in the proceeding.⁵¹ C-10 argues the information has been timely provided because it could not have anticipated the Board would impose license conditions.⁵² In ruling on C-10’s Emergency Petition several months before the evidentiary hearing, however, the Commission plainly stated this Board has the authority to place license conditions on the license amendment.⁵³ Therefore, the unremarkable fact that the Board’s Initial Decision imposed license conditions does not make C-10’s Motion to Reopen timely.

Furthermore, Dr. Saouma’s testimony in Proposed Ex. INT052/INT054 is not based on new information. Rather, he largely referenced information in the evidentiary hearing record, which C-10 had access to since at least September 2019, that he claims supports his suggested revisions to the Board-imposed license conditions.⁵⁴ A licensing board decision based on information previously

⁴⁶ *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-18, 58 NRC 433, 434 (2003) (citing *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-02-1, 55 NRC 1, 2 (2002)).

⁴⁷ *Diablo Canyon*, CLI-06-27, 64 NRC at 401.

⁴⁸ *See Millstone*, CLI-03-18, 58 NRC at 435.

⁴⁹ 10 C.F.R. § 2.323(e).

⁵⁰ Motion for Partial Reconsideration and Motion to Reopen at 4.

⁵¹ *See supra* notes 32-33 and accompanying text.

⁵² Motion for Partial Reconsideration and Motion to Reopen at 3.

⁵³ CLI-19-7, 90 NRC 1, 11 (2019).

⁵⁴ *See* Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony.

available to a petitioner in the evidentiary record is not considered “new information” sufficient to satisfy the timeliness requirement.⁵⁵ The Initial Decision published no new information, but rather contained the Board’s analysis of the extensive evidentiary record created by the parties through their exhibits and witness responses to Board questions.⁵⁶

For example, Dr. Saouma contends that license condition c should be modified to require the use of error bars.⁵⁷ But license condition c. is not a new creation by the Board. Rather, we modified an existing Staff license condition, referred to as Check 3, to require that control extensometers be monitored every six months.⁵⁸ C-10 does not question that modification of Check 3. It does not argue, for example, that the control extensometers should be monitored more frequently than the Board directed. Instead, C-10 argues for a different modification of Check 3 that it could have presented at the evidentiary hearing.

In fact, Dr. Saouma *did* argue for the use of error bars in the Corroboration Study, another Staff condition. Error bars were a subject of discussion at the hearing.⁵⁹ The Board considered requiring error bars to account for data uncertainty in the Corroboration Study and found them unnecessary.⁶⁰ Thus, Dr. Saouma’s recommendation for the use of error bars to account for data uncertainty is not new information but was discussed at the hearing and in the Board’s Initial Decision. Dr. Saouma now urges their inclusion as part of the check on the control extensometers in license condition c. But C-10’s attempt to re-introduce its previously considered argument in the context of license condition c. is untimely.

Dr. Saouma also suggests revisions to license condition d. to require the use of acoustic sensors and bi-annual monitoring of the rebar.⁶¹ C-10 had ample opportunity to raise issues regarding monitoring of the rebar during the evidentiary hearing. In fact, license condition d. was in large part based on Dr. Saouma’s testimony that excessive steel stresses caused by the chemical prestressing effect could result in premature fracture or yielding of rebar.⁶² At the hearing, C-10 could have proposed license conditions it deemed necessary to address this potential future problem.

⁵⁵ See *Vt. Yankee*, CLI-11-2, 73 NRC at 344 (citing *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-10-27, 72 NRC 481, 493-96 (2010)).

⁵⁶ See 10 C.F.R. § 2.1210(c).

⁵⁷ Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 1-2.

⁵⁸ LBP-20-9, 92 NRC at 146.

⁵⁹ Tr. at 474 (Mtingwa).

⁶⁰ LBP-20-9, 92 NRC at 199-201.

⁶¹ Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 2.

⁶² LBP-20-9, 92 NRC at 164.

Moreover, Dr. Saouma did propose the use of acoustic sensors, but the Board found that issue beyond the scope of the proceeding.⁶³ Dr. Saouma identifies no new information on which he bases his new testimony regarding the proposed use of acoustic sensors. Since Dr. Saouma merely repeats his previous argument to use an alternative methodology based on existing information in the record,⁶⁴ it must be rejected as untimely for that reason as well.⁶⁵ This argument could have been, and was, raised earlier in the proceeding.

Dr. Saouma also seeks to modify license condition e. by removing the word “significantly.”⁶⁶ He cites various exhibits in the record to support his position that license condition e. “does not contain clear or stringent enough criteria for triggering an engineering evaluation.”⁶⁷ Again, Dr. Saouma identifies no new information but explicitly relied on existing evidence in the record.

Further, concerning license condition f., Dr. Saouma suggests that the petrography should be able to identify cracks “as small as 10 μm .”⁶⁸ In doing so, however, he cites documents in the record to claim that the phrase “petrography” is too vague.⁶⁹ Moreover, C-10 could have anticipated the Board would impose a license condition regarding petrography. In its original Contention C, C-10 maintained that “[t]horough petrographic analysis, including core sample testing of Seabrook’s in-situ concrete, must be integral to NextEra’s assessment of the advance of ASR.”⁷⁰ Therefore, C-10 could have argued how a “thorough

⁶³ *Id.* at 180-81.

⁶⁴ See Ex. INT027, Pre-Filed Opening Testimony of Victor E. Saouma, Ph.D. Regarding Scientific Evaluation of NextEra’s Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant — Redacted Version Filed June 26, 2019 at 35 [hereinafter Ex. INT027, Dr. Saouma Pre-Filed Testimony]; Ex. NER013, U.S. Department of Transportation, Federal Highway Administration (FHWA), “Report on the Diagnosis, Prognosis, and Mitigation of Alkali-Silica Reaction (ASR) in Transportation Structures” (FHWA-HIF-09-004) (Jan. 2010) at 33 [hereinafter Ex. NER013, FHWA Report]; Ex. NER012, The Institution of Structural Engineers, “Structural Effects of Alkali-Silica Reaction” (July 1992) at 17 [hereinafter Ex. NER012, ISE Structural Effects of [ASR] (non-public)]; Ex. NER075, Swiss Committee on Dams, “Concrete Swelling of Dams in Switzerland” (May 8, 2017) at 12-14 [hereinafter Ex. NER075, Swiss Committee on Dams]; Tr. at 1150 (Saouma).

⁶⁵ Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 2.

⁶⁶ *Id.* at 4.

⁶⁷ *Id.*

⁶⁸ *Id.* at 5.

⁶⁹ *Id.* (citing Ex. NER012, ISE Structural Effects of [ASR] at 17 (non-public); Ex. NER075, Swiss Committee on Dams at 12-14).

⁷⁰ LBP-17-7, 86 NRC at 107 (quoting C-10 Research and Education Foundation, Inc. Petition for [L]eave to [I]ntervene: Nuclear Regulatory Commission Docket No. 50-443 (Apr. 10, 2017) at 6 [hereinafter C-10 Petition]). In LBP-17-7, this Board admitted five contentions, including Contention C, which we reformulated into one contention. *Id.* at 89-90, 126-27.

petrographic analysis” should be conducted during the evidentiary hearing. Its effort to raise the issue now must therefore be rejected as untimely.

In sum, C-10’s proposed license condition revisions rely entirely on information that has “been apparent from the outset of th[e] proceeding.”⁷¹ Dr. Saouma does not identify new information that could be classified as “an unexpected revelation.”⁷² The suggested revisions to the license conditions concern matters that have always been part of NextEra’s monitoring program; therefore there is no reason the arguments could not have been raised earlier.⁷³ Consequently, we must deny the Motion to Reopen as untimely.

C-10 similarly fails to “address a significant safety or environmental issue” in its Motion to Reopen, in contravention of 10 C.F.R. § 2.326(a)(2).⁷⁴ C-10 fails to identify “uncorrected . . . errors [that] endanger safe plant operation.”⁷⁵ Rather than identifying errors, Dr. Saouma questions the “adequacy” of the license conditions.⁷⁶ To be sure, the license conditions do address significant safety issues, but that is not the relevant inquiry. Here, C-10 has failed to identify a *significant* safety issue based on *new information*. Repeating arguments on existing safety issues already rejected by the Board or offering differing analyses on existing factual information is wholly insufficient to reopen the record.⁷⁷ Since C-10 failed to identify a significant safety issue or “errors [that] endanger safe plant operation,”⁷⁸ it fails to meet the requirements of 10 C.F.R. § 2.326(a)(2).

Contrary to the third reopening requirement, C-10 also does not “demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.”⁷⁹ Specifically, C-10 must demonstrate that it would have been, at a minimum, likely that this Board would have reached a materially different conclusion had we reviewed Proposed Ex. INT052/INT054 initially. C-10 fails to make this demonstration. In Proposed Ex. INT052/INT054, Dr. Saouma reiterates existing arguments on the use of

⁷¹ *Vt. Yankee*, CLI-11-2, 73 NRC at 340 (quoting *Vt. Yankee*, LBP-10-19, 72 NRC at 546).

⁷² *Id.*

⁷³ NextEra Ans. to Motion to Reopen at 4.

⁷⁴ 10 C.F.R. § 2.326(a)(2).

⁷⁵ *Seabrook*, ALAB-940, 32 NRC at 243 (quoting *Diablo Canyon*, ALAB-756, 18 NRC at 1345).

⁷⁶ Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 1 (“ . . . I do not agree [license condition c], by itself, is adequate. . . .”).

⁷⁷ See *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-85-42, 22 NRC 795, 799 (1985) (“Differing analyses of experts of factual information already in the record do not normally constitute the type of information for which reopening of the record would be warranted.” (citing *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-84-13, 19 NRC 659, 718-19 (1984); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-644, 13 NRC 903, 994-95 (1981))).

⁷⁸ *Seabrook*, ALAB-940, 32 NRC at 243 (quoting *Diablo Canyon*, ALAB-756, 18 NRC at 1345).

⁷⁹ 10 C.F.R. § 2.326(a)(3).

acoustic sensors and error bars and points to existing evidentiary exhibits to support his opinion.⁸⁰ Since we reviewed all the materials he cited in Proposed Ex. INT052/INT054 in drafting our Initial Decision, Proposed Ex. INT052/INT054 would not have materially changed our conclusions. Dr. Saouma's new testimony adds nothing the Board did not already consider.⁸¹ Therefore, we conclude Proposed Ex. INT052/INT054 does not contain "sufficiently compelling [information] to suggest a likelihood of materially affecting the ultimate results in the proceeding."⁸²

Accordingly, the Motion to Reopen is denied because it is untimely, fails to "address a significant safety or environmental issue[.]" and does not "demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially."⁸³

B. Motion for Partial Reconsideration

Because of our ruling on the Motion to Reopen, we have no additional evidence to review in support of the Motion for Partial Reconsideration, making that motion subject to denial as moot. But even if we granted the Motion to Reopen, the Motion for Partial Reconsideration must be denied because it fails to satisfy the standards for the "extraordinary action" of reconsideration.⁸⁴

C-10 does not identify any "clear and material error" that "renders the decision invalid."⁸⁵ Rather, Dr. Saouma maintains that the license conditions give an "excessive and unnecessary degree of discretion" to NextEra, and thus LBP-20-9 is "invalid."⁸⁶ But to satisfy the standards for reconsideration, C-10 must identify a legal or factual error.⁸⁷ No statute or regulation mandates an explicit level of detail or a limit on licensee discretion in license conditions. Rather, the regulation permitting the imposition of license conditions, 10 C.F.R. § 50.50,

⁸⁰ Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 1-2, 4-5 (citing Ex. INT027, Dr. Saouma Pre-Filed Testimony at 35; Ex. NER013, FHWA Report at 33; Ex. NER012, ISE Structural Effects of [ASR] at 17 (non-public); Ex. NER075, Swiss Committee on Dams at 12-14; Tr. at 1150 (Saouma)); Proposed Ex. INT054, Dr. Saouma Supplemental Testimony at 1-2, 4-5 (citing Ex. INT027, Dr. Saouma Pre-Filed Testimony at 35; Ex. NER013, FHWA Report at 33; Ex. NER012, ISE Structural Effects of [ASR] at 17 (non-public); Ex. NER075, Swiss Committee on Dams at 12-14; Tr. at 1150 (Saouma)).

⁸¹ LBP-20-9, 92 NRC at 132, 133-34, 135, 137, 143, 146, 166, 173, 175, 176-77, 180, 182, 190-91, 192-93, 199-201, 204-05, 209, 212.

⁸² *Pilgrim*, CLI-12-10, 75 NRC at 499.

⁸³ 10 C.F.R. § 2.326(a)(1)-(3).

⁸⁴ Changes to Adjudicatory Process, 69 Fed. Reg. at 2207.

⁸⁵ 10 C.F.R. § 2.323(e).

⁸⁶ Motion for Partial Reconsideration and Motion to Reopen at 3-4.

⁸⁷ *Millstone*, CLI-03-18, 58 NRC at 435.

plainly states that the Commission may impose license conditions “as it deems appropriate and necessary.”⁸⁸ It contains no other requirements.⁸⁹ Thus, a disagreement on the level of discretion afforded in the license conditions does not render our decision invalid, nor does it show a legal or factual error. C-10 may view the conditions as inadequate, but subjective opinion on the adequacy of the license conditions is entirely different from the identification of a legal or factual error.

Furthermore, it is important to remember that the license amendment will remain in effect for the next thirty years. It is reasonable to expect that in that time there will be changes in technology. Thus, a highly prescriptive condition could mandate adherence to a methodology that is outdated by the time its use is called for. If improved technology becomes available, unless NextEra could rely on 10 C.F.R. § 50.59, it would then have to file a license amendment to use the more up-to-date technology. The Board therefore decided not to mandate the use of particular technologies because they may become outmoded in the future.

Turning to the specific conditions, C-10 identifies no Board error, much less a “manifest injustice,” from the lack of an error-bar requirement in license condition c.⁹⁰ We addressed the potential use of error bars to account for data uncertainty in the Corroboration Study and found them unnecessary.⁹¹ C-10’s disagreement with our holding does not amount to an error or demonstrate “manifest injustice.”⁹² Moreover, as explained above, license condition c. is a modification of an existing Staff-imposed condition, not a Board creation. Check 3 as imposed by the Staff did not require error bars, and thus C-10 could have raised that issue during the evidentiary hearing. It is therefore too late to raise the issue now.

Turning to the use of acoustic sensors, we held that they are beyond the scope of the proceeding.⁹³ Mere disagreement with the Board’s ruling⁹⁴ is insuf-

⁸⁸ 10 C.F.R. § 50.50.

⁸⁹ The Commission in its decision regarding C-10’s Emergency Petition stated that this Board may impose a license condition if we found “that the license amendment should not have been granted.” See CLI-19-7, 90 NRC at 11. The Commission did not identify any other requirements for imposing or limiting the contents of license conditions. *Id.*

⁹⁰ Changes to Adjudicatory Process, 69 Fed. Reg. at 2207.

⁹¹ LBP-20-9, 92 NRC at 199-201.

⁹² Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 2 (stating error bars should be added because “it is particularly difficult to interpret laboratory data for purposes of evaluating next steps”).

⁹³ LBP-20-9, 92 NRC at 180.

⁹⁴ Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 2 (stating the lack of acoustic sensors “is a matter of concern” but identifying no legal or factual error); Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 2.

ficient to satisfy the high bar of reconsideration, which requires demonstration of compelling circumstances that render the decision invalid.⁹⁵ Moreover, Dr. Saouma himself previously characterized “Acoustic Emission” as only a “Potentially Applicable Technique for monitoring ASR-relevant parameters, but not performed with success yet at the structural level in the field.”⁹⁶ Thus, revisiting the potential use of acoustic sensors is not necessary to correct a “manifest injustice.”⁹⁷

We also are not persuaded by the Staff’s and C-10’s argument that the use of the word “significantly” in license condition e.⁹⁸ renders the decision invalid because it permits licensee engineering judgment.⁹⁹ In fact, license condition e. explicitly aims to *reduce* NextEra’s discretion in conducting “Follow-Up and Interim inspections.”¹⁰⁰ We noted that under NextEra’s SMP such inspections could be conducted “entirely ‘at the discretion of the engineer.’”¹⁰¹ Therefore, we imposed license condition e. to limit that discretion and require action when “the ASR expansion rate in any area of a Seabrook seismic Category I structure significantly exceeds 0.2 mm/m (0.02%) through-thickness expansion per year[.]”¹⁰²

The Board’s Initial Decision explains the considerations relevant to determining whether an increase in the expansion rate is significant. The Board noted Staff testimony indicating that the inspections should be “frequent enough to capture expansion prior to hitting the limits.”¹⁰³ This will ensure that the inspection intervals will be “short enough that there [is not] the potential for structural loss of function in between the inspection intervals.”¹⁰⁴ Thus, the 0.2 mm/m (0.02%)

⁹⁵ 10 C.F.R. § 2.323(e).

⁹⁶ Ex. INT027, Dr. Saouma Pre-Filed Testimony at 35.

⁹⁷ Changes to Adjudicatory Process, 69 Fed. Reg. at 2207; *see* Proposed Ex. INT052/054, Dr. Saouma Supplemental Testimony at 2.

⁹⁸ License condition e. states: “If the ASR expansion rate in any area of a Seabrook seismic Category I structure significantly exceeds 0.2 mm/m (0.02%) through-thickness expansion per year, NextEra’s Management will perform an engineering evaluation focused on the continued suitability of the six-month monitoring interval for Tier 3 areas. If the engineering evaluation concludes that more frequent monitoring is necessary, it shall be implemented under the [Structures Monitoring Program].” LBP-20-9, 92 NRC at 218.

⁹⁹ Staff Ans. to Motion for Partial Reconsideration and Motion to Reopen at 2; Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 3-4.

¹⁰⁰ Ex. NER007, Seabrook Structures Monitoring Program Manual, Rev. 7 [PROPRIETARY] at 3-1.10 [hereinafter Ex. NER007, Seabrook [SMP] Manual Rev. 7] (non-public).

¹⁰¹ LBP-20-9, 92 NRC at 177 (quoting Ex. NER007, Seabrook [SMP] Manual Rev. 7, at 3-1.10 (non-public)).

¹⁰² *Id.* at 178.

¹⁰³ *Id.* at 175-76 (quoting Tr. at 420 (Buford)).

¹⁰⁴ *Id.* at 176 (quoting Tr. at 1122 (Buford)).

through-thickness expansion rate would be significantly exceeded if NextEra were to measure an expansion rate that makes the inspections not “frequent enough to capture the expansion prior to exceeding the expansion limits,” that is, an expansion rate that results in “the potential for structural loss of function in between the inspection intervals.”¹⁰⁵ We did not provide a specific number to define “significantly” because, depending on the total through-thickness expansion to date, different expansion rates may be considered significant. For example, if the total through-thickness expansion is nearing the expansion limit, even a small increase in the expansion rate would be significant if, as a result of the increase, the inspections will not be “frequent enough to capture the expansion prior to exceeding the expansion limits.”¹⁰⁶

To be sure, such determinations may require some degree of engineering judgment. But, as NextEra argues, “the concept of engineering discretion (also known as engineering judgment) has long been part of the fabric of the NRC’s safety regulation framework.”¹⁰⁷ NextEra notes that “the term ‘significantly’ is used in countless codified NRC regulatory provisions, and the NRC routinely inspects against and enforces these requirements.”¹⁰⁸ Our own word search of 10 C.F.R. Part 50 returned over twenty instances in which “significantly” is used and over ninety instances of the use of “significant.”¹⁰⁹

In fact, agency judgment is an essential part of determining whether the reasonable assurance standard is satisfied. The Commission has explained that the “[r]easonable assurance’ [standard] is not quantified as equivalent to a 95% (or any other percent) confidence level, but is based on sound technical judgment of the particulars of a case and on compliance with our regulations.”¹¹⁰ The Commission conducts a case-by-case analysis to determine whether the standard is met.¹¹¹ Therefore, any argument asserting license condition e. renders LBP-20-9 invalid because it permits some degree of engineering judgment is incorrect. Allowing the use of engineering judgment, a major component of

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* at 175-76 (quoting Tr. at 420).

¹⁰⁷ NextEra Ans. to Motion for Partial Reconsideration at 5.

¹⁰⁸ *Id.* at 6.

¹⁰⁹ See, e.g., 10 C.F.R. § 50.61a(f)(6)(i)(B) (requiring licensees to “determine if the surveillance data show a significantly different trend” than predicted in a reactor pressure vessel embrittlement model); *id.* § 50.61(a)(2) (“Pressurized Thermal Shock Event means an event or transient in pressurized water reactors (PWRs) causing severe overcooling (thermal shock) concurrent with or followed by significant pressure in the reactor vessel.”); *id.* § 50.61(b)(1), (5); *id.* § 50.72(b)(3)(ii)(B) (requiring licensees to provide a notification to the NRC within 8 hours of a plant “being in an unanalyzed condition that significantly degrades plant safety”).

¹¹⁰ *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 263 (2009).

¹¹¹ *Id.* at 262 n.143.

the NRC’s regulatory system, is not a legal error, much less one that justifies reconsideration.

The Staff cites *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 34 (2000), in which the Commission held that a license condition must

be precisely drawn so that the verification of compliance becomes a largely ministerial rather than an adjudicatory act — that is, the Staff verification efforts should be able to verify compliance without having to make overly complex judgments on whether a particular contract provision conforms, as a legal and factual matter, to the promises [the applicant] has made.¹¹²

By contrast, license condition e. requires neither a legal judgment about a contract provision nor any other overly complex determination. If NextEra detects an increase in the expansion rate, all the license condition requires is a determination whether “inspection frequencies [will still be] frequent enough to capture [the] expansion prior to hitting the limits.”¹¹³

The limited degree of engineering judgment required for such a calculation is fully consistent with Commission precedent. The Commission itself imposed a license condition in the *Summer* combined license proceeding that used several discretionary modifiers. The Commission required the licensee to adopt strategies that “provide *reasonable* protection for the associated equipment from external events [and that] [s]uch protection must demonstrate that there is *adequate* capacity to address challenges to core cooling, containment, and spent fuel pool cooling capabilities. . . .”¹¹⁴ Further, the license condition required the licensee to notify the Commission if the implementation of the license condition “would *adversely* impact safe and secure operation of the facility[.]”¹¹⁵ This Commission-imposed license condition, like license condition e., used phrases permitting, but reasonably circumscribing, licensee discretion. Thus, authorizing engineering judgment in implementing license conditions does not render a decision “invalid,” but is a permissible action supported by NRC regulations and case law.¹¹⁶

¹¹² *Private Fuel Storage*, CLI-00-13, 52 NRC at 34.

¹¹³ LBP-20-9, 92 NRC at 175-76 (quoting Tr. at 420 (Buford)).

¹¹⁴ *South Carolina Electric and Gas Co. and South Carolina Public Service Authority* (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-12-9, 75 NRC 421, 441 (2012) (emphasis added).

¹¹⁵ *Id.* (emphasis added).

¹¹⁶ Dr. Saouma states that in license condition e., due to the use of the word “significantly,” “there is no . . . limit [to] NextEra’s discretion. . . .”. Proposed Ex. INT052/INT054, Dr. Saouma Supplemental Testimony at 4. In fact, as stated above, the use of “significantly” permits *limited* (Continued)

Finally, regarding the use of petrography in license condition f., we find C-10 failed to meet the reconsideration standards. Dr. Saouma identifies no error or “manifest injustice” in urging that we specify that petrography must capture cracks “as small as 10 μm .”¹¹⁷ This is nothing more than a disagreement regarding the appropriate level of specificity in license condition f.; it fails to demonstrate a “manifest injustice.” Moreover, in C-10’s Proposed Ex. INT053/INT055, Dr. Saouma states that “another guide for a reasonably comprehensive and accurate petrographic analysis is provided by the industry standard ASTM C856, Standard Practice for Petrographic Examination of Hardened Concrete.”¹¹⁸ NextEra’s hearing testimony explained that petrographic examinations for Seabrook were performed in accordance with ASTM C856.¹¹⁹ And, in their response to Proposed Exhibits INT052/INT054 and INT053/INT055, NextEra witnesses state that “License Condition (f) is sufficient because, even without a prescriptive reference to ASTM C856, it is appropriately interpreted as requiring adherence to industry standard petrography practices.”¹²⁰ We agree.

Therefore, the Board would deny the Motion for Partial Reconsideration even if it granted the Motion to Reopen.

C. Staff Answer

As explained above, although the Staff opposes C-10’s Motion to Reopen and opposes the Motion for Partial Reconsideration of license conditions c., d., and f., the Staff agrees with C-10 that the phrase “significantly” should be removed from license condition e.¹²¹ Unlike C-10, however, the Staff requests that the threshold for an engineering evaluation in license condition e. be *increased* to 0.24 mm/m (0.024%) from 0.2 mm/m (0.02%).¹²² C-10 opposes the Staff’s proposed modification.¹²³ The Staff’s proposed modification of license condition e. is in substance a cross-motion for partial reconsideration because it requests a substantially different modification than that proposed by C-10,

licensee discretion to make an informed decision based on the circumstances. In addition, as the discussion above demonstrates, NRC has experience enforcing regulations with discretionary phrases such as “significant,” “adequate,” and “reasonable.”

¹¹⁷ *Id.* at 5.

¹¹⁸ Proposed Ex. INT053/INT055, Dr. Saouma Rebuttal Supplemental Testimony at 7.

¹¹⁹ Ex. NER001, Testimony of NextEra Witnesses Michael Collins, John Simons, Christopher Bagley, Oguzhan Bayrak, and Edward Carley (“MPR Testimony”) at 48–49.

¹²⁰ NextEra Ans. to Motion for Leave to Reply, attach. 2, Aff. of John Simons, Christopher Bagley, and Edward Carley in Support of NextEra’s Answer Opposing C-10’s Motion for Leave to File a Reply and Motion for Leave to File [Ex.] INT053/[INT055] at 7 (Sept. 28, 2020).

¹²¹ Staff Ans. to Motion for Partial Reconsideration and Motion to Reopen at 2, 3.

¹²² *Id.* at 3.

¹²³ C-10’s Reply at 6.

based on evidence that has not previously been filed in this proceeding. So construed, the Staff's proposed modification fails to satisfy the criteria of 10 C.F.R. §§ 2.323(e) and 2.326.

According to the New Staff Affidavit, modification of license condition e. is required to comply with Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-101, a Staff guidance document.¹²⁴ The four Staff witnesses who previously testified at the evidentiary hearing state that the word "significantly" in license condition e. "is not quantitatively defined and, thus, its inclusion in this condition would make it unclear under exactly what conditions NextEra would be required to perform an engineering evaluation."¹²⁵ According to the Staff's witnesses, "[t]his would be contrary to the Staff's guidance . . . that license conditions 'should . . . be worded such that the meaning is clear and not open to different interpretations . . .'"¹²⁶

To begin with, the Staff's request to modify license condition e. is not properly before us. The Staff relies on an internal guidance document, NRR Office Instruction LIC-101, that is not part of the evidentiary record for this proceeding, not the subject of a motion for judicial notice under 10 C.F.R. § 2.337(f), and not cited in the Staff's previous filings.¹²⁷ The Staff also relies on a new affidavit explaining how it would apply its internal guidance to the Board's license conditions. Under 10 C.F.R. § 2.323(c), a party may file an answer "in support of or in opposition to the motion, accompanied by affidavits or other evidence."¹²⁸ However, the Staff in its "responsive" pleading has gone beyond merely answering C-10's proposed modification of license condition e., instead proposing its own modification that C-10 opposes. Like C-10, the Staff has proffered new evidence to the Board to justify its proposed modification of license condition e. Unlike C-10, however, the Staff has not filed a motion to reopen the record under 10 C.F.R. § 2.326. That alone is sufficient to justify denial of the Staff's request for modification of license condition e.

¹²⁴ NRR, NRC, LIC-101, License Amendment Review Procedures (rev. 6 July 31, 2020) (ADAMS Accession No. ML19248C539) [hereinafter LIC-101].

¹²⁵ New Staff Affidavit at 9.

¹²⁶ *Id.* (citing LIC-101 at app. B, 22).

¹²⁷ The guidance document was not filed as an exhibit in this proceeding. The Board has reviewed the Staff's Statement of Position, Supplemental Statement of Position, Proposed Findings of Fact and Conclusions of Law, Exhibits NRC001, NRC005, NRC090, NRC091, INT024, and the Staff's exhibit list, and has also conducted a keyword search on ADAMS. This guidance document was not mentioned anywhere in any of the Staff's documents. An earlier revision was cited by NextEra, but only to explain the function of requests for additional information (RAIs). *See* NextEra's Reply to NRC Staff's Answer to C-10's Petition for Leave to Intervene (May 12, 2017) at 3 n.8 (citing NRR, NRC, LIC-101, License Amendment Review Procedures (rev. 5 Jan. 9, 2017) (ADAMS Accession No. ML16061A451)).

¹²⁸ 10 C.F.R. § 2.323(c).

The Staff also fails to satisfy the standards governing motions for reconsideration. We have already considered and rejected the argument of the Staff and C-10 that the word “significantly” in license condition e. is a clear and material error that renders LBP-20-9 invalid. The argument of Staff witnesses based on NRR Office Instruction LIC-101 does not change our conclusion.¹²⁹ A Staff guidance document is not binding on this Board and thus cannot be the basis for concluding our decision is invalid. “NUREGs and Regulatory Guides, by their very nature, serve merely as guidance and cannot prescribe requirements [whereas o]nly statutes, regulations, orders, and license conditions can impose requirements upon applicants and licensees.”¹³⁰ Indeed, an agency violates the Administrative Procedure Act if it treats a guidance document as binding, either on itself or on the regulated community.¹³¹

Staff guidance (or the Staff’s explanation of how it would apply its guidance) may still be relevant to the extent it is persuasive. In this instance, however, we agree with NextEra that there is no safety-related reason to replace the language of license condition e. with the Staff’s proposed prescriptive value of 0.24 mm/m (0.024%).¹³² In fact, the Staff does not attempt to show that replacing the word “significantly” in license condition e. with 0.24 mm/m (0.024%) would ensure that the inspections will be frequent enough to prevent an exceedance of an expansion limit. Instead, the Staff attempts to justify the 0.24 mm/m (0.024%) figure because the Board referred to a hypothetical through-thickness expansion of 0.24 mm/m (0.024%) in the Initial Decision.¹³³ We did so, however, merely as one example (among many that could have been cited) of how a change in the expansion rate could affect the date on which an expansion limit is reached. Nothing in the Initial Decision indicates that we believe 0.24 mm/m (0.024%) or any other specific figure will necessarily be sufficient to define when through-thickness expansion “significantly” exceeds 0.2 mm/m (0.02%). That is an incorrect inference. We have purposefully not provided a specific figure to determine when an increase in the through-thickness expansion rate is “significant” because that determination depends on whether, taking into account both any observed increase in the expansion rate and the total through-thickness

¹²⁹ New Staff Affidavit at 9-10.

¹³⁰ *Curators of the University of Missouri* (TRUMP-S Project), CLI-95-1, 41 NRC 71, 98 (1995) (citing *Carolina Power & Light Co. and North Carolina Eastern Municipal Power Agency* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986)).

¹³¹ *Gen. Electric Co. v. EPA*, 290 F.3d 377, 384-85 (D.C. Cir. 2002); *McLouth Steel Prods. Corp. v. Lee*, 838 F.2d 1317, 1321-32 (D.C. Cir. 1988). Similarly, in *New Jersey v. NRC*, 526 F.3d 98, 102 (3d Cir. 2008), the Third Circuit rejected a challenge to the NRC’s use of a guidance document, NUREG-1757, because the court agreed with the NRC that it was only a “non-binding guidance document.”

¹³² NextEra Ans. to Motion for Leave to Reply at 11.

¹³³ LBP-20-9, 92 NRC at 175.

expansion up to that time, the inspection frequencies will be sufficient to prevent an exceedance of an expansion limit.¹³⁴

Although we deny the Staff's request for a substantive modification of license condition e., the Staff also suggested several stylistic revisions to the license conditions that we elect to adopt. We will revise license condition c. to specify we are referring to MPR-4273, Revision 1,¹³⁵ and remove the phrase "rather than in 2025 and every ten years thereafter."¹³⁶ In license condition d., we will change the reference to "SEM" to "Structural Evaluation Methodology."¹³⁷ In license condition e., we will change the reference to "SMP" to "Structures Monitoring Program." Accordingly, the license conditions now read:

- c. NextEra shall undertake the monitoring required by MPR-4273, Revision 1, Appendix B, Check 3, for control extensometers every six months.
- d. If stress analyses conducted pursuant to the Structural Evaluation Methodology show that the stress in the rebar from ASR-induced expansion and other loads will exceed the yield strength of the rebar, NextEra must develop a monitoring program sufficient to ensure that rebar failure or yielding does not occur, or is detected if it has already occurred, in the areas at-risk of rebar failure or yielding.
- e. If the ASR expansion rate in any area of a Seabrook seismic Category I structure significantly exceeds 0.2 mm/m (0.02%) through-thickness expansion per year, NextEra's Management will perform an engineering evaluation focused on the continued suitability of the six-month monitoring interval for Tier 3 areas. If the engineering evaluation concludes that more frequent monitoring is necessary, it shall be implemented under the Structures Monitoring Program.
- f. Each core extracted from Seabrook Unit 1 will be subjected to a petrographic analysis to detect internal microcracking and delamination.

D. C-10's Motion for Leave to Reply and C-10's Reply

In its Motion for Leave to Reply, C-10 asks that we allow it to reply and

¹³⁴ *Id.*

¹³⁵ Ex. INT019-R, MPR-4273, Rev. 1, Seabrook Station - Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction (July 2016) (Enclosure 5 to Letter SBK-18072); Ex. INT021, MPR-4273, Rev. 1, Seabrook Station — Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction (March 2018) (Enclosure 7 to Letter SBK-18072) (non-public).

¹³⁶ New Staff Affidavit at 5.

¹³⁷ *Id.* at 8.

submit additional testimony from Dr. Saouma (Proposed Ex. INT053/INT055) in response to the answers of NextEra and the Staff to C-10's post-Initial Decision motions.¹³⁸ Because we have construed the Staff's proposed modification of license condition e. to be in substance a cross-motion for partial reconsideration, we grant C-10's Motion for Leave to Reply to the extent its Reply and Proposed Ex. INT053/INT055 respond to the Staff's proposed modification.¹³⁹ An answer to a motion for reconsideration is permitted by 10 C.F.R. § 2.323(c), and because of the manner in which the Staff's proposed modification was filed, C-10 has not yet had the opportunity to respond. We have also considered Dr. Saouma's statement in C-10's Proposed Ex. INT053/INT055 that "another guide for a reasonably comprehensive and accurate petrographic analysis is provided by the industry standard ASTM C856, Standard Practice for Petrographic Examination of Hardened Concrete."¹⁴⁰ In all other respects, the Motion for Leave to Reply is denied. We agree with NextEra that C-10 has failed to satisfy the demanding requirements for filing a reply, which require that it demonstrate "compelling circumstances" and "that it could not reasonably have anticipated the arguments to which it seeks leave to reply."¹⁴¹

III. CONCLUSION

For the reasons stated above, the Board DENIES C-10's Motion to Reopen; DENIES C-10's Motion for Leave and Motion for Partial Reconsideration; and DENIES in part, GRANTS in part, C-10's Motion for Leave to Reply. The Board denies C-10's request to admit Proposed Ex. INT052/INT054. Proposed Ex. INT053/INT055 is admitted, but the Board has considered it only to the extent stated in the immediately preceding paragraph of this Order.¹⁴²

¹³⁸ Motion for Leave to Reply at 1.

¹³⁹ C-10's Reply at 5-6; Proposed Ex. INT053/INT055, Dr. Saouma Rebuttal Supplemental Testimony at 6.

¹⁴⁰ Proposed Ex. INT053/INT055, Dr. Saouma Rebuttal Supplemental Testimony at 7.

¹⁴¹ NextEra Ans. to Motion for Leave to Reply at 2 (citing 10 C.F.R. § 2.323(c)).

¹⁴² See Proposed Ex. INT053/INT055, Dr. Saouma Rebuttal Supplemental Testimony ¶¶ 18-20, 27.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Ronald M. Spritzer, Chairman
ADMINISTRATIVE JUDGE

Nicholas G. Trikouros
ADMINISTRATIVE JUDGE

Dr. Sekazi K. Mtingwa
ADMINISTRATIVE JUDGE

Rockville, Maryland
November 6, 2020

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

Docket No. 72-1050-ISFSI

INTERIM STORAGE PARTNERS LLC
(WCS Consolidated Interim Storage
Facility)

December 4, 2020

STANDARD OF REVIEW

The Commission affords substantial deference to the Board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion.

CONTENTIONS, ADMISSIBILITY

The Board properly found a contention regarding waste packaging and transportation that did not specifically challenge pertinent analyses in the application was inadmissible because it did not state a genuine dispute with the application.

MEMORANDUM AND ORDER

Today we address Sustainable Energy and Economic Development Coalition's (SEED's) appeal of the Atomic Safety and Licensing Board's denial of SEED's motion to file a late-filed contention in the proceeding regarding Interim Storage Partners LLC's (ISP's) application to build and operate a consolidated

interim storage facility (CISF) in Andrews County, TX.¹ For the reasons described below, we affirm the Board's decision.

I. BACKGROUND

ISP proposes to locate its CISF adjacent to an existing low-level radioactive waste disposal facility owned and operated by Waste Control Specialists, LLC, which has partnered with ISP in the proposed CISF project.² If licensed, the CISF would be authorized to store up to 5,000 metric tons of waste in NRC-approved packages for up to forty years.³

The NRC published notice of ISP's application in August 2018 and offered interested persons an opportunity to request a hearing.⁴ SEED joined several other organizations (collectively, Joint Petitioners) in filing a hearing request with several contentions.⁵ The Board found that SEED demonstrated standing but denied Joint Petitioners' hearing request because none of the proposed contentions were admissible.⁶

Thereafter, SEED filed with the Board a motion for leave to admit an additional contention (Contention 17) based on the Nuclear Waste Technical Review Board (NWTRB) September 2019 report to Congress and the Secretary of Energy.⁷ The Board denied SEED's motion and found that SEED had not shown good cause for filing proposed Contention 17 after the deadline and that Contention 17 was inadmissible.⁸ In affirming the Board's decision on appeal, we do not reach the question of whether SEED has shown good cause for filing

¹ See Interim Storage Partners LLC, License Application, rev. 2 (July 19, 2018), at 1-1 (ADAMS accession no. ML18221A397 (package)) (License Application).

² See *id.* at 1-4, 1-5.

³ WCS Consolidated Interim Spent Fuel Storage Facility Environmental Report, rev. 2 (July 19, 2018), at 1-1 (ML18221A405 (package)) (Environmental Report).

⁴ Interim Storage Partners Waste Control Specialists Consolidated Interim Storage Facility, 83 Fed. Reg. 44,070, 44,070-75 (Aug. 29, 2018), *corrected*, 83 Fed. Reg. 44,680 (Aug. 31, 2018) (correcting the deadline date for petitioners to request a hearing to October 29, 2018).

⁵ Petition of Don't Waste Michigan, Citizens' Environmental Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, Inc., San Luis Obispo Mothers for Peace, Sustainable Energy and Economic Development Coalition, and Leona Morgan, Individually, to Intervene, and Request for an Adjudicatory Hearing (Nov. 13, 2018).

⁶ LBP-19-7, 90 NRC 31, 39, 87-109 (2019).

⁷ See Motion of Intervenor Sustainable Energy and Economic Development Coalition for Leave to File Late-Filed Contention, and Contention 17 (Oct. 23, 2019), at 1-2 (SEED Motion); U.S. Nuclear Waste Technical Review Board, "Preparing for Nuclear Waste Transportation: Technical Issues that Need to Be Addressed in Preparing for a Nationwide Effort to Transport Spent Nuclear Fuel and High-Level Radioactive Waste" (Sept. 2019) (ML19297A235) (NWTRB Report).

⁸ LBP-19-11, 90 NRC 358, 362-68 (2019).

proposed Contention 17 after the deadline because SEED has not shown error in the Board's determination regarding the admissibility of Contention 17.⁹

II. DISCUSSION

A. Standard of Review

Our regulations allow a petitioner whose hearing request has been wholly denied to appeal.¹⁰ We afford substantial deference to the Board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion.¹¹

B. SEED's Proposed Contention 17

In proposed Contention 17, SEED asserted that ISP's Environmental Report was insufficient because it did not account for the findings of the NWTRB Report.¹² SEED argued that the NWTRB Report "significantly alters . . . the scope of this proceeding" beyond the question of whether ISP's application to build and construct a proposed CISF meets our regulations.¹³ SEED asserted that, based on the NWTRB Report, a range of potential waste transportation and packaging issues must be addressed.¹⁴ According to SEED, these issues include: improvements to highways and rail lines that might be used for shipments; the deployment of dry transfer systems (DTSS) at reactor sites to repackage fuel into standardized transportation, aging, and disposal canisters that DOE may develop in the future; and the actual timing and cost of future shipments, especially those involving high-burnup fuel.¹⁵ SEED claimed that ISP must evaluate these additional issues or the environmental effects of waste transportation to the site will be impermissibly segmented from those associated with building and operating the proposed CISF.¹⁶

⁹ Notice of Appeal of LBP-19-11 by Intervenor Sustainable Energy and Economic Development Coalition and Brief in Support of Appeal (Jan. 7, 2020) (SEED Appeal).

¹⁰ 10 C.F.R. § 2.311(c).

¹¹ See, e.g., *Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1, 2, and 3), CLI-17-5, 85 NRC 87, 91 (2017); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-16-9, 83 NRC 472, 482 (2016).

¹² See SEED Motion at 5-20.

¹³ *Id.* at 4.

¹⁴ See *id.* at 5-7.

¹⁵ See *id.* at 5-7, 9-11, 19-20.

¹⁶ See *id.* at 11-13.

The Board rejected SEED's argument and found that proposed Contention 17 did not raise a genuine dispute with the transportation evaluations already contained in ISP's application. The Board found ISP's Environmental Report addressed the potential environmental impacts of transporting spent nuclear fuel to the proposed CISF but that SEED did not challenge the discussion in the Environmental Report and moreover "fail[ed] to acknowledge or dispute any safety analyses, aging management plans or quality assurance programs described in ISP's application."¹⁷ The Board ruled that proposed Contention 17 therefore did not meet the threshold admissibility requirements of 10 C.F.R. § 2.309(f)(1)(vi).¹⁸

The Board also found proposed Contention 17 to be outside the scope of this proceeding. ISP did not seek approval for waste transportation, packaging, or repackaging activities like those addressed by the NWTRB Report.¹⁹ Instead, the Board determined that the proposed CISF would accept only NRC-approved transportation and waste packages, which the NWTRB Report acknowledged are currently in use and could be shipped in the near term.²⁰ New transportation and waste package designs would be reviewed separately under our regulations in 10 C.F.R. Part 71.²¹ Further, the title holders of spent nuclear fuel — which include private companies — would be responsible for transporting waste to the proposed facility, not ISP.²² Accordingly, the Board found SEED's assertion that ISP must evaluate the impacts associated with the development and deployment of future packaging systems and transportation to be outside the scope of this proceeding.²³

On appeal, SEED argues (as it did before the Board) that the National Environmental Policy Act (NEPA) requires ISP to further evaluate the environmental effects of waste transportation and repackaging.²⁴ SEED also asserts that the Board impermissibly raised SEED's burden to demonstrate the admissibility of proposed Contention 17.²⁵ However, SEED does not challenge the Board's finding that ISP's Environmental Report has already evaluated the expected impacts

¹⁷ LBP-19-11, 90 NRC at 367. ISP's evaluation of the environmental impacts of transporting spent nuclear fuel (including high-burnup fuel) is set forth in its Environmental Report. *See* Environmental Report at 4-9 to -10, 4-12, 4-16, 4-23.

¹⁸ LBP-19-11, 90 NRC at 367.

¹⁹ *See id.* at 366-67.

²⁰ *See id.* at 366; *see also* NWTRB Report at xxiii, xxvii (noting that commercial spent nuclear fuel currently stored in NRC-approved dual-purpose storage and transportation canisters "likely could be shipped within a year or two" of developing a destination site and obtaining funding).

²¹ LBP-19-11, 90 NRC at 367-68.

²² *Id.* at 367.

²³ *Id.* at 367-68.

²⁴ *See* SEED Appeal at 17-19.

²⁵ *See id.* at 19.

of transporting waste in NRC-approved packages to its proposed facility. SEED therefore does not show that the Board erred.

SEED also argues on appeal that proposed Contention 17 should be admitted because the NWTRB Report includes materially different information than what is in ISP's application.²⁶ Specifically, SEED states that the NWTRB Report discusses DOE's potential development of standardized waste canisters and the need for at-reactor DTSs to load waste from existing packages into those canisters, while ISP's application does not.²⁷ But as the Board explained, the NWTRB Report's recommendations — advice to DOE on how to advance its plans for nuclear waste transportation, storage, and disposal solutions at the Federal level — do not determine the scope of ISP's project or this licensing proceeding.²⁸ The NWTRB Report does not provide a legal basis to expand the scope of this proceeding beyond what our regulations require.²⁹ We see no error in the Board's reasoning.

Further, we do not agree with SEED that the Board's refusal to admit proposed Contention 17 will result in an incomplete evaluation of the project's environmental impacts under NEPA. As we have noted, ISP's application already evaluates the impacts of waste transportation to the proposed CISF during the proposed license term.³⁰ Moreover, the NRC's Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel, as codified in our regulations, evaluates the environmental impacts of DTS construction and waste repackaging beyond the proposed license term.³¹ We would require separate safety and environmental reviews before we approve any future license application from DOE (or another entity) for new transportation or storage packages or for the construction and operation of a DTS.

²⁶ See *id.* at 15-17.

²⁷ *Id.* at 16.

²⁸ See LBP-19-11, 90 NRC at 366-67.

²⁹ *Id.*

³⁰ See note 17, *supra*. Although ISP's application does not analyze the impacts of building and operating a DTS to enable spent fuel repackaging at its facility, the Board found ISP was not required to do so; ISP does not seek authorization to construct or operate a DTS. See LBP-19-11, 90 NRC at 368. Our regulations do not require an applicant to address the impacts of spent nuclear fuel storage beyond the license term. See 10 C.F.R. § 51.23(b).

³¹ See "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel" (Final Report), NUREG-2157, vol. 1, ch. 5 (Sept. 2014) (ML14196A105); 10 C.F.R. § 51.23(b). The environmental impacts described in NUREG-2157 are deemed incorporated into the environmental impact statement for an independent spent fuel storage installation. 10 C.F.R. §§ 51.23(b), 51.80(b)(1).

III. CONCLUSION

For the foregoing reasons, we *affirm* the Board's decision denying SEED's motion for leave to file proposed Contention 17.

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 4th day of December 2020.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

Docket No. 72-1050-ISFSI

INTERIM STORAGE PARTNERS LLC
(WCS Consolidated Interim Storage
Facility)

December 17, 2020

NUCLEAR WASTE POLICY ACT

The NWPA does not authorize DOE to take title to spent nuclear fuel before a permanent repository is available. *See* Nuclear Waste Policy Act of 1982, as amended, 42 U.S.C. §§ 10101-10270 (2012).

LICENSE CONDITIONS

A license may be conditioned to anticipate a change in the law.

ADMINISTRATIVE PROCEDURE ACT

Conditioning a license to anticipate a change in the law does not violate the Administrative Procedure Act's prohibition on an agency acting "unlawfully."

APPEALS

We do not permit a participant to raise new arguments on appeal. *See Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 546 (2009).

CREDIBLE ACCIDENTS

A facility need not be designed to withstand every conceivable accident, but it must be designed to withstand those found to be credible. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 259 (2001).

REGULATORY GUIDES

Regulatory guidance documents describe approaches to compliance that have been deemed acceptable by the Staff in the past, but regulatory guides do not create new regulatory requirements. *Private Fuel Storage*, CLI-01-22, 54 NRC at 264; *International Uranium (USA) Corp.* (Request for Materials License Amendment), CLI-00-1, 51 NRC 9, 19 (2000). Where an applicant follows an applicable guidance document, the burden is on the petitioner to show that the application nonetheless falls short of regulatory requirements.

LICENSING

The Board properly found that challenges regarding as-yet-unknown waste transportation routes were outside the scope of the proceeding to license a consolidated interim storage facility.

INDEPENDENT SPENT FUEL STORAGE INSTALLATION

NRC regulations governing independent spent fuel storage installations do not require a dry transfer system for the repackaging of spent nuclear fuel to be in place during the period of licensed operation.

NATIONAL ENVIRONMENTAL POLICY ACT

NRC regulations do not require a license applicant to describe in its environmental report the impacts of building and operating a dry transfer system after the period of licensed operation, which are already described in the Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel.

NATIONAL ENVIRONMENTAL POLICY ACT

An agency is not required to conduct an environmental analysis of every alternative suggested by commenters. The First Circuit's decision in *Dubois v. USDA*, 102 F.3d 1273 (1st Cir. 1996) only required that when a proposed project may have serious adverse environmental impacts, an agency must ad-

dress “reasonably thoughtful” alternative proposals and explain its reasoning if it rejected those proposals.

NATIONAL ENVIRONMENTAL POLICY ACT

Board correctly rejected contention claiming that an applicant must consider the effects of a terrorist attack in its environmental analysis. *See AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124 (2007), *review denied*, *N.J. Dep’t of Env’tl. Prot. v. NRC*, 561 F.3d 132 (3d Cir. 2009).

MOTION TO REOPEN

Although the Commission has jurisdiction to consider motions to reopen the record, it will often remand such motions to the Board. *See, e.g., Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 191, 211 (2020); *Virginia Electric and Power Co.* (North Anna Power Station, Unit 3), CLI-12-14, 75 NRC 692, 701-02 (2012).

MEMORANDUM AND ORDER

This proceeding involves the application of Interim Storage Partners LLC (ISP) for a license to construct and operate a consolidated interim storage facility (CISF) in Andrews County, Texas. Today we address the appeals of an Atomic Safety and Licensing Board decision from petitioners Beyond Nuclear, Inc. (Beyond Nuclear); Fasken Land and Minerals, Ltd. and Permian Basin Land and Royalty Owners (together, Fasken); and a coalition of petitioners known as the “Joint Petitioners.”¹ We also refer Fasken’s motion to admit a new contention based on the Staff’s draft environmental impact statement to the Board for consideration.²

¹ LBP-19-7, 90 NRC 31 (2019). Joint Petitioners are a coalition of Don’t Waste Michigan, Citizens’ Environmental Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, Inc., San Louis Obispo Mothers for Peace, Sustainable Energy and Economic Development Coalition (SEED Coalition), and Leona Morgan, individually.

² *See* Fasken Land and Minerals, Ltd.’s and Permian Basin Land and Royalty Owners Motion for Leave to File New and/or Amended Contention (July 6, 2020) (Fasken Motion for Contention 5); *see also* NRC Staff’s Answer in Opposition to Fasken Oil and Ranch, Ltd.’s and Permian Basin Land and Royalty Owners’ Motion to Reopen the Record and File New Contention 5 (July 31, 2020); Interim Storage Partners LLC’s Answer Opposing Fasken’s and PBLRO’s Second Motion to Reopen the Record and Motion for Leave to File New Contention “5” (July 31, 2020).

I. BACKGROUND

ISP is a joint venture between Waste Control Specialists LLC (WCS) and Orano CIS LLC formed to design, build, and operate the WCS CISF.³ The proposed CISF would be located within the owner-controlled area of the existing WCS site in Andrews, Texas, which currently includes two separate low-level radioactive waste (LLRW) disposal facilities.⁴ ISP has applied for a forty-year license to store 5,000 metric tons of spent nuclear fuel (SNF), mixed oxide fuel, and Greater than Class C LLRW in the proposed CISF.⁵ If the license is granted, ISP anticipates that it will request license amendments for seven expansion phases over the next twenty years, and the CISF may ultimately store up to 40,000 metric tons of waste.⁶

The Board found that although Beyond Nuclear, Fasken, and at least one member of the Joint Petitioners had established standing, none proffered an admissible contention.⁷ Beyond Nuclear, Fasken, and Joint Petitioners have appealed the denial of their hearing requests, and our decision today addresses those appeals. We also address Fasken's request for access to sensitive unclassified non-safeguards information (SUNSI) relating to one of the contentions the Board rejected in its ruling.⁸

Also, the Board initially found that Sierra Club had demonstrated standing and proposed an admissible contention.⁹ Sierra Club's contention has since been dismissed as moot, and we will address Sierra Club's appeals separately.¹⁰ On December 13, 2019, the Board rejected a late-filed contention proposed by Joint Petitioners and terminated the proceeding.¹¹

³ WCS Consolidated Interim Storage Facility System Safety Analysis Report (Public Version), Docket No. 72-1050, rev. 2 (Aug. 9, 2018), at 1-2 (ADAMS accession no. ML18221A408 (package)) (SAR).

⁴ *Id.* at 1-2.

⁵ WCS Consolidated Interim Spent Fuel Storage Facility Environmental Report, Docket No. 72-1050, rev. 2 (Aug. 9, 2018), at 1-1 (ML18221A405 (package)) (Environmental Report).

⁶ Environmental Report at 1-1.

⁷ LBP-19-7, 90 NRC at 39.

⁸ Appeal of Staff Denial of Petitioners' Request for SUNSI Information Related to ISP's Responses to RAIs (Feb. 12, 2020) (Fasken SUNSI Appeal); *see also* Request for Sensitive Unclassified Non-Safeguards Information (SUNSI) regarding Interim Storage Partner's Waste Control Specialist Consolidated Interim Storage Facility (Jan. 16, 2020) (Fasken SUNSI Request).

⁹ *See* LBP-19-7, 90 NRC at 50, 78-80.

¹⁰ *See* LBP-19-9, 90 NRC 181 (2019); Sierra Club's Brief in Support of Appeal from Atomic Safety and Licensing Board Rulings Denying Admissibility of Contentions in Licensing Proceeding (Dec. 13, 2019). The Board's dismissal of Sierra Club's contention has mooted ISP's appeal of the decision granting Sierra Club a hearing, and we therefore dismiss ISP's appeal without addressing its merits.

¹¹ *See* LBP-19-11, 90 NRC 258 (2019), *aff'd*, CLI-20-13, 92 NRC 457 (2020).

II. DISCUSSION

A. Standard of Review

Our regulations allow a petitioner whose hearing request has been wholly denied to appeal.¹² We generally defer to the Board on matters of contention admissibility and standing unless an appeal demonstrates an error of law or abuse of discretion.¹³

B. Beyond Nuclear's Appeal

Beyond Nuclear proposed one contention in which it asserted that the application must be denied because “the central premise of ISP’s application” is that the U.S. Department of Energy (DOE) will take ownership of the waste and contract with ISP to store it until a permanent repository is available and this arrangement would violate the Nuclear Waste Policy Act (NWPA).¹⁴ The contention is substantially similar to the claim raised by Beyond Nuclear and other petitioners in the Holtec International CISF application proceeding, and we affirm the Board here for the reasons explained in our recent decision in that proceeding.¹⁵

The Staff, ISP, and the Board all recognize that the NWPA does not authorize DOE to take title to SNF at this time.¹⁶ ISP’s proposed license would include a license condition requiring that, before ISP could begin operations, it must have storage contracts in place assuring that ISP’s clients would fund operations.¹⁷ And the proposed wording of the license provides that DOE could be that client.¹⁸ Specifically, the proposed license condition states that ISP must

¹² 10 C.F.R. § 2.311(c).

¹³ See, e.g., *Crow Butte Resources, Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 13-14 (2014); *Strata Energy, Inc.* (Ross *In Situ* Uranium Recovery Project), CLI-12-12, 75 NRC 603, 608-13 (2012).

¹⁴ Beyond Nuclear, Inc.’s Hearing Request and Petition to Intervene (Oct. 3, 2018) (Beyond Nuclear Petition).

¹⁵ See *Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 173-76 (2020); Beyond Nuclear, Inc.’s Hearing Request and Petition to Intervene (Sept. 14, 2018), at 10-11 (ML18257A324).

¹⁶ See LBP-19-7, 90 NRC at 57; Interim Storage Partners LLC’s Response to the Atomic Safety and Licensing Board’s Questions Regarding the U.S. Department of Energy’s Authority Under the Nuclear Waste Policy Act (June 28, 2019) (ISP Response to Board Questions) (acknowledging that DOE may not take title under current law).

¹⁷ See Interim Storage Partners LLC, License Application (Aug. 9, 2018) (License Application), Attach. A, License for Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste, at 3 (ML18221A397 (package)).

¹⁸ *Id.*

have contracts in place “with [DOE] or other SNF title holder(s) stipulating that the DOE or the other SNF title holder(s) is/are responsible for funding operations required for storing the material” prior to commencing operations.¹⁹ In other words, the proposed license would be conditioned on ISP contracting either with the nuclear power plant operators who generated the spent nuclear fuel, consistent with current law, or with DOE, which would require statutory amendment.

ISP acknowledges that it hopes Congress will change the law to allow DOE to enter storage contracts prior to the availability of a repository.²⁰ Thus, if the proposed license were to be issued, ISP could take advantage of a future change in the law by bidding for a DOE contract without having to first amend its license.

The Board found that Beyond Nuclear’s proposed contention did not raise a genuine dispute with the application.²¹ The Board reasoned that rather than being centrally premised on ISP contracting with DOE in violation of the NWPA, the application also includes the option of contracting with nuclear plant owners, which is consistent with existing law, and whether that option will prove commercially viable was not an issue before it.²²

On appeal, Beyond Nuclear argues that the Board erred by “reframing” the contention to eliminate its central premise and thereby “failed to judge the contention by its own terms.”²³ Beyond Nuclear further argues that the proposed license condition would, contrary to law, give “ISP and/or DOE . . . rights under the license” to enter storage contracts.²⁴ Along the same lines, it claims that the license would “allow DOE to be an owner of spent fuel during transportation and storage” at the CISF.²⁵ Beyond Nuclear misunderstands the nature of the proposed license and its conditions.

As an initial matter, the Board agreed with Beyond Nuclear’s central argument that the NWPA prevents DOE from taking title to SNF at this time. But this does not mean that the application must automatically be rejected. The proposed license would not “authorize” ISP to enter into illegal contracts. Rather, the proposed license would require that, before it can begin operations, ISP must have contracts in place to ensure it has a flow of operating funds. Because an illegal contract is unenforceable, ISP plainly could not rely on such contracts to

¹⁹ *Id.*

²⁰ ISP Response to Board Questions at 3.

²¹ LBP-19-7, 90 NRC at 57-58.

²² *Id.*

²³ Beyond Nuclear’s Brief on Appeal of LBP-19-07 (Sept. 17, 2019), at 11 (Beyond Nuclear Appeal).

²⁴ *Id.* at 12.

²⁵ *Id.* at 2, 16.

ensure its operating funds.²⁶ Moreover, granting a license to ISP would not effect or allow a change of spent fuel ownership as between two parties unrelated to ISP (the nuclear plant owners and the DOE). Similarly, issuing a license to ISP would not grant any rights to DOE. We therefore are not persuaded by Beyond Nuclear's arguments that the proposed license would authorize illegal activity.

Beyond Nuclear also asserts that issuance of the license would violate the Administrative Procedure Act's prohibition against agencies acting unlawfully, because "the license application contains provisions which, if implemented, would violate the NWPAA."²⁷

Similarly, it argues that issuing the license would exceed our statutory authority because we have no statutory authority to violate the NWPAA.²⁸ It argues that its challenge to the license was dismissed based on the hope for a change in the law or an expectation that DOE and ISP would not violate the law.²⁹ But as we have explained above, the proposed license would not authorize ISP to enter storage contracts with DOE and the proposed license is not premised on illegal activity because there is a lawful option by which ISP could fulfil the proposed license condition.

Beyond Nuclear has not shown error in the Board's interpretation of the legal force of the disputed license condition. The Board's conclusion that Beyond Nuclear had raised no genuine dispute with the application was reasonable. We therefore affirm its decision to dismiss this contention.

C. Fasken's Appeal

Fasken appeals the Board's determinations regarding three of its six proposed contentions.³⁰

1. Fasken's Contention 2 (Abandoned Oil and Gas Wells) and SUNSI Access Request

In Contention 2, Fasken argued that the application failed to account for "unstable geological characteristics" and "soil stability problems" of the site attributable to abandoned and "orphan" oil and gas wells in the region.³¹ Fasken supported this contention with the declaration of a geologist, Aaron Pachlhofer,

²⁶ See, e.g., *Kaiser Steel Corp. v. Mullins*, 455 U.S. 72, 77-78 (1982).

²⁷ Beyond Nuclear Appeal at 13-14 (citing 5 U.S.C. § 706(2)(A), (C)).

²⁸ *Id.* at 13.

²⁹ *Id.* at 13-16.

³⁰ Fasken and PBLRO's Brief on Appeal of LBP-19-07 (Sept. 17, 2019) (Fasken Appeal).

³¹ See Petition of Permian Basin Land and Royalty Organization and Fasken Land and Minerals for Intervention and Request for Hearing, at 15-17 (Oct. 29, 2018) (Fasken Petition).

who described the hydrogeology of the region and oil development in the area.³² Fasken asserted that there were 4,579 well bores within a ten-mile radius of the proposed site.³³ Fasken further claimed that the abandoned wells could provide a path for contaminants to reach the groundwater.³⁴ It argued that the application did not address this information and therefore “failed to analyze regional geography” and could not meet the requirements of 10 C.F.R. § 72.103(a)(1).³⁵

ISP opposed the contention in its entirety, but the Staff initially supported its admission in part.³⁶ In its response to Fasken’s hearing request, the Staff acknowledged that Fasken had raised an issue of whether the presence of a large number of improperly abandoned wells could impact site stability.³⁷ The Staff changed its position and considered the issue moot after ISP’s response to a Staff Request for Additional Information (RAI) confirmed that the proposed site itself contains only a single dry hole, which has been properly plugged and abandoned.³⁸

The Board dismissed the contention because it was factually unsupported and did not address portions of the application that discuss site stability matters.³⁹ In particular, the Board pointed out that ISP’s safety evaluation acknowledged that oil and gas wells are in the general vicinity of the site and addressed soil stability, induced seismicity, and vibratory ground motion.⁴⁰ The Board found that unless Fasken could show some reason why the offsite wells would cause “unstable geological characteristics, soil stability problems or potential for vibratory ground motion at the site,” ISP was not required to provide more information.⁴¹ The Board further found that the claims that the wells could provide a conduit for contaminants to the groundwater did not dispute relevant portions of the

³² Fasken Petition, Ex. 3, Declaration of Aaron Pachlhofer (Oct. 29, 2018), at 4-7 (Pachlhofer Declaration).

³³ See Fasken Petition at 16; Tr. at 324 (Mr. Laughlin) (providing revised figure for number of wells).

³⁴ Fasken Petition at 17; *see also* Pachlhofer Declaration at 3-5.

³⁵ Fasken Petition at 15-17.

³⁶ Interim Storage Partners LLC’s Answer Opposing Hearing Request and Petition to Intervene filed by Permian Basin Land and Royalty Organization and Fasken Land and Minerals (Nov. 20, 2018), at 34-41 (ISP Answer to Fasken Petition); NRC Staff’s Response to Petitions to Intervene and Requests for Hearing Filed by Permian Basin Land and Royalty Organization and Fasken Land and Minerals (Nov. 23, 2018), at 15-16 (Staff Answer to Fasken Petition).

³⁷ Staff Answer to Fasken Petition at 16.

³⁸ See Letter from Jeffery D. Isakson, ISP, to NRC Document Control Desk, “Submittal of Partial Response to First RAI” (May 31, 2019) (ML19156A048 (package)) (First RAI Response Package), Encl. 3, RAI Responses (Public Version), at 3 (First RAI Responses); *see* Tr. at 328 (Mr. Gillespie).

³⁹ LBP-19-7, 90 NRC at 112-13 (citing SAR §§ 2.1, 2.6.2; SAR, Attach. D § 4.3 (proprietary)).

⁴⁰ *Id.* at 112 & n.544.

⁴¹ *Id.* at 112 (quoting 10 C.F.R. § 72.103(a)(1)).

application, which explained why groundwater contamination from spent fuel dry storage is unlikely at the site.⁴² The Board concluded that Fasken had shown no plausible impact from the existence of wells up to ten miles from the site when there is only a single dry hole within the site's boundary.⁴³ It therefore dismissed the contention because it did not present a genuine dispute with the application and for lack of factual support.

We defer to the Board's finding that the contention is not supported in fact. Fasken's appeal renews its critique that the application does not adequately discuss the presence of nearby wells, but the appeal does not address the Board's ruling that its contention did not show how abandoned or orphaned wells outside the boundary of the site and up to ten miles away could affect the soil stability of the site.⁴⁴ Mr. Pachlhofer's declaration does not contend that abandoned or active wells five, ten, or even one mile from the proposed CISF would cause soil subsidence at the site.⁴⁵

On appeal, Fasken also argues that the plain language of 10 C.F.R. § 72.103(a)(1) requires ISP to analyze the entire region in which the proposed site is located for "unstable geological characteristics."⁴⁶ But Fasken's suggestion that ISP must discuss soil stability throughout the entire region of the facility without regard to the potential impacts to the proposed facility is unpersuasive. The regulation Fasken cites lists several investigative methods to ensure site stability, only one of which mentions the region: sites east of the Rocky Mountains such as the proposed site "will be acceptable if the results from onsite foundation and geological investigation, literature review, and regional geological reconnaissance show no unstable geological characteristics, soil stability problems, or potential for [excessive] vibratory ground motions *at the site*."⁴⁷ Although the regulation directs "regional geological reconnaissance," it is clear that the purpose of all these investigative methods is to determine the stability of the proposed site, not the region in general.⁴⁸ We therefore affirm the Board's interpretation of 10 C.F.R. § 72.103(a)(1).

⁴² *Id.* at 113 (citing SAR § 2.7 ("The method of storage (dry cask), the nature of the storage casks, the extremely low permeability of the red bed clay and the depth to groundwater beneath the CISF preclude the possibility of groundwater contamination from the operation of the WCS CISF.")).

⁴³ *Id.*

⁴⁴ Fasken Petition at 4-12.

⁴⁵ *See* Pachlhofer Declaration at 6-7.

⁴⁶ Fasken Appeal at 5-6.

⁴⁷ 10 C.F.R. § 72.103(a)(1) (emphasis added).

⁴⁸ Fasken additionally challenges the Board's ruling that it failed to dispute relevant portions of the application because it did cite portions of the SAR in its petition. Fasken Appeal at 5-6. But given that the contention lacked factual support, whether it provided cites to certain SAR sections is irrelevant. We additionally find no merit to Fasken's argument that the Staff should not have changed its position concerning the contention's admissibility.

On January 16, 2020, Fasken submitted to the NRC Staff a request for access to the non-publicly available portion of an RAI response released on January 6, 2020. Fasken stated that it needed the information to support Contention 2.⁴⁹ The Staff denied the request on January 27, 2020, and Fasken submitted an appeal on February 12, 2020.⁵⁰

Fasken argues that it needs the information in order to participate meaningfully in the licensing proceeding. The information Fasken requests is detailed information about the location, type, and status of oil, gas, and water wells within a 10-kilometer radius of the proposed CISF site, which Fasken argues is relevant to its Contention 2. But as described above, the Board found Contention 2 inadmissible principally because Fasken did not show that wells located away from the site could affect soil stability on the site. Nothing in Fasken's SUNSI appeal contravenes that analysis. We therefore deny Fasken's request for access to the non-public portions of ISP's RAI response.

2. *Fasken's Contention 3 (Airplane Crash)*

In Contention 3, Fasken claimed that ISP's emergency response plan for the facility was deficient in failing to account for aircraft crashes and other hazards: "The Applicant's Emergency Response Plan (ERP) fails to address how licensee will protect the facility from credible fire and explosion effects including those that are caused by aircraft crashes."⁵¹ Fasken argued that the ERP does not conform to the requirements of 10 C.F.R. § 72.122(c), which requires that structures, systems, and components important to safety (SSCs) "must be designed and located so that they can continue to 'perform their safety functions effectively under credible fire and explosion exposure conditions'" or to 10 C.F.R. § 72.24(d)(2), which requires that the application evaluate SSCs designed to prevent and mitigate accidents.⁵² Fasken reasoned that ISP had identified an airplane crash as a "credible accident" because it is listed in the ERP.⁵³ Fasken further argued that the ERP must take into account the "size, velocity,

⁴⁹ Fasken SUNSI Request at 3.

⁵⁰ Letter from Sara Kirkwood, NRC, to Timothy Laughlin, Counsel for Fasken (Jan. 27, 2020) (Denial of Fasken SUNSI Request) (ML20024D860); *see also* Fasken SUNSI Appeal.

⁵¹ Fasken Petition at 18; *see* Consolidated Emergency Response Plan (Mar. 15, 2017) (ML17082-A054) (ERP).

⁵² Fasken Petition at 18-26 (quoting Final Report, Standard Review Plan for Spent Fuel Storage Facilities," NUREG-1567 (Mar. 2000), § 6.4.5 (ML003686776) (Dry Storage SRP) (emphasis removed)).

⁵³ *Id.* at 19; *see* ERP, app. C, Facility Emergency Action Levels.

weight and fuel loads” of various aircraft “when assessing the hazards” of such a crash.⁵⁴

The Board held that the contention did not dispute relevant portions of the application and therefore did not raise a genuine issue of material fact concerning emergency planning.⁵⁵ The Board found that the contention mistakes matters that are to be addressed in the emergency plan with matters that are addressed elsewhere in the application. The Board explained that § 72.122(c) is a design requirement, compliance with which is addressed in the SAR, chapter 12, “Accident Analysis,” rather than in the emergency plan.⁵⁶ The Board further found that air crash accidents are not among the credible events listed.⁵⁷ Indeed, the emergency response plan explicitly states that it discusses responses to various posited scenarios, including those that have not been found to be credible.⁵⁸

On appeal, Fasken argues that the Board should have admitted its contention. First, it argues that aircraft crashes are credible accidents because there are three airports within fifty miles of the proposed facility.⁵⁹ Second, Fasken asserts that the Standard Review Plan for dry storage facilities requires an assessment of aircraft crashes regardless of whether such crashes are deemed “credible.”⁶⁰ Third, Fasken argues that the Board abused its discretion because it was inconsistent in its use of staff guidance documents in evaluating contention admissibility.⁶¹

With respect to Fasken’s argument that an aircraft crash is credible because the facility is within fifty miles of three airports, we first observe that Fasken offers no factual or expert support for this argument. This argument is new

⁵⁴ Fasken Petition at 22 (citing Dry Storage SRP § 2.5.2). Fasken further claimed in Contention 3 that the ERP “relies on outside assistance to handle catastrophic fires and explosions and does not specify how their current suppression systems will effectively mitigate fires and explosions until help arrives.” *Id.* at 19, 22-23. It argued that emergency responders are located many miles from the site although “time is of the essence” in mitigating radiation exposure. *Id.* at 22-25. These arguments appear to have been abandoned on appeal.

⁵⁵ LBP-19-7, 90 NRC at 114-15.

⁵⁶ *Id.* at 114.

⁵⁷ *Id.* at 115. The Board observed that Fasken “appears to assume that all events that could trigger an emergency alert are necessarily credible events for which the facility must be designed to survive with its safety functions intact.” *Id.*

⁵⁸ SAR § 13.5, “Emergency Response Planning,” provides: “The [ERP] planning basis includes credible events as well as hypothetical accidents whose occurrence is not considered credible, so as not to limit the scope of Emergency Response Planning.”

⁵⁹ Fasken Appeal at 13.

⁶⁰ *Id.* at 13 (citing Dry Storage SRP § 2.5.2). The quoted section directs staff reviewers to “review potential hazards associated with nearby facilities [including airports and consider] aircraft size, velocity, weight and fuel load in assessing the hazards of aircraft crashes on an installation near an airport.”

⁶¹ *Id.* at 13-14.

on appeal.⁶² In addition, Fasken does not address the analysis ISP provided regarding the probability of such an accident, namely, that it is less than one in a million per year.⁶³ Fasken does not question ISP's analysis specifically or support its contention factually with anything other than the claim that airports are located within a fifty mile radius.

We also disagree with Fasken's argument that the Standard Review Plan for spent fuel facilities, § 2.5.2, requires an analysis of aircraft crash impacts without regard to whether such a crash is credible. Section 2.5.2, by its own terms, directs the Staff reviewer to ensure that the "methods used by the applicant to quantify offsite hazards are consistent with the guidance in chapter 15," which in turn directs that the reviewer ensure that credible events have been analyzed.⁶⁴ A facility need not be designed to withstand "every conceivable accident," but it must be designed to withstand those found to be credible.⁶⁵

We find unavailing Fasken's argument that the Board applied Staff guidance documents inconsistently in its analysis because the Board treated guidance documents as controlling in rejecting other contentions.⁶⁶ Regulatory Guides describe approaches to compliance that have been deemed acceptable by the Staff in the past, but they do not create new regulatory requirements.⁶⁷ Where an applicant follows an applicable guidance document, the burden is on the petitioner to show that the application nonetheless falls short of regulatory requirements. Fasken, however, has not identified an inconsistency in the Board's ruling on

⁶² We do not permit a participant to raise new arguments on appeal. See *Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 546 (2009).

⁶³ See First RAI Responses at 1; First RAI Response Package, Encl. 6, SAR Changed Pages (rev. 3 interim), at 4-12 (unnumbered). According to its RAI response, ISP used guidance in the "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," NUREG-0800, rev. 4 (Mar. 2010) § 3.5.1.6 (ML100331298).

⁶⁴ See Dry Storage SRP § 15.5.

⁶⁵ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 259 (2001). In *Private Fuel Storage*, we ruled that the threshold probability for a design basis event (that is, whether an event is credible) should be one in one million for a spent fuel storage installation. *Id.* at 265. The *Private Fuel Storage* decision specifically addressed the probability of an aircraft crash into the facility. *Id.* at 263.

⁶⁶ Fasken Appeal at 13-14. Fasken specifically cites the Board's rejection of Sierra Club's proposed Contention 15. But the Board did not find that the guidance document was legally binding; it found that Sierra Club did not show how ISP had violated NEPA or NRC regulations in its environmental justice analysis. See LBP-19-7, 90 NRC at 84; see also "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs" (Final Report), NUREG-1748 (Aug. 2003), at 6-25 (ML032450279).

⁶⁷ See *Private Fuel Storage*, CLI-01-22, 54 NRC at 264; *International Uranium (USA) Corp.* (Request for Materials License Amendment), CLI-00-1, 51 NRC 9, 19 (2000) ("NRC Guidance Documents are routine agency policy pronouncements that do not carry the binding effect of regulations.").

Contention 3 or an abuse of discretion by the Board in its application of the guidance documents.

We therefore affirm the Board's decision to dismiss Fasken Contention 3.

3. *Fasken's Contention 4 (Groundwater and Aquifers); Motion to Reopen; Motion to Amend Contention 4 Based on New Information*

In its proposed Contention 4, Fasken argued that both the Environmental Report and SAR failed to consider the adverse effect the CISF will have on groundwater.⁶⁸ Specifically, Fasken argued that the Environmental Report did not comply with 10 C.F.R. § 51.45 and that the SAR did not “contain ‘adequate information for an independent review of all subsurface hydrology-related design bases and compliance with dose radiological exposure standards’” to ensure compliance with 10 C.F.R. § 72.122(b)(4).⁶⁹ Fasken's expert Mr. Pachlhofer asserted that four aquifers are in Andrews county at or near the WCS site.⁷⁰ Fasken also claimed that water within one of these, the Antler Formation, is used for drinking and the formation is present within a few feet of the surface on the WCS site.⁷¹ However, the only support Fasken supplied for the claim that the proposed CISF could contaminate the groundwater was the assertion that ISP has conceded that an airplane crash into the facility is a credible event that could cause the release of radionuclides.⁷²

On January 21, 2020, Fasken filed a motion to reopen the proceeding and to admit an amended Contention 4 based on ISP's response to an RAI from the Staff.⁷³ Fasken's motion argues that ISP's RAI response provided a materially different description of the subsurface environment at the site.

⁶⁸ Fasken Petition at 26-31.

⁶⁹ *Id.* at 27 (quoting Dry Storage SRP § 2.4.5).

⁷⁰ Pachlhofer Declaration at 4.

⁷¹ Fasken Petition at 30, Pachlhofer Declaration at 4.

⁷² Fasken Petition at 27-28.

⁷³ Fasken Oil and Ranch, LTD and Permian Basin Land and Royalty Owners Motion to Reopen the Record for Purposes of Considering and Admitting an Amended Contention Based on New Information Provided by Interim Storage Partners in Response to NRC Requests for Additional Information (Jan. 21, 2020) (Fasken Motion to Reopen); Fasken Oil and Ranch, LTD and Permian Basin Land and Royalty Owners Motion for Leave to Amend Contention Four Regarding Interim Storage Partner's New Description of Groundwater Located below the Site and the Potential Impact the Site Will Have on the Groundwater (Jan. 21, 2020) (Fasken Motion to Amend Contention 4); *see also* Letter from Jeffery D. Isakson, ISP, to NRC Document Control Desk, “Submission of ISP Responses for RAIs and Associated Document Markups from First Request For Additional Information, Part 3” (Nov. 21, 2019), Encl. 3 (ML19337B502 (package)) (Part 3 RAI Response). Although the documents were received in November 2019, they were not publicly released until January 6, 2020.

The Board dismissed the original contention because Fasken had not raised a material dispute identifying a plausible pathway to the groundwater from the CISF. For the reasons it provided in analyzing Fasken Contention 3, the Board was unpersuaded by the argument that an aircraft accident presented a credible scenario that could result in a contamination release.⁷⁴ It found that Fasken did not challenge the finding in the SAR that four factors “preclude the possibility of groundwater contamination”: the canister design, the method of storage, the extremely low permeability of the red clay underlying the site, and the depth to the groundwater beneath the facility — about 225 feet to the shallowest water bearing zone.⁷⁵ In addition, the Board found that because the only portions of the application Fasken specifically challenged were in the SAR, not the Environmental Report, the contention failed as an environmental contention.⁷⁶

Fasken’s appeal challenges the Board’s ruling rejecting its claim concerning aircraft crashes.⁷⁷ For the reasons the Board explained and as described above, ISP never conceded that an aircraft crash was a credible event, and Fasken has not challenged ISP’s analysis concluding that such a crash is not a credible event.⁷⁸ Fasken’s petition provided no other theory by which the canisters could release radionuclides to the environment. In addition, Fasken did not challenge the Environmental Report’s conclusion that the proposed facility provides “no potential for a liquid pathway because the spent fuel contains no liquid component and the casks are sealed to prevent any liquids from contacting the spent fuel assemblies.”⁷⁹

Fasken next argues that it presented a genuine dispute “regarding the presence, location, and permeability of aquifers and formations below the proposed site.”⁸⁰ Fasken’s proposed amendment to Contention 4 also pertains to a claimed mischaracterization of the site. But neither Fasken’s original nor its amended Contention 4 identifies a significant disparity between the information in the SAR and the information in Mr. Pachlhofer’s declaration and the report on which he primarily relies.⁸¹ The report on which Mr. Pachlhofer relies acknowl-

⁷⁴ LBP-19-7, 90 NRC at 116.

⁷⁵ *Id.*; see SAR § 2.5, at 2-21.

⁷⁶ LBP-19-7, 90 NRC at 116.

⁷⁷ Fasken Appeal at 15-16. On appeal, Fasken also argues that its failure to cite portions of the Environmental Report should not preclude the contention’s admission as an environmental contention because the hydrology sections of the Environmental Report are repeated verbatim in the hydrology sections of the SAR. *Id.* at 15. However, Fasken’s challenge to the SAR was also unsupported.

⁷⁸ See *supra* Section II.C.2; LBP-19-7, 90 NRC at 115.

⁷⁹ See Environmental Report § 6.2, at 6-1.

⁸⁰ Fasken Appeal at 16.

⁸¹ See Fasken Petition, Ex. 4, Thomas M. Lehman & Ken Rainwater, “Geology of the WCS–Flying
(Continued)

edges that groundwater “is not present continuously beneath” the WCS site.⁸² Moreover, Fasken’s argument does not acknowledge the difference between a geologic formation and a water-saturated aquifer. While Mr. Pachlhofer’s declaration states that the Antlers Formation underlies the site and contains groundwater used for drinking water in Midland Texas, it does not claim that the Antlers Formation is saturated beneath the CISF site.⁸³ ISP’s application acknowledges that the Antlers Formation is under its site.⁸⁴ Moreover, even if there are minor disagreements between the SAR and Fasken’s materials, Fasken does not show how these relate to the underlying premise of its contention that the CISF would cause groundwater contamination.

Fasken’s proposed amendment to Contention 4 focuses on the argument that the application misrepresented the depth of groundwater at the site. In its proposed Amended Contention 4, Fasken argues that ISP has acknowledged in its RAI response that groundwater exists at the site only “a few inches to a few feet” below the surface.⁸⁵ But Fasken’s argument for amending Contention 4 is based on a misreading of ISP’s RAI response.

In RAI WR-11, the Staff asked ISP to identify the shallowest groundwater located beneath the “proposed CISF footprint.” ISP responded:

The shallowest groundwater beneath the proposed CISF footprint is a few inches to a few feet of saturation in the undifferentiated Antlers/Ogallala sediments starting at the northern fence line of the Protected Area boundary in the northeast corner. The sands and gravels containing the water at a 90- to 100-foot depth are part of a hydrostratigraphic unit termed the Antlers/Ogallala/Gatuña (OAG) by ISP joint venture member Waste Control Specialists.⁸⁶

Therefore, the RAI response did not state that groundwater was present a few feet or a few inches below the surface. Instead, it states that the depth of the groundwater is 90 to 100 feet below the surface and the saturated thickness is a few inches to a few feet. Fasken misinterprets the response.

The remainder of Fasken’s proposed amended argument turns on the claim

“W” Ranch, Andrews County, Texas” (April 2000) (Lehman and Rainwater Report). The Lehman and Rainwater Report focused on the Flying “W” Ranch area, immediately south of the proposed CISF, where there is currently a hazardous waste disposal site.

⁸² See Lehman and Rainwater Report at 16; *see also id.* at 30 (Fig. 10).

⁸³ Pachlhofer Declaration at 4; *see also* Fasken Appeal at 18.

⁸⁴ SAR at 2-22 to 2-23.

⁸⁵ See Fasken Motion to Reopen at 8; Fasken Motion to Amend Contention 4 at 7-8.

⁸⁶ Part 3 RAI Response at 59. ISP also acknowledged in its response that the SAR’s statement that the shallowest water bearing zone was at a depth of 225 feet and was measured at the neighboring WCS facility. *Id.*

that groundwater is present on the site no more than a few feet underground.⁸⁷ For example, Fasken argues that the Board erred in finding that the red clay layer under the site would form a natural barrier to the spread of any contamination.⁸⁸ Fasken reasons that the red clay layer cannot possibly overlie the shallowest aquifer because the Environmental Report states that the red clay layer is overlain by twenty-two to fifty-four feet of sand, gravel and alluvium, and “the red bed clays will not provide a natural barrier to the groundwater located inches below the site.”⁸⁹ Because there is no basis to conclude that groundwater exists “inches” below the surface, this argument is without merit.⁹⁰

We deny Fasken’s request to amend Contention 4 because it lacks factual support. We therefore do not consider whether Fasken has satisfied the standards necessary to prevail on a motion to reopen. We affirm the Board’s ruling on Fasken Contention 4.

D. Joint Petitioners’ Appeal

The Board found that only one of the Joint Petitioners had demonstrated standing based on the standing of SEED Coalition and SEED Coalition’s member Beatrice Gardiner-Aguilar.⁹¹ But the Board did not admit any of Joint Petitioners’ fifteen proposed contentions, and Joint Petitioners have appealed its decision with respect to seven of them.⁹² Joint Petitioners have additionally ap-

⁸⁷ Fasken Motion to Amend Contention 4 at 3, 7-8, 13 n.40, 16, 19, 21. Fasken also argues that the RAI response “admits that previous descriptions of groundwater were ‘not based on sufficient boring data.’” Fasken Motion to Amend at 14, 19 (citing Part 3 RAI Response at 45). But the Part 3 RAI Response makes a different point when it states that the Lehman and Rainwater Report, which Mr. Pachlhofer cites in his declaration, “was not based on sufficient boring data to distinguish the contacts between the Antlers and the Ogallala in the proposed CISF area.” Part 3 RAI Response at 45.

⁸⁸ Fasken Motion to Amend Contention 4 at 16, 21; *see also* LBP-19-7, 90 NRC at 116.

⁸⁹ Fasken Motion to Amend Contention 4 at 21 (citing Environmental Report § 4.3, at 4-28).

⁹⁰ *See also* NRC Staff’s Answer in Opposition to Fasken Oil and Ranch, Ltd and Permian Basin Land and Royalty Owners’ Amended Contention 4 and Accompanying Motion to Reopen the Record, at 7-8 (Feb. 13, 2020); Interim Storage Partners, LLC’s Answer Opposing Fasken’s and PBLRO’s Motion to Reopen the Record and Motion for Leave to Amend Contention Four, at 13-14 (Feb. 18, 2020). Fasken submitted a reply to ISP’s answer. *See* Fasken Oil and Ranch, Ltd.’s and Permian Basin Land and Royalty Owners’ Reply to Interim Storage Partners, LLC’s Answer Opposing Motion of Leave to Reopen the Record and Associated Motion for Leave to Amend Contention Four (Feb. 25, 2020). However, NRC regulations do not provide a right to reply to answers to a motion without prior permission from the Secretary of the Commission, and therefore Fasken’s reply has not been considered. *See* 10 C.F.R. § 2.323(c).

⁹¹ LBP-19-7, 90 NRC at 50-51.

⁹² Notice of Appeal of LBP-19-07 by Petitioners Don’t Waste Michigan, Citizens’ Environmental
(Continued)

pealed the Board's finding that its other members did not demonstrate standing.⁹³ Because we find the Board properly rejected the appealed contentions, we do not reach the standing issue.

1. Joint Petitioners' Contention 1 (NEPA Analysis of Transportation Impacts)

Joint Petitioners argued in proposed Contention 1 that the environmental impacts of waste transportation and storage at the proposed CISF must be assessed together as part of a "single, integrated project" under NEPA.⁹⁴ Joint Petitioners asserted that ISP's Environmental Report is lacking because it did not include "details and environmental impacts of a planned [twenty-year] shipping campaign involving at least 3,000 deliveries of SNF and GTCC waste to ISP."⁹⁵ Specifically, they claimed that the Environmental Report did not include "complete disclosure of all probable transportation routes, along with quantities of SNF and the likely radioisotopic contents" to be shipped.⁹⁶

The Board ruled that proposed Contention 1 was inadmissible because it did not raise a genuine dispute of material fact or law with the application, was outside the scope of this proceeding, and amounted to an impermissible attack on the NRC's licensing regulations in 10 C.F.R. Parts 51 and 72.⁹⁷ The Board found that ISP's application included an evaluation of the environmental impacts of waste transportation to the proposed CISF along several representative routes and that Joint Petitioners had not disputed any part of that evaluation.⁹⁸ The Board also noted that the actual routes that may one day be used to transport waste to the proposed CISF are not currently known and are not the subject of any NRC approval in this proceeding. According to the Board, Joint Petitioners

Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, Inc., San Luis Obispo Mothers for Peace, Sustainable Energy and Economic Development Coalition, and Leona Morgan, Individually, and Brief in Support of Appeal (Sept. 17, 2019) (Joint Petitioners Appeal).

⁹³ *Id.* at 4-18.

⁹⁴ Petition of Don't Waste Michigan, Citizens' Environmental Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, Inc., San Luis Obispo Mothers for Peace, Sustainable Energy and Economic Development Coalition, and Leona Morgan, Individually, to Intervene, and Request for an Adjudicatory Hearing (Nov. 13, 2018), at 4 (Joint Petitioners Petition).

⁹⁵ *Id.* at 41.

⁹⁶ *Id.* at 43.

⁹⁷ LBP-19-7, 90 NRC at 88-89.

⁹⁸ *Id.* (citing Environmental Report § 4.2, at 4-3 to 4-28).

did not provide legal authority to suggest additional or unknown routes must be evaluated now.⁹⁹

On appeal, Joint Petitioners reiterate their claim that ISP's application did not sufficiently address the environmental impacts of transporting waste to the proposed CISF.¹⁰⁰ But as the Board found, this proceeding does not include NRC review and approval of waste transportation routes; rather, its scope is confined to ISP's application for a license to build and operate a proposed CISF. Further, ISP's application includes an evaluation of the environmental impacts that would be expected along representative waste transportation routes to the proposed CISF from twelve different potential facilities; the Board found Joint Petitioners did not dispute any part of that evaluation.¹⁰¹ Joint Petitioners did not claim error in the Board's findings or reasoning and we see none. Accordingly, we affirm the Board's dismissal of Contention 1.

2. Joint Petitioners' Contention 4 (Underestimation of LLRW Volume)

Joint Petitioners argued in proposed Contention 4 that ISP's application underestimated the volume of LLRW that will be generated by the proposed CISF.¹⁰² They claim that the application does not account for LLRW that would be generated during repackaging of spent fuel from the casks and canisters at the CISF into "uniformly-constructed transportation, aging, and disposal canisters" that DOE may one day deploy to move waste from the proposed CISF to a permanent repository.¹⁰³ They argued that the application also "omit[s] mention of disposal of radioactively activated and radioactively contaminated concrete" resulting from decommissioning of "the concrete and subgrade materials that will be bombarded for from 60 to 100 years with neutron radiation" at the

⁹⁹ *Id.*

¹⁰⁰ Joint Petitioners Appeal at 19-20.

¹⁰¹ See LBP-19-7, 90 NRC at 89; see also Environmental Report § 4.2.7 (identifying twelve decommissioned reactor sites from which waste shipment impacts were analyzed). The use of representative routes to evaluate transportation impacts where actual routes are unknown is well-established under our regulatory framework and consistent with NEPA's "rule of reason." See, e.g., "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel," NUREG-2157, vol. 1, at 5-52 (ML14196A105) (Continued Storage GEIS); "Final Environmental Impact Statement for the Construction and Operation of an Independent Spent Fuel Storage Installation on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Tooele County, Utah," NUREG-1714, vol. 1, at 5-39 (ML020150217); see also 10 C.F.R. § 51.52, Table S-4 (deriving generic effects of transportation and fuel waste for one power reactor based on a survey of then-existing power plants).

¹⁰² Joint Petitioners Petition at 64-76.

¹⁰³ *Id.* at 66-69.

proposed CISF.¹⁰⁴ As a result, Joint Petitioners claimed, “there is a significant underestimate of the quantities of LLRW to be generated by long-term operations and of the associated price tag.”¹⁰⁵

The Board ruled proposed Contention 4 inadmissible because it raised issues outside the scope of this proceeding.¹⁰⁶ The Board found the environmental impacts of spent fuel repackaging beyond the scope of this proceeding because ISP has not requested authorization to repackage spent fuel from its waste canisters into other packages.¹⁰⁷ The Board also found the impacts of repackaging resulting from any separate, future DOE waste disposal campaign “necessarily outside the scope of this proceeding as well.”¹⁰⁸

Further, the Board determined that proposed Contention 4 impermissibly challenged the Continued Storage Rule, 10 C.F.R. § 51.23, insofar as it would have ISP describe the impacts of spent fuel repackaging in its Environmental Report. The Board found that spent fuel repackaging is not an activity that would be authorized during the initial license term, and the Continued Storage Rule explicitly excuses an applicant from providing a site-specific description of environmental impacts related to spent fuel storage that may occur after the initial forty-year license term.¹⁰⁹

The Board also rejected Joint Petitioners’ argument that ISP had grossly underestimated the volume of concrete LLRW that the proposed CISF would generate. The Board found that the environmental impacts resulting from disposal of concrete casks and storage pads from an ISFSI are generically described in the Continued Storage GEIS, which is incorporated into the Continued Storage Rule.¹¹⁰ The Board ruled that Joint Petitioners’ claim that ISP underestimated the volume of LLRW at the proposed CISF was therefore an impermissible attack on that rule.¹¹¹

On appeal, Joint Petitioners argue that the Board’s decision wrongly excluded from environmental-impact consideration any future planned expansions of the proposed CISF as well as decommissioning activities that would occur beyond the initial license term.¹¹² We disagree. The Continued Storage Rule provides that the environmental impacts of an ISFSI beyond the term of its initial li-

¹⁰⁴ *Id.* at 72-73.

¹⁰⁵ *Id.* at 75.

¹⁰⁶ LBP-19-7, 90 NRC at 91-93.

¹⁰⁷ *See id.* at 92.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*; 10 C.F.R. § 51.23(b).

¹¹⁰ *See* LBP-19-7, 90 NRC at 92-93; Continued Storage GEIS; 10 C.F.R. § 51.23.

¹¹¹ *See* LBP-19-7, 90 NRC at 92 (citing 10 C.F.R. § 2.335).

¹¹² Joint Petitioners Appeal at 23.

cense are described generically in the Continued Storage GEIS.¹¹³ The Continued Storage GEIS describes the environmental impacts associated with spent fuel repackaging, concrete disposal, and facility decommissioning for spent fuel storage facilities.¹¹⁴ The Board recognized that the environmental impacts associated with the continued storage of spent fuel had already been generically determined by the Commission through the rulemaking process. Accordingly, we affirm the Board's dismissal of proposed Contention 4.

3. Joint Petitioners' Proposed Contention 5 (Environmental Justice Effects of Transportation)

Joint Petitioners argued in Proposed Contention 5 that ISP, by stating that transportation of waste from reactors to the proposed CISF is not part of the license application, improperly "segmented" evaluation of the environmental effects of transportation from the environmental effects of waste storage.¹¹⁵ As a result, Joint Petitioners claim, "Environmental Justice . . . compliance" will not be possible because "identification and analysis of potentially affected populations along the anticipated rail, truck and barge routes will be improperly excluded from disclosure in the NEPA document."¹¹⁶

The Board ruled that proposed Contention 5 did not raise a material dispute with the application. The Board found the proposed action is construction and operation of the proposed CISF and that the area for assessment of environmental justice impacts is based on the location of the proposed facility, not the location of possible transportation routes.¹¹⁷ Although the Board agreed with the petitioners that "transportation routes will eventually need to be established, and impacts from those routes will need to be analyzed, should ISP's proposed facility be licensed and become operational," it held that the proposed action is for a license to build and operate a facility to store waste, not transport it.¹¹⁸ Therefore, by asserting that ISP's Environmental Report omits environmental justice information regarding as-yet-unknown transportation routes, the Board explained, "Joint Petitioners have not raised an issue that is material to the findings the NRC must make in this proceeding."¹¹⁹

On appeal, Joint Petitioners cite no authority to suggest the Board erred or abused its discretion in finding that proposed Contention 5 did not raise a ma-

¹¹³ 10 C.F.R. § 51.23(b).

¹¹⁴ See Continued Storage GEIS, chs. 4-6.

¹¹⁵ Joint Petitioners Petition at 76.

¹¹⁶ *Id.* at 76-77.

¹¹⁷ LBP-19-7, 90 NRC at 94.

¹¹⁸ *Id.* at 94.

¹¹⁹ *Id.*

terial issue. Joint Petitioners argue that the Board's ruling would improperly segment evaluation of the environmental impacts of waste transportation from environmental impacts of waste storage. As the Board found, actual waste transportation routes are not under review in this licensing proceeding. We see no merit to Joint Petitioners' claim that reviewing the impacts that may result from the proposed action in this case — construction and operation of the proposed CISF — also requires an environmental justice evaluation of communities along as-yet-unknown transportation routes. Accordingly, we affirm the Board's dismissal of proposed Contention 5.

4. Joint Petitioners' Proposed Contention 6 (Effects of Oil and Gas Drilling)

In proposed Contention 6, Joint Petitioners asserted that fracking is occurring nearby the proposed CISF site but that “[t]here is no indication in the Environmental Report or Safety Analysis Report of legal controls over present or potential oil and gas drilling directly beneath the site.”¹²⁰ Joint Petitioners further asserted that “the realistic prospects for mineral development immediately surrounding and underneath the WCS site” are unknown.¹²¹ As a result, Joint Petitioners asserted, there are unknown “seismic, groundwater flow, and water consumption implications” posed by potential fracking that have not been addressed in the application.¹²²

The Board found that Joint Petitioners “fail[ed] to acknowledge (much less dispute) relevant portions of ISP’s application that address their concerns.”¹²³ The Board noted, for example, that the SAR includes a proprietary analysis of seismic hazards, to which Joint Petitioners did not seek access and which they did not review.¹²⁴ Having found that Joint Petitioners had not met their burden to review the application and point out specific sections that were deficient, the Board dismissed proposed Contention 6 because it did not raise a genuine dispute with the application.¹²⁵ The Board also rejected Joint Petitioners’ argument, raised for the first time in a reply brief, that the application should consider fu-

¹²⁰ Joint Petitioners Petition at 98.

¹²¹ *Id.*

¹²² *Id.*

¹²³ LBP-19-7, 90 NRC at 96.

¹²⁴ *Id.*

¹²⁵ *Id.*

ture, possibly “intensified” fracking.¹²⁶ The Board found that this argument was not supported by any authority.¹²⁷

On appeal, Joint Petitioners repeat their argument that “there must be an accounting of prospective drilling trends and density in the immediate region of the CISF” or otherwise there will be a “failure to investigate, project and disclose prospective geological changes” that will occur during the expected operations of the facility.¹²⁸ They further argue that the Board “missed Joint Petitioners’ point” that the “omission of information about legal title to subsurface mineral rights . . . means that there is no certainty that fracking and possibly waste well injection activities will be prohibited underneath the WCS site.”¹²⁹

Joint Petitioners have shown no error in the Board’s decision that proposed Contention 6 did not raise a material dispute with the license application. As required by our regulations, the license application includes information about site geology and seismology, including induced seismicity related to petroleum recovery.¹³⁰ The application discusses the corrosive properties of site soils, analyzes the potential for and severity of human-induced events at the site, and investigates other site characteristics. Joint Petitioners’ assertion that additional analysis of prospective drilling trends is required is neither supported by legal authority nor explained as a specific deficiency in any of the analyses already provided. We therefore agree with the Board that Joint Petitioners did not meet their burden to identify sections of the application that they believed to be inadequate and provide supporting law, facts, or expert opinion to explain each asserted inadequacy described in proposed Contention 6. Accordingly, we affirm the Board’s dismissal of proposed Contention 6.

5. Joint Petitioners’ Proposed Contention 8 (Inadequate Consideration of Alternatives)

In proposed Contention 8, Joint Petitioners asserted that ISP’s Environmental Report is inadequate because there are “alternatives to the proposed CISF project which are neither recognized nor addressed in the Environmental Report, contrary to NEPA requirements.”¹³¹ They argued that these alternatives

¹²⁶ *Id.*; see also Combined Reply of Don’t Waste Michigan, Citizen’s Environmental Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, Inc., San Luis Obispo Mothers for Peace, Sustainable Energy and Economic Development Coalition and Leona Morgan to ISP/WCS and NRC Answers (Dec. 17, 2018), at 38.

¹²⁷ LBP-19-7, 90 NRC at 96.

¹²⁸ Joint Petitioners Appeal at 26.

¹²⁹ *Id.* at 25.

¹³⁰ See 10 C.F.R. § 72.103.

¹³¹ Joint Petitioners Petition at 107.

include variants on the proposed facility.¹³² Joint Petitioners also asserted that ISP's evaluation of the no-action alternative was deficient because ISP made "no demonstration of the overall benefits and costs of leaving the waste at the reactor site compared to the benefits and costs of sending waste from many reactors" to the proposed CISF.¹³³

The Board ruled the contention inadmissible because it did not raise a genuine dispute on a material issue of fact or law.¹³⁴ The Board found that Joint Petitioners had identified five potential alternatives to the proposed action but had not explained what authority required ISP to evaluate any of them.¹³⁵ It noted that of the five alternatives suggested by Joint Petitioners, four "do not appear to be alternatives to constructing ISP's proposed facility at all, but rather suggestions for how to improve it" and the fifth alternative — hardened storage of spent fuel at existing reactor sites — has not been licensed or implemented.¹³⁶ The Board found that Joint Petitioners had not shown why hardened on-site storage of spent fuel at existing reactors would be necessary to an evaluation of the no-action alternative.¹³⁷ The Board also rejected Joint Petitioners' claim that a cost-benefit analysis of the no-action alternative was omitted because "the alleged missing information" was provided in Chapter 7 of the Environmental Report.¹³⁸

On appeal, Joint Petitioners argue that the Board was wrong to require further explanation of why the five project alternatives they propose are required to be addressed by ISP. Those five alternatives include "(1) establishment of a dry transfer system; (2) modification of ISP's emergency response plan to include preparations for emissions mitigation; (3) CISF design modification to prevent 'malevolent' acts; (4) Federal Government control of the ISP facility; and (5) implementation of hardened onsite storage . . . at reactor sites."¹³⁹ Joint Petitioners, citing the decision of the United States Court of Appeals for the First Circuit in *Dubois v. U.S. Department of Agriculture*, assert that they "do not have to explain" why these alternatives must be considered because "the existence of reasonable but unexamined alternatives renders an EIS inadequate."¹⁴⁰

In *Dubois*, the First Circuit found that the United States Forest Service failed to meet its NEPA obligations because it did not address *at all* a reasonable alter-

¹³² *Id.* at 107-08, 111.

¹³³ *Id.* at 111.

¹³⁴ LBP-19-7, 90 NRC at 98.

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.* at 99. Joint Petitioners do not pursue this claim on appeal.

¹³⁹ Joint Petitioners Appeal at 26-27.

¹⁴⁰ *Id.* at 27 (citing *Dubois v. USDA*, 102 F.3d 1273, 1287 (1st Cir. 1996)).

native identified by commenters on its draft environmental impact statement.¹⁴¹ The U.S. Environmental Protection Agency had judged that the permitted option would have serious adverse environmental consequences to an “outstanding” water resource, and the alternative urged by the commenters would involve an option that had been approved in other similar situations.¹⁴² But the Forest Service did not respond to the suggested alternative.¹⁴³ The Court found that NEPA required the Forest Service, faced with evidence of serious adverse consequences associated with the proposed action, to consider the “reasonably thoughtful” alternative proposal “and to explain its reasoning if it rejected the proposal.”¹⁴⁴ But this decision does not require an agency to conduct an environmental analysis of every suggestion proposed by a commenter.

Here, unlike in *Dubois*, Joint Petitioners have not shown that their proposed alternatives are reasonable, and the Board sufficiently explained its rejection of them. Two of the proposed alternatives — Federal ownership of the proposed CISF and implementation of hardened, on-site storage of spent fuel at current reactor sites — would not meet the applicant’s purpose to construct a privately-owned, centralized storage facility.¹⁴⁵ The other three alternatives call for design and procedure changes at the proposed facility — including consideration of design features not required by our safety regulations — without explaining why those changes would be needed to avoid or mitigate an environmental impact.

Under our contention-pleading rules, it is the petitioner’s burden to explain why a contention should be admitted. As the Board found, Joint Petitioners have not met that burden in their proposal of project alternatives. We therefore affirm the Board’s dismissal of proposed Contention 8.

¹⁴¹ The Forest Service had granted a permit to allow a ski resort to increase its withdrawal of water from an unusually pristine mountain pond for artificial snowmaking. The permit allowed a fifteen-foot drop in the pond’s water level from the resort’s water use, which was far greater than the previously approved limit of eighteen inches. The alternative presented by commenters was to build artificial water storage ponds. *Dubois*, 102 F.3d at 1278-79.

¹⁴² *Id.* at 1277-78.

¹⁴³ *Id.* at 1279.

¹⁴⁴ *Id.* at 1288-89.

¹⁴⁵ As a licensing agency charged with enabling the safe and secure use of nuclear materials, we “accord substantial weight to the preferences of the applicant and/or sponsor in the siting and design of the project.” *In re Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 55 (2001) (quoting *Citizens Against Burlington v. Busey*, 938 F.2d 190, 197 (D.C. Cir. 1991)). We may also legitimately consider the “economic goals of the project’s sponsor.” *Id.* (quoting *City of Grapevine v. DOT*, 17 F.3d 1502, 1506 (D.C. Cir. 1994)).

6. Joint Petitioners' Proposed Contention 11 (Lack of a Dry Transfer System)

Joint Petitioners asserted in proposed Contention 11 that ISP's application must include plans for a dry transfer system — a facility that could be used to repackage spent fuel — or “other technological means of handling problems with damaged, leaking or externally contaminated SNF canisters or damaged fuel in the canisters.”¹⁴⁶ The omission, according to Joint Petitioners, “contradicts the expectations of the Continued Storage GEIS” and indicates that “[t]here is no plan for radiation emissions mitigation or radioactive releases at the CISF site.”¹⁴⁷ Joint Petitioners asserted the omission “violates the Atomic Energy Act obligation to protect the public” and that the “unanalyzed risks . . . must be addressed in the Environmental Impact Statement.”¹⁴⁸

The Board found the contention inadmissible for three independent reasons. First, Joint Petitioners focused on the possibility that canisters would be damaged and a dry transfer system would be required. But contrary to our requirements, Joint Petitioners did not address ISP's relevant safety analyses, aging management plans, and quality assurance programs.¹⁴⁹ Second, under our prior decision in *Private Fuel Storage*, several safety evaluations for waste packages have led the NRC to conclude that accidental canister breaches are not credible scenarios.¹⁵⁰ Therefore Joint Petitioners' claim that canister damage could somehow occur “fail[ed] to raise a plausible scenario.”¹⁵¹ Third, contrary to Joint Petitioners' characterizations, “neither the GEIS nor NRC regulations require ISP to construct a dry storage system during the initial 40-year license for its proposed facility,” and “the Continued Storage Rule makes clear that ISP's Environmental Report is not required to evaluate the impacts of storage beyond the term of the license it is requesting.”¹⁵²

On appeal, Joint Petitioners do not dispute the Board's rulings directly but again assert that it would be better to have a dry transfer system in place at the start of CISF operations, rather than in the long-term and indefinite timeframes contemplated by the Continued Storage GEIS.¹⁵³ Joint Petitioners also assert that,

¹⁴⁶ Joint Petitioners Petition at 118.

¹⁴⁷ *Id.*

¹⁴⁸ *Id.* at 118-19.

¹⁴⁹ LBP-19-7, 90 NRC at 102.

¹⁵⁰ See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 136-37 (2004).

¹⁵¹ LBP-19-7, 90 NRC at 102-03 (citing *Private Fuel Storage*, 60 NRC at 136-37).

¹⁵² *Id.* at 103.

¹⁵³ See Joint Petitioners Appeal at 29; see also Continued Storage GEIS § 2.1.4 (reflecting the assumption that a dry transfer system would be constructed not during the period of facility operations)

(Continued)

if DOE at some future time begins a campaign to move spent fuel from existing sites to a permanent repository, repackaging will be required, given “the current posture of the DOE’s canister repackaging policy.”¹⁵⁴ The Board considered and rejected these arguments, and we see no basis in Joint Petitioners’ appeal to disturb the Board’s decision.¹⁵⁵

We agree with the Board that NRC regulations do not require a dry transfer system to be in place during the period of licensed operation. Moreover, NRC regulations do not require a license applicant to describe in its Environmental Report the impacts of building and operating a dry transfer system after the period of licensed operation. Rather, the impacts of continued spent fuel storage after the period of licensed operation — including the impacts associated with construction and operation of a dry transfer system — are already described generically in the Continued Storage GEIS, which is incorporated by reference into the Continued Storage Rule.¹⁵⁶ Accordingly, we affirm the Board’s dismissal of proposed Contention 11.

7. *Joint Petitioners’ Proposed Contention 14 (NEPA Analysis of Security Risks)*

Joint Petitioners asserted in proposed Contention 14 that ISP’s application should include an analysis of the environmental impacts resulting from (among other things) a terrorist attack on spent nuclear fuel shipments to the proposed CISF.¹⁵⁷ The Board found the contention inadmissible based on our precedent, which was upheld by the United States Court of Appeals for the Third Circuit.¹⁵⁸ In *AmerGen Energy*, we held that terrorist attacks are too far removed from the natural or expected consequences of agency action to require environmental analysis in an NRC licensing proceeding.¹⁵⁹

On appeal, Joint Petitioners argue that the Board’s rejection of proposed Contention 14 rested “on the unlawful segmenting of the CISF from the transportation component” and that “[w]ere transportation properly included within the scope of the project, the hundreds of SNF cargoes coming from states within

but in the long-term and indefinite timeframes of continued waste storage following the operating license term).

¹⁵⁴ Joint Petitioners Appeal at 29.

¹⁵⁵ See LBP-19-7, 90 NRC at 103.

¹⁵⁶ See Continued Storage GEIS § 2.2.2, at 2-31 to 2-35, chs. 4-5; 10 C.F.R. § 51.23.

¹⁵⁷ Joint Petitioners Petition at 142-43.

¹⁵⁸ LBP-19-7, 90 NRC at 108; see *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124 (2007), *review denied*, *N.J. Dep’t of Env’tl. Prot. v. NRC*, 561 F.3d 132 (3d Cir. 2009).

¹⁵⁹ *AmerGen Energy*, CLI-07-8, 65 NRC at 129.

the geographical Ninth Circuit, as part of the project, would have to be analyzed” under the Ninth Circuit’s ruling in *San Luis Obispo Mothers for Peace v. NRC*.¹⁶⁰ The Board explicitly considered and rejected this argument and noted that in *AmerGen Energy*, we declined to apply the ruling in *San Luis Obispo Mothers for Peace* outside of the Ninth Circuit.¹⁶¹ The Board found that because the proposed CISF would be in Texas — outside the Ninth Circuit — no terrorist-attack analysis under NEPA is required.¹⁶²

Joint Petitioners have shown no error in the Board’s decision. As the Board addressed in its rulings on proposed Contentions 1 and 5, which we affirmed above, actual waste transportation routes are not currently known and have not been proposed. Thus, review and approval of actual transportation routes to the proposed CISF is an issue outside the scope of this proceeding.¹⁶³ And Joint Petitioners have offered no argument persuading us that the likelihood of a terrorist attack is a reasonably foreseeable consequence of licensing this facility. The Board correctly applied our prior ruling in *AmerGen Energy*, and we affirm its decision to deny admission of proposed Contention 14.

E. Fasken’s Motion for New Contention

On July 6, 2020, Fasken filed a motion to reopen the record of this proceeding and admit a new contention challenging the discussion of transportation impacts in the Staff’s draft Environmental Impact Statement.¹⁶⁴ Although we have jurisdiction to consider whether to reopen this proceeding and admit the contention, we refer Fasken’s motion to the Board for consideration of these matters initially.¹⁶⁵ We remand Fasken’s Proposed Contention 5 to the Board for consideration of the contention’s admissibility, good cause for filing after the deadline, and ability to meet the reopening standards, consistent with our ruling here with respect to the similar issues raised in Joint Petitioners’ Contention 1.¹⁶⁶

¹⁶⁰ 449 F.3d 1016, 1032 (9th Cir. 2006).

¹⁶¹ LBP-19-7, 90 NRC at 108.

¹⁶² *Id.*

¹⁶³ See *supra* Sections II.D.1, II.D.3.

¹⁶⁴ See Fasken Motion for Contention 5; see also “Environmental Impact Statement for Interim Storage Partners LLC’s License Application for a Consolidated Interim Storage Facility for Spent Nuclear Fuel in Andrews County, Texas” (Draft Report for Comment), NUREG-2239 (May 2020) (ML20122A220).

¹⁶⁵ See, e.g., *Holtec*, CLI-20-4, 91 NRC at 191, 211; *Virginia Electric and Power Co.* (North Anna Power Station, Unit 3), CLI-12-14, 75 NRC 692, 701-02 (2012).

¹⁶⁶ The motion was timely under 10 C.F.R. § 2.326(a)(1) based on an order by the Secretary extending the deadline for filing new contentions based on the draft environmental impact statement. See Order (May 22, 2020).

III. CONCLUSION

For the foregoing reasons, we *affirm* the Board's decision denying the hearing requests and *remand* Fasken's Contention 5 to the Board for consideration.
IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 17th day of December 2020.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

Docket No. 72-1050-ISFSI

INTERIM STORAGE PARTNERS LLC
(WCS Consolidated Interim Storage
Facility)

December 17, 2020

STANDING

In materials licensing, a Board determines standing on a case-by-case basis taking into consideration the nature of the proposed action and the significance of the radioactive source.

STANDING

Standing and contention admissibility are “separate issues with distinct requirements.” See *Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), CLI-09-9, 69 NRC 331, 338 n.34 (2009).

STANDING

Board reasonably rejected argument that no petitioner could show standing unless he resided within the “emergency planning zone” of a facility. The Board reasonably found that a petitioner could base standing on concerns about the potential long-term adverse effects that have nothing to do with a sudden emergency.

APPEALS

An appeal must point to a Board error; it is not enough for an appellant to simply repeat the arguments it made before the Board and hope for a different result from the Commission. *Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 6 and 7), CLI-17-12, 86 NRC 215, 219 (2017).

CONTENTIONS

Petitioner who did not see or request to see non-public portions of an application could not reasonably argue that it could offer an admissible contention on those portions of the application.

MEMORANDUM AND ORDER

This order addresses Sierra Club's appeal of two Board decisions in this matter: LBP-19-7, which dismissed sixteen of seventeen proposed Sierra Club contentions, and LBP-19-9, which dismissed Sierra Club's sole admitted contention as moot.¹ For the reasons described below, we *dismiss as moot* Sierra Club's appeal of Contention 9 and *affirm* the Board with respect to the other contentions.

I. BACKGROUND

This proceeding involves the application of Interim Storage Partners LLC (ISP) for a license to construct and operate a consolidated interim storage facility (CISF) in Andrews County, Texas. ISP is a joint venture between Waste Control Specialists LLC (WCS) and Orano CIS LLC formed to design, build, and operate the WCS CISF.² The proposed CISF would be located within the owner-controlled area of the existing WCS site, which currently includes two separate low-level radioactive waste (LLRW) disposal facilities.³ ISP has applied for a forty-year license to store 5,000 metric tons (MTU) of spent nuclear fuel (SNF), mixed oxide fuel, and Greater-than-Class-C LLRW in the proposed

¹ Sierra Club's Brief in Support of Appeal from Atomic Safety and Licensing Board Rulings Denying Admissibility of Contentions in Licensing Proceeding (Dec. 13, 2019) (Sierra Club Appeal); see LBP-19-7, 90 NRC 31 (2019); LBP-19-9, 90 NRC 181 (2019).

² WCS Consolidated Interim Storage Facility System Safety Analysis Report, rev. 2 (July 19, 2018), at 1-2 (SAR) (ADAMS accession no. ML18221A408 (package)).

³ *Id.*

CISF.⁴ ISP anticipates that, if the license is granted, it will subsequently request license amendments for seven expansion phases over the next twenty years and ultimately store up to 40,000 MTU.⁵

Sierra Club petitioned to intervene and proposed seventeen contentions.⁶ In LBP-19-7, the Board found that Sierra Club had established standing and had proposed one admissible contention, Contention 13.⁷ In Contention 13, Sierra Club challenged the Environmental Report's conclusion that the project will have small effects on two species of concern. Because Sierra Club was granted a hearing on one contention, any appeal of the Board's rejection of its other contentions would be considered interlocutory.⁸

ISP appealed the Board's finding that Sierra Club had standing and its admission of Sierra Club Contention 13.⁹ ISP's appeal with respect to Contention 13 became moot, however, after ISP cured the deficiencies identified in the contention. The Board denied Sierra Club's motion to amend Contention 13, and the Board dismissed the contention in LBP-19-9.¹⁰ At that point, the proceeding ended for Sierra Club, and its appeal of both Board decisions became ripe.¹¹

Sierra Club has appealed the Board's rejection of eight contentions at the outset of the proceeding as well as the Board's denial of its motion to amend Contention 13. The NRC Staff and ISP oppose the appeal.¹²

⁴ WCS Consolidated Interim Spent Fuel Storage Facility Environmental Report, rev. 2 (July 19, 2018), at 1-1 (Environmental Report) (ML18221A405).

⁵ *Id.*

⁶ Petition to Intervene and Request for Adjudicatory Hearing by Sierra Club (Nov. 13, 2018) (Sierra Club Petition); *see also* Sierra Club's Reply to Answers filed by Interim Storage Partners and NRC Staff (Dec. 17, 2018) (Sierra Club Reply).

⁷ LBP-19-7, 90 NRC at 39, 50, 78-80.

⁸ *See* 10 C.F.R. § 2.311(a), (c).

⁹ Interim Storage Partners LLC's Notice of Appeal of LBP-19-7 (Sept. 17, 2019); Brief in Support of Appeal of Interim Storage Partners LLC's Appeal of LBP-19-7 (Sept. 17, 2019) (ISP Appeal); *see* 10 C.F.R. § 2.311(d)(1).

¹⁰ *See* LBP-19-9, 90 NRC at 184-85.

¹¹ Shortly after dismissing Sierra Club's last contention, the Board rejected a proposed late-filed contention introduced by a different petitioner and terminated the proceeding altogether. *See* LBP-19-11, 90 NRC 258 (2019).

¹² NRC Staff's Answer in Opposition to Sierra Club's Appeal of LBP-19-7 and LBP-19-9 (Jan. 7, 2020) (Staff Answer); Interim Storage Partners LLC's Answer Opposing Sierra Club's Appeal of LBP-19-7 and LBP-19-9 (Jan. 7, 2020) (ISP Answer). We note that, because the Board granted Sierra Club's petition to intervene, its appeal comes to us not under 10 C.F.R. § 2.311(c) (as the Board apparently suggested, *see* LBP-19-9, 90 NRC at 192, but, rather, under 10 C.F.R. § 2.341.

II. DISCUSSION

We give substantial deference to a Board's ruling on standing, and we will defer to that ruling absent an error of law or abuse of discretion.¹³ We defer to the Board's ruling on contention admissibility in the absence of clear error, mistake of law, or abuse of discretion.¹⁴

A. Sierra Club's Standing

The Board found that Sierra Club had established standing based on the proximity to the proposed CISF site of one of its members, Shirley Henson, who lives about six miles away.¹⁵ In her standing declaration, Ms. Henson stated that she lives in Eunice, New Mexico, which is also on a rail line on which SNF potentially will be shipped.¹⁶ Ms. Henson asserted that she is concerned about accidents at the storage site or on the rail line potentially releasing radioactive material into the air or groundwater.¹⁷

The Board explained in its discussion that standing requires a showing that an intervenor "might suffer a concrete and particularized injury that is (1) fairly traceable to the challenged action; (2) likely redressable by a favorable decision; and (3) arguably within the zone of interests protected by the governing statutes" including the Atomic Energy Act of 1954, as amended (AEA) and the National Environmental Policy Act (NEPA).¹⁸ It further explained that the NRC recognizes proximity-based presumptions of standing. The Board explained that where an application concerns issuing a license for a nuclear power plant, we presume that persons who reside or have frequent contacts within a fifty-mile radius of a plant can establish standing under the above criteria.¹⁹ Where an application concerns other types of facilities, we use a "proximity plus" standard, which will find standing on a "case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source."²⁰ The

¹³ *Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-12-12, 75 NRC 603, 608 (2012); *Nuclear Fuel Services, Inc.* (Erwin, Tennessee), CLI-04-13, 59 NRC 244, 248 (2004) (citing *International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001)).

¹⁴ See *Crow Butte Resources, Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 26 (2014).

¹⁵ LBP-19-7, 90 NRC at 50; see also *id.* at 47-49.

¹⁶ Sierra Club Petition, Attach., Declaration of Shirley Henson (Oct. 23, 2018).

¹⁷ *Id.* at 1 (unnumbered).

¹⁸ LBP-19-7, 90 NRC at 47.

¹⁹ *Id.*; see also *Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 914-18 (2009).

²⁰ LBP-19-7, 90 NRC at 47-48 (citing *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 116-17 (1995)).

Board also observed that because the CISF is a passive structure, the distance it takes to be “realistically threatened” is less than that for a power reactor. But the Board noted that Ms. Henson’s residence six miles from the proposed site was well within the distance for which standing has been found at similar (and much smaller) materials facilities.²¹

On appeal, ISP argues that the Board did not “articulate a factual basis” for Sierra Club’s standing.²² ISP asserts that the Board erroneously based standing solely on the large quantity of spent fuel that would be stored at the facility and that “quantity alone does not create an obvious potential for offsite consequences.”²³ It argues that the Board’s ruling does not constitute the “case-by-case” analysis that we use in materials facilities cases. The Staff opposes ISP’s appeal and argues that the Board’s standing analysis was correct.²⁴ We agree that the Board’s standing analysis was consistent with our case law and was reasonable.

The Board specifically considered both the nature of the proposed action and the significance of the radioactive source. The nature of the proposed action is to build and operate a facility to hold up to 40,000 tons of nuclear waste, which must be brought to the facility. It is quite unlike the situation in *Schofield Barracks*, which ISP cites, where we upheld a board’s determination that a petitioner had shown no “obvious potential for offsite consequences” or “plausible means by which he could be harmed by the possession-only license that the Army [was] seeking.”²⁵ The petitioner in *Schofield Barracks* lived nineteen miles away from a site contaminated with low radioactivity depleted uranium (DU) left over from spotting ammunition used on a military gun range.²⁶ There, not only was the radioactive source small but the nature of the proposed action (that is, leaving DU on a controlled-access facility where it was already present) cut against petitioner’s standing. These circumstances are not present here.

ISP further argues that, because the Board found Sierra Club’s assertions of radiological harm insufficient to support an admissible contention, the Board’s “uncritical acceptance” of Sierra Club’s “conclusory” standing statements constitutes legal error.²⁷ We disagree. ISP conflates the contention admissibility standards with the standing analysis. Commission case law holds that standing

²¹ *Id.* at 50.

²² ISP Appeal at 5-14.

²³ *Id.* at 9.

²⁴ NRC Staff’s Answer in Opposition to Interim Storage Partners LLC’s Appeal of LBP-19-7 (Oct. 15, 2019), at 7-11 (Staff Answer to ISP).

²⁵ ISP Appeal at 9; *U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island of Hawaii, Hawaii), CLI-10-20, 72 NRC 185, 189 (2010).

²⁶ See *Schofield Barracks*, CLI-10-20, 72 NRC at 187.

²⁷ ISP Appeal at 12.

and contention admissibility are “separate issues with distinct requirements.”²⁸ And whereas assertions of standing are construed in favor of the petitioners, a petitioner has the burden of establishing each element of contention admissibility.²⁹

ISP argues that because there is no emergency planning requirement for away-from-reactor independent spent fuel storage installations (ISFSIs), the “Commission determined that there simply is no objective basis for a claim that offsite radiological harm can accrue from facilities such as the WCS CISF.”³⁰ The Board rejected ISP’s argument that standing should not be presumed unless a petitioner resides within a facility’s emergency planning zone.³¹ The Board observed that under ISP’s reasoning, a petitioner who lived across the street from the proposed CISF would not have standing.³² In its discussion of standing of another petitioner, the Board declined to accept the argument that standing can be based on nothing short of “the level of risk necessary to trigger emergency planning requirements.”³³ Rather, the Board held that a petitioner can base standing on “potential long-term effects that have nothing to do with a sudden emergency.”³⁴

We find the Board’s determination to be reasonable. The Commission has not held that there can be no offsite radiological consequences from an ISFSI. We therefore affirm the Board’s finding that Sierra Club has standing.

B. Sierra Club’s Appeal

1. Contention 13: Wildlife Impacts

In Contention 13, Sierra Club argued that ISP’s Environmental Report provided insufficient factual support for its assertion that the proposed CISF would not affect two species of concern that may be present at the site.³⁵ Sierra Club argued that although the Environmental Report identified the two species, the Dunes Sagebrush Lizard and the Texas Horned Lizard, it did not provide studies or surveys that could determine whether the species are present or could be adversely impacted by the proposed project.³⁶

²⁸ *Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), CLI-09-9, 69 NRC 331, 338 n.34 (2009).

²⁹ *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 215-16 (2003).

³⁰ ISP Appeal at 10-11.

³¹ LBP-19-7, 90 NRC at 49.

³² *Id.*

³³ *Id.*

³⁴ *Id.*

³⁵ Sierra Club Petition at 78-79.

³⁶ *Id.*

The Board admitted the contention because none of the five sources cited in ISP's analysis of these species were publicly available, and therefore no interested member of the public would be able to assess their reliability.³⁷ It admitted the contention solely as a contention of omission "insofar as none of the five references in section 3.5.16 of ISP's Environmental Report is either sufficiently described to judge its technical adequacy or made publicly available."³⁸

Thereafter, ISP supplemented its Environmental Report with copies of or ADAMS accession numbers for the materials cited in section 3.5.16 and moved to dismiss Contention 13 as moot.³⁹ Shortly thereafter, Sierra Club moved to amend Contention 13.⁴⁰ In its amended Contention 13, Sierra Club argued that the sources cited all referred to the adjacent WCS LLRW site and did not apply directly to the CISF site, and, further, that they were eleven to twenty-two years out of date.⁴¹

The Board rejected the amended contention because it did not raise a genuine dispute "as to whether the recently available studies adequately support[ed] the factual description of the affected environment in ISP's Environmental Report" or as to whether the report's characterization of the project's environmental impact is reasonable.⁴² The Board found that there were no significant discrepancies between the information in the newly available studies and the Environmental Report.⁴³ The Board further found that the Sierra Club had not asserted that the Environmental Report's conclusions were unreasonable.⁴⁴ The Board pointed out, for example, that ISP's Environmental Report asserts that impacts on the two species would be "small." The Board also found factual support for the Environmental Report's conclusions that the CISF site is only a small percentage of the suitable habitat for the affected species in the region and neither of the two species is federally listed as endangered or threatened.⁴⁵ Further, the Board credited ISP's rationale in the Environmental Report that the two species will not be greatly affected by construction at the site because they

³⁷ LBP-19-7, 90 NRC at 78-79.

³⁸ *Id.* at 80.

³⁹ Letter from Jack Boshoven, ISP, to Document Control Desk, NRC (Sept. 4, 2019) (ML19248-C915) (ISP Letter Providing Supplemental References); Interim Storage Partners LLC's Motion to Dismiss Sierra Club's Contention 13 as Moot and Terminate this Proceeding (Sept. 9, 2019), at 1.

⁴⁰ Sierra Club Motion to Amend Contention 13 (Sept. 13, 2019) (Motion to Amend); Amended Contention 13 (Sept. 13, 2019) (Amended Contention 13).

⁴¹ Amended Contention 13 at 2-3.

⁴² LBP-19-9, 90 NRC at 187-88. A majority of the Board rejected arguments that the amended contention was not timely under the factors set forth in 10 C.F.R. § 2.309(c)(1). *Id.* at 185-87.

⁴³ *Id.* at 188-90.

⁴⁴ *Id.* at 190-91.

⁴⁵ *Id.* The Environmental Report acknowledges that the Texas Horned Lizard is state-listed as threatened in Texas. *See* Environmental Report at 3-34, Tbl. 3.5-1.

either are not present or are “highly adaptable” — meaning they would be able to move away from construction activities.⁴⁶ Moreover, the Board concluded that proposed facility site was within the survey area of the studies.⁴⁷

The Board also rejected Sierra Club’s claim that the studies cited in the Environmental Report are outdated. The Board noted that this aspect of the amended contention was untimely, given that the Environmental Report provided the dates of the studies at the outset.⁴⁸ The Board further stated that Sierra Club cited no factual or legal reason why ISP must use more recent studies.

On appeal, Sierra Club does not identify a clear Board error or an abuse of discretion. Instead, it reiterates the same arguments it raised before the Board without addressing the Board’s reasons for rejecting them. An appeal must point to a Board error; it is not enough for an appellant to simply repeat the arguments it made before the Board and hope for a different result from the Commission.⁴⁹ We see no reason to disturb the Board’s decision, and we affirm its ruling.

2. Contentions Dismissed at the Outset (LBP-19-7)

a. Contention 1: The NWPA Prohibits Licensing the Proposed CISF

The focus of Sierra Club’s Contention 1 argument before the Board — and its exclusive argument on appeal — is that the license cannot be issued because the “project might be illegal.”⁵⁰ Specifically, Sierra Club argued before the Board that the license would allow ISP to enter into a contract with the Department of Energy (DOE) for storage of spent fuel, whereas the NWPA prohibits the Department of Energy from taking title to SNF before it has constructed a permanent repository.⁵¹

The Board found that the contention did not raise a genuine dispute with the application because the proposed license includes the option of contracting directly with the power plant owners (an option which Sierra Club does not

⁴⁶ See LBP-19-9, 90 NRC at 191 (citing Environmental Report at 4-38).

⁴⁷ *Id.* at 188.

⁴⁸ *Id.* at 187 n.39.

⁴⁹ *Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 6 and 7), CLI-17-12, 86 NRC 215, 219 (2017).

⁵⁰ Sierra Club Appeal at 8. Sierra Club’s proposed Contention 1 included an argument that neither the AEA nor the Nuclear Waste Policy Act (NWPA) gives the NRC authority to license the facility. Sierra Club Petition at 14, 17, 20-23. The Board rejected Sierra Club’s argument as an impermissible challenge to NRC regulations, which expressly allow such storage. LBP-19-7, 90 NRC at 60; *see also* 10 C.F.R. § 2.335 (precluding challenges to NRC regulations in individual adjudications without a waiver). Sierra Club appears to have abandoned this specific argument on appeal.

⁵¹ Sierra Club Petition at 14-20.

claim would be illegal).⁵² The Board explained that whether ISP finds that option commercially viable in the future is not an issue material to the license proceeding.⁵³

On appeal, Sierra Club reiterates its argument before the Board that the license cannot be issued because we lack the authority to approve “a project that might be illegal.” We disagree for the reasons explained by the Board as well as for the reasons we discussed in our recent decisions on appeals of similar contentions.⁵⁴

We further note that Sierra Club’s argument misconstrues the purpose and effect of the proposed license condition that discusses DOE. The application contemplates that ISP will raise its operating costs through disposal contracts with the owners of the SNF — either power plant operators who currently own the fuel or DOE, which is responsible for the ultimate disposal of SNF. Proposed license condition 23 provides, “Prior to commencement of operation, the Licensee shall have an executed contract with the U.S. Department of Energy (DOE) *or other SNF Title Holder(s)* stipulating that the DOE or the other SNF Title Holder(s) is/are responsible for funding operations required for storing the SNF.”⁵⁵

ISP acknowledges that under the NWPA as currently drafted, DOE cannot take title to SNF until after it has commenced operations at a permanent repository and that the CISF license, until granted, would not authorize DOE to do so.⁵⁶ The license condition, as written, would allow ISP to take advantage of a future change in the law to bid on a DOE disposal contract without first amending its license. Nothing in the proposed condition purports to authorize ISP or the DOE to enter into the contracts. Rather, it expresses a limitation on ISP’s operating authority: ISP could not begin operations until it entered a valid contract with either DOE or power plant owners. We therefore affirm the Board’s decision dismissing this claim.

⁵² *Id.* at 60.

⁵³ *Id.*

⁵⁴ See CLI-20-14, 92 NRC 463 (2020); *Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 173-76 (2020).

⁵⁵ See Interim Storage Partners, LLC, License Application, rev. 2 (July 19, 2018) (ML18221A397 (package)) (Application), Attach. A, Proposed License, at 3 (Proposed License).

⁵⁶ See 42 U.S.C. §§ 10143, 10222(a)(5)(A); Interim Storage Partners LLC’s Response to the Atomic Safety and Licensing Board’s Questions Regarding the U.S. Department of Energy’s Authority Under the Nuclear Waste Policy Act (June 28, 2019); see also Tr. at 43-44 (Mr. Matthews) (“[T]he license that . . . we seek here does nothing to authorize DOE to use the facility. There’s nothing that the NRC Staff, this Board, or the Commission can do to change the DOE’s authority under the Nuclear Waste Policy Act.”).

b. Contention 4: Transportation Risks

Sierra Club argued in proposed Contention 4 that ISP's Environmental Report does not adequately evaluate the risks of transporting SNF from across the country.⁵⁷ Sierra Club referred to a 2001 report prepared by Matthew Lamb and Dr. Marvin Resnikoff, "Worst Case Credible Nuclear Transportation Accidents: Analysis for Rural and Urban Nevada," which was prepared in support of a challenge to the DOE's Yucca Mountain repository application.⁵⁸ Sierra Club provided a declaration of Dr. Resnikoff, who stated that he had read the contention and agreed with it, but the declaration provided no further information.⁵⁹ Sierra Club also proffered the testimony of Dr. Gordon Thompson, who described various scenarios that he argued could result in canister breach and release of radiation.⁶⁰

The Board rejected the contention because it failed to raise a genuine dispute with the application. With respect to the impacts of accidents, the Board pointed out that the estimated doses from accidents were contained in section 4.2.8 of the application, and it noted that Sierra Club did not address these estimates or "explain why they are inadequate or unreasonable."⁶¹ According to the Board, Sierra Club merely proffered an eighteen-year-old report and pointed out that its analysis had much higher accident consequence estimates than those contained in the application.⁶² However, the Board found that the report was admittedly a worst-case analysis.⁶³ It held that under NEPA, Sierra Club would have to show that ISP's analysis was unreasonable or that Sierra Club's proposed methodology would be more appropriate.⁶⁴ The Board found that Sierra Club "*assumes* that

⁵⁷ Sierra Club Petition at 31-43.

⁵⁸ Matthew Lamb, Marvin Resnikoff and Richard Moore, Worst Case Credible Nuclear Transportation Accidents: Analysis for Urban and Rural Nevada (Aug. 2001) (RWMA Report). Sierra Club did not attach the RWMA Report to its petition but provided a web address, www.state.nv.us/nucwaste/trans/rwma0108.pdf (last visited Feb. 20, 2020).

⁵⁹ Sierra Club Petition, Attach., Declaration of Dr. Marvin Resnikoff (Nov. 9, 2018). Sierra Club's appeal claims that Dr. Resnikoff "cited recent information about rail fires and expanded traffic of oil tanker cars," but that information is not in Dr. Resnikoff's declaration. *See id.*; Sierra Club Appeal at 9. Sierra Club's Petition listed thirteen oil tanker train car derailment accidents that have occurred since 2013 and resulted in fires. Sierra Club Petition at 39-40.

⁶⁰ Sierra Club Petition, Attach., Declaration of 12 November 2018 by Gordon R. Thompson, at 9-13.

⁶¹ LBP-19-7, 90 NRC at 64.

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.* (citing *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 323 (2012)).

ISP's analysis is inadequate solely because it produced estimated doses that are smaller than the 'worst case' results in [the report Sierra Club provided]."⁶⁵

On appeal, Sierra Club does not demonstrate any Board error. Its only mention of the Board's ruling is to claim that the Board erred in holding that Sierra Club had failed to dispute the information in the Environmental Report's section 4.2.8, when Sierra Club "was disputing the adequacy of section 4.2.6."⁶⁶ But the Board pointed out that impacts from transportation accidents — the subject of Sierra Club's contention — were discussed in section 4.2.8. And the Board was correct that simply presenting an alternative analysis is not enough to raise an admissible contention unless the petitioner also shows that the application's analysis is inadequate or unreasonable.⁶⁷

The remainder of Sierra Club's argument on appeal contains a brief summary of the claims it made in Contention 4. But an appeal cannot simply repeat the same arguments it raised before the Board; it must show that the Board's ruling was in error.⁶⁸ We see no Board error, and we affirm its ruling with respect to Contention 4.

c. Contention 6: Earthquakes

Sierra Club argued in Contention 6 that the application's discussion of the potential impacts from earthquakes — particularly induced earthquakes from oil and gas activities — was inadequate.⁶⁹

The Board considered the contention as both an environmental and safety challenge. The Board found that the contention failed to dispute the relevant portions of the Environmental Report, which discusses seismicity, including induced seismicity from oil and gas activities.⁷⁰ The Board observed that the studies on which Sierra Club relied to support its contention simply reviewed historic instances of induced seismicity, which the application acknowledged.⁷¹

The Board further rejected the contention as a safety contention because Sierra Club did not dispute the material in SAR Attachment D, which analyzes the ground motions of likely earthquakes.⁷² Attachment D contains non-public,

⁶⁵ *Id.*

⁶⁶ Sierra Club Appeal at 10.

⁶⁷ *See Seabrook*, CLI-12-5, 75 NRC at 323.

⁶⁸ *Turkey Point*, CLI-17-12, 86 NRC at 219.

⁶⁹ Sierra Club Petition at 49-53.

⁷⁰ LBP-19-7, 90 NRC at 68-69 (citing Environmental Report §§ 3.3.2, 3.3.3, 3.3.4).

⁷¹ *Id.* at 69.

⁷² *Id.*

proprietary information, to which Sierra Club did not seek access. The Board rejected Sierra Club's claim that the analysis it had not seen was inadequate.⁷³

On appeal, Sierra Club argues that it presented evidence of seismic activity in an area that was not addressed by the Environmental Report.⁷⁴ However, the Environmental Report discusses induced seismicity in section 3.3.3 and concludes that there is low risk to the facility. We see no clear error in the Board's finding that, as an environmental contention, this contention lacked factual support and failed to dispute the application.

Further, we are not persuaded by Sierra Club's argument in support of the safety aspects of its contention that the SAR is inadequate. Although Sierra Club readily acknowledges that it never saw ISP's seismic analysis — because it never sought access to the analysis — it argues that there is “no indication . . . that ISP adequately evaluated the earthquake potential as required by 10 C.F.R. § 72.103(f)(1).”⁷⁵ Sierra Club cannot reasonably argue that it can proffer an admissible contention disputing portions of a license application that it has not reviewed. Therefore, Sierra Club has not demonstrated Board error, and we affirm the Board's ruling with respect to Contention 6.

d. Contention 9: Decommissioning Costs

In Contention 9, Sierra Club argued that the applicant had not provided reasonable assurance that it will have the necessary funds for decommissioning when the time comes, as required by 10 C.F.R. § 72.30(e).⁷⁶ Sierra Club also challenged ISP's decommissioning cost estimates and ISP's request for an exemption from decommissioning cost financial assurance requirements.⁷⁷

The Board found that Sierra Club's challenge to the cost estimate did not raise a genuine dispute with the application because the contention did not explain what was wrong with the cost estimate ISP provided.⁷⁸ The Board also found the portion of the contention referring to the exemption request to be moot because ISP withdrew the request after the petitions to intervene were filed.⁷⁹ Sierra Club does not raise either of these claims on appeal, but it reasserts its claim that ISP failed to provide a financial assurance method that complies with NRC regulations.⁸⁰

⁷³ *Id.*

⁷⁴ Sierra Club Appeal at 11.

⁷⁵ *Id.*

⁷⁶ Sierra Club Petition at 60-63; *see* LBP-19-7, 90 NRC at 71.

⁷⁷ Sierra Club Petition at 60-62.

⁷⁸ LBP-19-7, 90 NRC at 71.

⁷⁹ *Id.*

⁸⁰ Sierra Club Appeal at 12.

Our regulations require a license application to provide financial assurance for decommissioning through (1) prepayment; (2) a surety, insurance, or other guarantee method; or (3) an external sinking fund.⁸¹ Sierra Club argued in Contention 9 that ISP could not qualify for an exemption from § 72.30(e).⁸² Therefore, it argued that there was no assurance that these costs would be funded and that ISP had “completely failed to comply with 10 C.F.R. § 72.30.”⁸³

However, on November 5, 2019, the Staff sent ISP a request for additional information (RAI) seeking clarity concerning how ISP will assure decommissioning funding in compliance with the regulation.⁸⁴ On April 7, 2020, ISP amended its Application to provide that:

ISP *will* use a surety bond combined with a conformity external sinking fund as authorized by 10 CFR 72.30(e)(3). Payments from storage operations *will* be deposited into the external sinking fund as waste is received. A surety bond *will* be used to assure the difference in the decommissioning cost estimate and the value of the sinking fund until the sinking fund is fully funded. *Proposed License Condition 24 ensures that ISP will have funding in place before [waste] is received on site.*⁸⁵

The revised language renders moot Sierra Club’s claim that ISP’s application does not provide adequate decommissioning funding assurance as required in 10 C.F.R. § 72.30(e). We therefore dismiss Sierra Club’s appeal with respect to Contention 9.

e. Contention 10: Groundwater Impacts

In Contention 10, Sierra Club argued that the application does not “accurately and adequately evaluate and consider impacts” to the Ogallala aquifer from the proposed CISF.⁸⁶ Sierra Club argued that the proposed CISF site is directly above the Ogallala Aquifer and the application erroneously states that it is not.⁸⁷ It offered testimony from a geologist, Dr. Patricia Bobeck, that the

⁸¹ See 10 C.F.R. § 72.30(e).

⁸² Sierra Club Petition at 62.

⁸³ *Id.* at 62-63.

⁸⁴ See Letter from John-Chau Nguyen, NRC, to Jeffrey Isakson, ISP (Nov. 5, 2019), Encl. at 2 (ML19309E913).

⁸⁵ See Letter from Jeffery Isakson, ISP, to NRC Document Control Desk (Apr. 7, 2020) (ML20105-A133 (package)); Encl. 3, RAIs and Responses, at 27; Encl. 5, LA Changed Pages, at 1-10.

⁸⁶ Sierra Club Petition at 63.

⁸⁷ *Id.*

Environmental Report did not adequately define the geologic units at the site.⁸⁸ It further argued that various factors could cause a release of contamination into groundwater. In particular, Sierra Club argued that casks could rupture because high burnup fuel would cause damage and weaken the fuel cladding.⁸⁹

The Board dismissed this contention because Sierra Club had not presented a material dispute with the application. The Board stated that “[a]ny disagreement concerning the location of the Ogallala Aquifer or the water saturation point at the CISF site is only material to the findings the NRC must make if it is possible for groundwater to be contaminated from a cracked or ruptured cask.”⁹⁰ Moreover, the Board found that Sierra Club’s claims regarding the storage of high burnup fuel and its claims that seismic events in the area would be sufficient to crack a canister were essentially challenges to the certified design of the licensed canisters.⁹¹ The Board held that such claims pose an impermissible challenge to NRC regulations and are therefore outside the scope of the proceeding.⁹²

On appeal, Sierra Club repeats the claims it made before the Board without asserting that the Board erred. Sierra Club reiterates arguments that the Environmental Report and SAR fail to acknowledge that the site is above the Ogallala aquifer but does not address the Board’s explanation that the depth of the water table is not relevant absent a showing that contamination could plausibly get into the groundwater.⁹³ In addition, we agree with the Board that Sierra Club’s claims that high burnup fuel could rupture the licensed casks was an impermissible challenge to the certified design of the casks. We therefore affirm the Board with respect to Contention 10.

f. Contention 11: Site-Selection Process

In Contention 11, Sierra Club challenged ISP’s site-selection process and argued that the fifteen site-selection criteria ISP used “bear little or no relationship to any criteria in the statutes or regulations.”⁹⁴ Sierra Club argued that

⁸⁸ *Id.* at 65; *see also id.*, Attach., Declaration of Dr. Patricia Bobeck, Geologic Review of Interim Storage Partners LLC WCS Consolidated Interim Storage Facility Environmental Report (Oct. 25, 2018), at 3-6.

⁸⁹ Sierra Club Petition at 65-67. Sierra Club also argued that the CISF site is prone to earthquakes and could cause the containers to crack, allowing “radioactive leakage that . . . would find its way into the groundwater.” *Id.* at 67.

⁹⁰ LBP-19-7, 90 NRC at 73.

⁹¹ *Id.* at 74.

⁹² *Id.*

⁹³ Sierra Club Appeal at 12-13.

⁹⁴ Sierra Club Petition at 68.

many of the criteria used “have nothing to do with the environmental impacts of reasonable alternatives.”⁹⁵

In its Environmental Report, ISP explained that it focused on a seven-state region of interest that included sparsely-populated, arid areas where there is support for such a facility.⁹⁶ The Environmental Report included analyses of four sites — two in Texas and two in New Mexico — using fifteen criteria.⁹⁷ The report further broke down the fifteen general criteria into subcategories and included an explanation of why the criteria were important to ISP in selecting a site.⁹⁸ ISP’s siting criterion 11 provided (among other things) that candidate sites should have no existing contamination, should not be located within the 500-year floodplain, should have a “low probability of containing archeological/cultural resources,” and “should have a low probability of disproportionate, adverse impacts to low-income or minority communities.”⁹⁹

The Board found that ISP’s site selection criteria need only be reasonable. It pointed out that there are no site selection criteria described in 10 C.F.R. Part 51 and that the NRC accords “‘substantial weight to the preferences of the applicant and/or sponsor in the siting and design of the project’ so long as the application is not [so] artificially narrow as to circumvent the requirement that reasonable alternatives must be considered.”¹⁰⁰ The Board concluded that Sierra Club had not shown that ISP’s site selection process contravened NEPA or any other statutory or regulatory requirement.¹⁰¹

On appeal, Sierra Club does not show the Board erred. It reasserts three arguments against ISP’s siting criteria, but it does not show that any of ISP’s criteria are either unreasonable or contrary to law. First, Sierra Club disputes ISP’s statement that the proposed CISF site has not been contaminated by the neighboring WCS LLRW site and calls that claim both unsupported and irrelevant.¹⁰² But as ISP argued before the Board, its assessment is well-founded because the WCS LLRW has been under a monitoring plan to detect radiological or hazardous releases since it was licensed in 1997.¹⁰³ And Sierra Club provides no reason why a lack of existing contamination is an unreasonable factor to

⁹⁵ *Id.* at 71.

⁹⁶ Environmental Report § 2.3.1, at 2-10.

⁹⁷ *Id.* §§ 2.3.4 to 2.3.7.

⁹⁸ *Id.* § 2.3.3.

⁹⁹ *See id.* § 2.3.2, at 2-16 to 2-17.

¹⁰⁰ LBP-19-7, 90 NRC at 75-76 (quoting *Hydro Resources, Inc.* (P. O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 55 (2001), and citing *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-90-8, 32 NRC 201, 206 (1991)).

¹⁰¹ *Id.* at 76.

¹⁰² Sierra Club Appeal at 17; *see* Sierra Club Petition at 71-72.

¹⁰³ *See* ISP Opposition to Hearing Request at 95 (citing Environmental Report at 2-23).

consider in choosing a site. Next, Sierra Club argues that ISP should not have used a location outside the 500-year floodplain as a siting criterion.¹⁰⁴ Sierra Club argued before the Board that ISP should have evaluated the impacts of the proposed facility being in the 100-year floodplain as required by 10 C.F.R. § 72.90(f).¹⁰⁵ But as the application states, the site is neither in the 100-year floodplain nor in the 500-year floodplain.¹⁰⁶ In any case, Sierra Club has not shown why low flooding risk would be an inappropriate siting criterion.

Finally, Sierra Club argues that ISP's environmental justice and archeological analyses of the selected site were inadequate.¹⁰⁷ But these claims do not address whether it was inappropriate or contrary to law for ISP to consider in its site selection criteria whether the candidate sites contain archeological resources or present environmental justice concerns. Therefore, the arguments do not support proposed Contention 11 and we affirm the Board's decision to dismiss it.¹⁰⁸

g. Contention 14: Impacts of Storage Containers Used Beyond Their Licensing Period

Sierra Club argued in proposed Contention 14 that ISP should evaluate the environmental effects of the SNF containers being used beyond their licensing period. Sierra Club argued that the canisters that will hold the SNF during transportation and storage are only licensed for twenty years, whereas the proposed CISF will be licensed for forty years, and ISP acknowledges that it expects to extend its license for a total of 100 years.¹⁰⁹ Sierra Club also claimed that ISP has no plan for handling canisters that may arrive at the CISF damaged or leaking or that may develop a crack during storage.¹¹⁰

The Board dismissed the contention as factually unsupported and raising matters outside the scope of the proceeding. First, it cited our *Private Fuel Storage* decision, in which we noted that the NRC has determined, through several safety evaluations for waste packages, that accidental canister breach during shipping or storage was not a credible scenario.¹¹¹ Next, it observed that

¹⁰⁴ Sierra Club Appeal at 17; *see* Sierra Club Petition at 72 (citing 10 C.F.R. §§ 72.3, 72.90(f)).

¹⁰⁵ Sierra Club Petition at 72.

¹⁰⁶ *See* Environmental Report at 3-20; SAR, ch. 2, Attach. B at 77.

¹⁰⁷ Sierra Club Appeal at 17-18, *see also* Sierra Club Petition at 73-75.

¹⁰⁸ We observe that Sierra Club also proposed a contention on environmental justice, which the Board rejected and which Sierra Club does not appeal. *See* LBP-19-7, 90 NRC at 82-84.

¹⁰⁹ Sierra Club Petition at 79-81.

¹¹⁰ *Id.* at 81-83.

¹¹¹ *See* LBP-19-7, 90 NRC at 80-81 (citing *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 136-37 (2004)). In *Private Fuel Storage*, we held
(Continued)

the NRC has approved and issued certificates of compliance for all the canisters that are proposed for use at the CISF and that the certificates of compliance have been codified through the rulemaking process.¹¹² Therefore, the Board held that any challenge to the certificates of compliance are outside the scope of this proceeding.¹¹³ Similarly, it held that challenges to the safety of the transportation of spent fuel canisters would be an impermissible challenge to NRC's Part 71 regulations. Finally, it ruled that Sierra Club's challenge to the lack of a dry transfer system was an impermissible challenge to the Continued Storage Rule and the Continued Storage Generic Environmental Impact Statement (GEIS).¹¹⁴

On appeal, Sierra Club focuses on a single argument: that the application is based on the fallacy that renewal of the certificates of compliance for the SNF containers will be automatic and that the Board did not address this issue.¹¹⁵ Sierra Club's argument assumes that the certificates of compliance define the boundary of the useful life of the containers and that ISP will be unable to renew the certificates of compliance. However, our regulations allow the licensee to apply to renew a certificate if the certificate holder does not seek renewal.¹¹⁶ Any renewal application will necessarily require a safety analysis report that includes design basis information, a description of the aging management program for issues related to structures, systems and components important to safety, as well as time-limited aging analysis that demonstrates that those same systems will continue to perform their intended function for the requested period.¹¹⁷ Moreover, the aging management of the canisters is addressed in the SAR, which Sierra Club did not address in its contention as originally stated or as phrased on appeal.¹¹⁸ Specifically, the SAR discusses stress corrosion cracking

that to challenge the factual determinations on which a regulation rests in the context of NEPA, a petitioner would have to present "specific, fact-based claims to the contrary, not mere allegations." CLI-04-22, 60 NRC at 134.

¹¹² LBP-19-7, 90 NRC at 81.

¹¹³ *Id.*

¹¹⁴ *Id.*; see 10 C.F.R. § 50.23 (Continued Storage Rule); "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel," NUREG-2157, vol. 1, at 5-52 (ML14196A105) (Continued Storage GEIS).

¹¹⁵ Sierra Club Appeal at 21. ISP argues that this argument is new on appeal. ISP Answer at 22. If the argument were truly new on appeal, that would be sufficient grounds for us to reject it. *USEC Inc. (American Centrifuge Plant)*, CLI-06-10, 63 NRC 433, 458 (2006). But we see a connection between the original contention's apparent assumption that the containers would begin to decay after the original certificates expire and its current argument that there is no guarantee that the certificates will be renewed.

¹¹⁶ See 10 C.F.R. § 72.240(a).

¹¹⁷ See *id.* § 72.240(c).

¹¹⁸ See, e.g., SAR § 5.1.3.2 ("Surveillance of the Storage Overpacks"); *id.* § 5.1.3.5 ("Maintenance Operations").

as a factor considered in selecting material for the storage system, as well as surveillance activities and routine maintenance of the casks for identification and resolution of any issues.¹¹⁹

Sierra Club establishes no Board error and we therefore affirm the Board's decision to dismiss Contention 14.

h. Contention 16: High Burnup Fuel Risks

Sierra Club argued in its proposed Contention 16 that the Environmental Report and the SAR failed to account for the effects of storing high-burnup fuel at the proposed CISF.¹²⁰ Sierra Club argued that high-burnup fuel causes the cladding of the fuel rods to become thinner and more brittle, which increases the risk of release of radioactive material. It also claimed that the SAR misleadingly stated that no high-burnup fuel would be transported and stored at the CISF, which is unlikely because most nuclear fuel used in this country since 1999 — and all of it since 2012 — has been high-burnup fuel.¹²¹ In a reply brief, Sierra Club challenged the Environmental Report's dose modeling using the RADTRAN computer model and argued that the model does not indicate whether it accounted for high-burnup fuel.¹²²

The Board found that the issues Sierra Club raised were out of scope and failed to challenge the information in the application.¹²³ The Board found that the challenge to the safety of transporting high-burnup fuel to be an out of scope challenge to our Part 71 regulations and Department of Transportation regulations.¹²⁴ To the extent that the contention challenged the safety of storing high-burnup fuel, the Board found that the application states that only NRC-approved storage systems will be used at the CISF and the SAR incorporates the technical specifications for those designs.¹²⁵ Therefore, Sierra Club's claim that the certified storage systems would not be suitable to store fuel as allowed by their design certifications was barred by 10 C.F.R. § 72.46(e).¹²⁶

¹¹⁹ See, e.g., SAR at A.3-9 (NUHOMS-MP187 Cask System), B.3-9 (NUHOMS Horizontal Modular Storage System), C.3-9 (NUHOMS 61BT System), D.3-9 (NUHOMS-61BTH Type 1 System), E.3-9 (La Crosse MPC storage system); see also SAR at 5-5 (Section 5.1.3.2, "Surveillance of the Storage Overpacks"); 5-5 to 5-6 (Section 5.1.3.5, "Maintenance Operation"); 5-7 (Section 5.1.5.5, "Maintenance Techniques").

¹²⁰ Sierra Club Petition at 91-95.

¹²¹ *Id.* at 92.

¹²² Sierra Club Reply at 44.

¹²³ LBP-19-7, 90 NRC at 85-87.

¹²⁴ *Id.* at 85-86.

¹²⁵ *Id.* at 86 (citing SAR at 1-6 to 1-10).

¹²⁶ *Id.* Section 72.46(e) provides that, to the extent that an application under Part 72 "incorporates
(Continued)

The Board also found that the contention failed to challenge the Environmental Report, which discusses both the effects of transportation and storage of high-burnup fuel.¹²⁷ With respect to the probability that the CISF will store high-burnup fuel, the Board observed that Sierra Club misconstrued the application.¹²⁸ The application states that the facility will not accept uncanned high-burnup fuel, not that it will not accept any high-burnup fuel.¹²⁹ The Board also rejected Sierra Club's challenge to ISP's dose modeling because that model encompasses spent fuel of any burnup level.¹³⁰

Further, Sierra Club's appeal repeats its arguments that the Environmental Report does not discuss the impacts of transporting high-burnup fuel. It also argues, without identifying any factual or expert support, that transportation of high-burnup fuel would have different doses to the public, transportation modes, and treatment and packaging procedures than other SNF.¹³¹ This challenge is unsupported, and we dismiss it.

Finally, Sierra Club asserts that it does not challenge the certified design of the casks, but rather the "storage of the radioactive waste with respect to the design of the CIS facility."¹³² However, Sierra Club's contention does not identify a characteristic of the CISF facility's design that would make otherwise safe storage systems unsafe.

We find no error in the Board's dismissal of this contention, and we affirm its ruling.

by reference information on the design of a spent fuel storage cask for which NRC approval . . . has been issued . . . , the scope of and public hearing held to consider the application will not include any cask design issues."

¹²⁷ LBP-19-7, 90 NRC at 86-87.

¹²⁸ *Id.*

¹²⁹ *Id.* at 86 (citing Proposed License at unnumbered A-3, ¶ 9). Canning provides an alternative means for confinement of fuel material and replaces the function of cladding.

The purpose of canning is to confine gross fuel particles to a known, subcritical volume during off-normal and accident conditions, and to facilitate handling and ready retrieval of contents. Canning of damaged fuel also provides geometry control of the SNF to avoid relocation, concentration, or both, of radiation sources that may create problems for radiation shielding.

"Standard Review Plan for Spent Fuel Dry Storage Systems and Facilities (Draft Report for Comment)," NUREG-2215 (Nov. 2017), at 1-8.

¹³⁰ LBP-19-7, 90 NRC at 86.

¹³¹ Sierra Club Appeal at 21-22.

¹³² *Id.* at 22.

III. CONCLUSION

For the reasons described above, we *dismiss as moot* Sierra Club's appeal of Contention 9 and *affirm* the Board with respect to the other contentions.
IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 17th day of December 2020.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

**Docket Nos. 50-438-LT
50-439-LT**

**NUCLEAR DEVELOPMENT, LLC
(Bellefonte Nuclear Plant, Units 1
and 2)**

December 17, 2020

PRO SE LITIGANTS

While the Commission affords greater latitude to a hearing request submitted by a *pro se* petitioner, it is ultimately the petitioner's burden to provide sufficient facts to establish standing.

PROXIMITY PRESUMPTION

The fifty-mile proximity presumption for construction permit and operating license proceedings rests on the Commission's finding that persons living within the roughly fifty-mile radius of a nuclear power reactor face a realistic threat of harm if a release from the facility of radioactive material were to occur. These licensing actions, as well as significant reactor license amendment actions, involve the construction or operation of the reactor itself, with clear implications for the offsite environment, or major alterations to the facility with a clear potential for offsite consequences.

PROXIMITY PRESUMPTION

In a license transfer proceeding, the Commission will determine on a case-by-case basis whether the proposed action involves a significant source of radioactivity producing an obvious potential for offsite consequences. The Commission's determination of the geographical extent appropriate for a presumption of standing depends on the danger posed by the source at issue.

PROXIMITY PRESUMPTION

In general, the Commission has found that license transfers present a low potential for offsite radiological consequences.

PROXIMITY PRESUMPTION

In license transfer proceedings, the Commission has found proximity-based standing unavailable where the proposed action did not involve changes to the operation, personnel, or financing of the facility. The Commission has likewise not applied proximity-based standing where the radiological source presented low potential for radiological consequences or where the facility in question was essentially a passive structure rather than an operating facility.

PROXIMITY PRESUMPTION

In a license transfer proceeding involving non-operating reactors lacking any source of radioactivity, general concerns about the risks of radiological harm from the ultimate construction and operation of the reactors were insufficient to demonstrate that the license transfer request presented an obvious potential for offsite radiological consequences.

MEMORANDUM AND ORDER

Today we address the petition to intervene and request for a hearing submitted by the Blue Ridge Environmental Defense League and its chapter Bellefonte Efficiency and Sustainability Team (collectively, Petitioners) regarding the license transfer application filed by Nuclear Development, LLC (ND) for the transfer of the construction permits for Bellefonte Nuclear Plant, Units 1 and 2.¹ For the

¹ See Application for Order Approving Construction Permit Transfers and Conforming Administrative Construction Permit Amendments (Construction Permit Nos. CPPR-122 and CPPR-123)
(Continued)

reasons discussed below, we find that Petitioners have not established standing to intervene. We therefore deny the petition and terminate this proceeding.

I. BACKGROUND

The Tennessee Valley Authority (TVA) is the present holder of construction permits authorizing the construction of two nuclear reactors at the Bellefonte site, located on the Tennessee River in northwestern Alabama, approximately seven miles northeast of Scottsboro, Alabama.² TVA commenced, but has not completed, construction of the two reactors, with Unit 1 approximately 55% complete and Unit 2 approximately 35% complete.³ Both reactors are in “deferred plant status” under the Commission Policy Statement on Deferred Plants.⁴ In November 2016, TVA entered into an agreement to sell the Bellefonte site, including the two partially-completed reactors, to ND, a special purpose entity owned by Mr. and Mrs. Franklin L. Haney and trusts for members of their family.⁵ The purchase and sale agreement initially specified that closing would take place on November 14, 2018, but the parties later amended the closing deadline to November 30, 2018.⁶ On November 13, 2018, ND filed the instant license transfer application.⁷

(Application), attached (Attach. 1) to Letter from William R. McCollum, Jr., ND, to NRC Document Control Desk (Nov. 13, 2018) (Cover Letter). The Cover Letter, Application, and associated enclosures can be found at ADAMS accession number ML18318A428.

² Application at 1.

³ *Id.* TVA initiated construction of the reactors in 1975 and ceased construction in 1988. At the time construction ceased, Unit 1 was approximately 90% complete and Unit 2 approximately 60% complete. However, in the ensuing years, TVA removed several installed components for other uses or for salvage. *Id.* In 2011, the NRC extended the deadline for construction of Unit 1 to October 1, 2020; Unit 2 is in timely renewal pursuant to a 2014 request by TVA for extension of that unit’s construction completion date. *Id.* at 3. TVA has requested a further extension for Unit 1 through October 1, 2021. Letter from James Barstow, TVA, to NRC Document Control Desk (Aug. 28, 2020) (ML20244A305). Thus, Unit 1 is also in timely renewal.

⁴ Application at 3; *see* Commission Policy Statement on Deferred Plants, 52 Fed. Reg. 38,077 (Oct. 14, 1987). The full licensing and construction history of the Bellefonte units is complex and not repeated here. *See, e.g.*, Application at 1, 3; *Tennessee Valley Authority* (Bellefonte Nuclear Plant, Units 1 and 2), CLI-10-6, 71 NRC 113 (2010).

⁵ Cover Letter at 1-2; Application at 1.

⁶ *See* Application at 2; *id.*, Encl. 1 at 5. The closing did not take place. According to ND, TVA “failed to close on the transaction as required by the Purchase and Sale Agreement” and ND “initiated legal action in the United States District Court for the Northern District of Alabama . . . asserting a claim for breach of contract and requesting the Court to order TVA to close the sales transaction as called for in the Agreement.” Letter from William R. McCollum, Jr., ND, to NRC Document Control Desk (Aug. 28, 2019), Encl. at 8 (ML19240A382). This matter is still pending with the District Court.

⁷ Cover Letter at 1. ND’s application for this license transfer was not joined by TVA.

In its application, ND requests that the NRC approve the direct transfer of the two construction permits from TVA to ND, extend the construction completion dates for both units, and make amendments to the construction permits reflecting these changes.⁸ Under the proposed license transfer, ND would assume possession of and managerial responsibility for all licensed activities for the Bellefonte units, including maintenance of the reactors in deferred plant status.⁹ ND states that its objective is to complete construction and seek operating licenses for both units in order to sell power in the regional wholesale market.¹⁰ ND “plans to close on acquisition of the Bellefonte Units . . . but undertake no licensed construction activities unless and until the NRC grants the authority requested” in its application.¹¹

On November 21, 2019, the NRC published in the *Federal Register* a notice of “Consideration of Approval of Transfer of Construction Permits and Conforming Amendment.”¹² On December 11, 2019, Petitioners timely filed a petition to intervene and a request for a hearing proffering four contentions challenging ND’s license transfer application.¹³ Because we find that Petitioners have not established standing to intervene in this proceeding, we need not reach the question of whether Petitioners have submitted at least one admissible contention.¹⁴

II. DISCUSSION

A. Legal Standards for Standing

To intervene as of right in any NRC licensing proceeding, a petitioner must demonstrate standing by showing that its interest may be affected by the proceeding.¹⁵ “[W]e have long applied contemporaneous ‘judicial concepts of standing’”

⁸ Application at 1.

⁹ *Id.* at 2.

¹⁰ *Id.*

¹¹ *Id.* at 3.

¹² 84 Fed. Reg. 64,355 (Nov. 21, 2019).

¹³ Petition for Intervention and Request for Hearing by the Blue Ridge Environmental Defense League and Its Chapter Bellefonte Efficiency and Sustainability Team (Dec. 11, 2019) (Petition). ND filed an answer opposing the petition. *See* Applicant’s Answer Opposing Petition to Intervene and Request for Hearing by the Blue Ridge Environmental Defense League and Its Chapter Bellefonte Efficiency and Sustainability Team (Dec. 24, 2019) (Applicant’s Answer). Petitioners did not file a reply. The NRC Staff did not participate as a party.

¹⁴ *See* 10 C.F.R. § 2.309(a) (requiring intervenors to demonstrate standing and submit an admissible contention).

¹⁵ *See* Atomic Energy Act of 1954, as amended (AEA), § 189a., 42 U.S.C. § 2239(a); 10 C.F.R. (Continued)

to assess whether a petitioner has established the requisite interest to intervene.¹⁶ Under this framework, a petitioner must identify an actual or threatened injury that is fairly traceable to the challenged action, is likely to be redressed by a favorable decision, and arguably falls within the “zone of interests” protected by the AEA or other relevant statute.¹⁷ The injury “must be both concrete and particularized, not ‘conjectural,’ or ‘hypothetical.’”¹⁸ While we afford greater latitude to a hearing request submitted by a *pro se* petitioner, it is ultimately the petitioner’s burden to provide sufficient facts to establish standing.¹⁹

An organization seeking to intervene may obtain standing as a representative of one or more of its individual members.²⁰ To demonstrate representational standing, the organization must show that at least one of its members may be affected by the NRC’s approval of a licensing action (for example, by the member’s domicile, work, or activities on or near the site) and qualifies for standing in his or her own right.²¹ The organization must also identify the member by name and demonstrate that the member has authorized the organization to represent him or her and to request a hearing on his or her behalf.²² In addition, the organization must show that the interests it seeks to protect are germane to its own purpose.²³

In certain licensing proceedings, such as construction permit and operating licensing proceedings for power reactors, the NRC “recognize[s] a ‘proximity’ . . . presumption” under which “we presume that a petitioner has standing to intervene if the petitioner lives within, or otherwise has frequent contacts with,

§ 2.309(d)(1); *FirstEnergy Nuclear Operating Co. and FirstEnergy Nuclear Generation, LLC* (Beaver Valley Power Station, Units 1 and 2), CLI-20-5, 91 NRC 214, 219 (2020).

¹⁶ *Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915 (2009); *see also U.S. Department of Energy* (Plutonium Export License), CLI-04-17, 59 NRC 357, 363 (2004); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993).

¹⁷ *Entergy Nuclear Operations, Inc. and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 258 (2008). The petitioner must also “specify the facts pertaining to that interest.” *Id.*

¹⁸ *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 72 (1994) (internal citation omitted) (quoting *O’Shea v. Littleton*, 414 U.S. 488, 494 (1974)).

¹⁹ *See Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Unit 3), CLI-20-6, 91 NRC 225, 238 (2020); *U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island of Hawaii, Hawaii), CLI-10-20, 72 NRC 185, 189 (2010).

²⁰ *Beaver Valley*, CLI-20-5, 91 NRC at 220.

²¹ *Id.*; *Palisades*, CLI-08-19, 68 NRC at 258-59; *Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 409 (2007).

²² *Palisades*, CLI-08-19, 68 NRC at 258-59; *Palisades*, CLI-07-18, 65 NRC at 409.

²³ *Palisades*, CLI-08-19, 68 NRC at 259; *Palisades*, CLI-07-18, 65 NRC at 409; *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999).

the zone of possible harm from the nuclear reactor.”²⁴ In these cases, we have found standing based solely on proximity when a petitioner lives within approximately fifty miles of the facility in question.²⁵ But in other cases, such as those involving license transfers or non-power reactors, “[w]e determine on a case-by-case basis whether the proximity presumption should apply, considering the ‘obvious potential for offsite [radiological] consequences,’ or lack thereof, from the application at issue.”²⁶ If a petitioner cannot show an obvious potential for harm from a proposed activity, the inquiry reverts to a traditional standing analysis of injury, traceability, and redressability.²⁷

B. Ruling on Standing

Petitioners assert representational standing on behalf of two members, Mr. Garry Morgan and Ms. Sandra Kurtz. Mr. Morgan and Ms. Kurtz live approximately 4.5 and forty-three miles from the Bellefonte site, respectively.²⁸ Citing an Atomic Safety and Licensing Board decision, Petitioners assert that because Mr. Morgan and Ms. Kurtz reside within fifty miles of the Bellefonte site, they are entitled to presumptive proximity standing.²⁹

The fifty-mile proximity presumption for construction permit and operating license proceedings “rests on our finding, in [such] cases, that persons living within the roughly [fifty]-mile radius of the facility ‘face a realistic threat of harm’ if a release from the facility of radioactive material were to occur.”³⁰ These licensing actions, as well as significant reactor license amendment actions, involve the “construction or operation of the reactor itself, with clear implications for the offsite environment, or major alterations to the facility with

²⁴ *Calvert Cliffs*, CLI-09-20, 70 NRC at 915.

²⁵ *Id.* at 915-16 (citing *Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-19, 65 NRC 423, 426 (2007)).

²⁶ *Big Rock Point*, CLI-07-19, 65 NRC at 426 (quoting *Exelon Generation Co., LLC and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580 (2005)); see *Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 177 (2020).

²⁷ *Palisades*, CLI-08-19, 68 NRC at 268-69; *Peach Bottom*, CLI-05-26, 62 NRC at 581.

²⁸ Petition at 4-5. Mr. Morgan and Ms. Kurtz have authorized the Petitioners to represent them in this matter. See Declaration of Standing for Garry L. Morgan (Dec. 11, 2019), at 2 (Morgan Declaration); Declaration of Standing for Sandra L. Kurtz (Dec. 10, 2019), at 2 (Kurtz Declaration).

²⁹ Petition at 4-5 (citing *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), LBP-02-23, 56 NRC 413, 426-27 (2002)).

³⁰ *Calvert Cliffs*, CLI-09-20, 70 NRC at 917 (quoting *Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), LBP-09-4, 69 NRC 170, 183 (2009)).

a clear potential for offsite consequences.”³¹ Outside of these circumstances, we determine on a case-by-case basis whether “the proposed action involves a significant source of radioactivity producing an obvious potential for offsite consequences,” and our determination of the geographical extent appropriate for a presumption of standing “depends on the danger posed by the source at issue.”³²

Mr. Morgan’s and Ms. Kurtz’s residing within fifty miles of the Bellefonte site would typically entitle Petitioners to presumptive standing if this were a proceeding for the issuance of a construction permit. Rather, the licensing action under consideration is whether to grant ND’s request to transfer the existing construction permits for the Bellefonte units. Therefore, to obtain presumptive standing based on proximity, Petitioners must show that the instant license transfer proceeding presents an “obvious potential for offsite [radiological] consequences” to Mr. Morgan and Ms. Kurtz, “taking into account the nature of the proposed action and the significance of the radioactive source.”³³

In general, we have found that license transfers present a low potential for offsite radiological consequences.³⁴ As we observed in *Big Rock Point*, “[l]icense transfers even for *operating* nuclear power plants typically involve little if any radiological risk, as there are generally no changes to the physical plant, its operating procedures, or its design basis accident analysis.”³⁵ Thus, we have found proximity-based standing unavailable where the proposed action did not involve changes to the operation, personnel, or financing of the facility.³⁶ We have likewise not applied proximity-based standing where the radiological source presented a low potential for radiological consequences or where the facility

³¹ *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989) (providing expansion of a spent fuel pool as an example of a significant license amendment).

³² *Sequoyah Fuels Corp.*, CLI-94-12, 40 NRC at 75 n.22; *see also Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 116-17 (1995).

³³ *Big Rock Point*, CLI-07-19, 65 NRC at 426 (quoting *Peach Bottom*, CLI-05-26, 62 NRC at 580-81).

³⁴ *See id.*; *cf. Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-19-11, 90 NRC 258, 263 & n.14 (2019) (noting that NRC regulations and historical experience support the presumption that license transfers in general do not result in a significant impact on public health, safety, or the environment).

³⁵ *Big Rock Point*, CLI-07-19, 65 NRC at 426.

³⁶ *See, e.g., Northeast Nuclear Energy Co. and Consolidated Edison Co. of New York, Inc.* (Millstone Nuclear Power Station, Units 1, 2, and 3), CLI-00-18, 52 NRC 129, 132-33 (2000); *see also Palisades*, CLI-08-19, 68 NRC at 269 (noting that the Commission has “never granted proximity-based standing to a petitioner in an indirect license transfer adjudication”).

in question was “essentially a passive structure rather than an operating facility.”³⁷

In their petition and accompanying declarations, Petitioners do not point to any credible scenario in which the transfer of the Bellefonte construction permits to ND would result in obvious offsite radiological consequences to their members. Instead, Petitioners express general concerns that the transfer of the permits would allow ND to proceed with construction of the reactors and that their construction and operation would “present a tangible and particular harm to the health and well-being” of its members residing near the Bellefonte site.³⁸ For their part, Mr. Morgan and Ms. Kurtz assert that the reactors “pose a grave risk to [their] health and safety” and that they fear serious illness or death “if an accident involving atmospheric release of radiological material were to occur.”³⁹ But these concerns present an undefined potential for radiological harm from the ultimate construction and operation of the reactors.⁴⁰

ND seeks the transfer of construction permits for two partially constructed reactors, with no radiological source present at the site.⁴¹ Authorization to transfer the Bellefonte construction permits, should it be granted, does not constitute authorization to operate the Bellefonte reactors. Operation of the reactors would require a separate operating license application and review by the NRC, which would also give rise to a hearing opportunity.⁴² Given that the current proceeding is limited to a license transfer and involves non-operating reactors lacking any source of radioactivity, we find Petitioners’ general concerns about the risks of radiological harm from the ultimate construction and operation of the reactors insufficient to demonstrate that ND’s license transfer request presents an obvious potential for offsite radiological consequences.⁴³ Accordingly, we find that Petitioners have not established standing under a proximity presumption.

³⁷ *Big Rock Point*, CLI-07-19, 65 NRC at 426; see *EnergySolutions, LLC* (Radioactive Waste Import/Export Licenses), CLI-11-3, 73 NRC 613, 622 & n.46 (2011); see also *Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-21, 65 NRC 519, 523 (2007) (finding that the “difference in potential risk between a reactor and an [independent spent fuel storage installation (ISFSI)]” justified a determination that proximity-based standing was not available in ISFSI direct license transfer proceeding). But cf. *Holtec International*, CLI-20-4, 91 NRC at 177-78 (upholding grant of standing based on petitioner’s member’s residence within ten miles and significant activities within approximately three miles of proposed large consolidated ISFSI).

³⁸ Petition at 5.

³⁹ Kurtz Declaration ¶ 5; Morgan Declaration ¶ 5. Ms. Kurtz also expresses her concern that the Bellefonte reactors are “inherently dangerous.” Kurtz Declaration ¶ 5.

⁴⁰ See *EnergySolutions*, CLI-11-3, 73 NRC at 622.

⁴¹ See Applicant’s Answer at 18.

⁴² 10 C.F.R. § 50.57; see AEA, § 189a., 42 U.S.C. § 2239(a).

⁴³ See *Big Rock Point*, CLI-07-19, 65 NRC at 426.

We also find that Petitioners have not satisfied the requirements for traditional standing. Specifically, Petitioners have not shown that their members will suffer any concrete and particularized injury attributable to this license transfer proceeding. In their petition, Petitioners assert that their members would suffer a “tangible and particular harm” from construction and operation of the reactors.⁴⁴ Petitioners’ member, Ms. Kurtz, points to the “long delay and neglected state of these nuclear reactors” and expresses concerns about the inherent danger and lack of experience concerning the reactors.⁴⁵ Ms. Kurtz and Mr. Morgan also assert that in the forty-five years since the construction permits for the reactors were first issued, many conditions have changed, including the environment, land use, and population.⁴⁶ However, Petitioners do not draw a connection between these concerns and the license transfer application at issue in this proceeding. Mr. Morgan and Ms. Kurtz state that they fear severe consequences to their health and safety from the accidental atmospheric release of radiological material at the Bellefonte site, but the Petitioners offer no explanation as to how such a radiological accident might be expected to result from the transfer of the Bellefonte construction permits from TVA to ND.⁴⁷ To demonstrate an injury in fact, Petitioners must show that they “will in fact be perceptibly harmed by the challenged agency action, not that [they] can imagine circumstances in which [they] could be affected by the agency’s action.”⁴⁸ Petitioners have not made that showing here.

Moreover, Petitioners’ argument that transfer of the permits “would allow [ND] to proceed with its stated purpose” of constructing the reactors is also insufficient to establish standing.⁴⁹ Under traditional standing jurisprudence, petitioners must show that the alleged harm is fairly traceable to the challenged action and that the asserted injury could be redressed by this proceeding.⁵⁰ Petitioners do not point to any specific aspect of ND’s application that, if denied, would redress Petitioners’ injuries. Here, the construction permits already authorize TVA, the current permit holder, to conduct the activity that Petitioners assert would cause them injury, namely, to construct the Bellefonte units. Petitioners have not explained how the transfer of this same authority to ND would cause a particularized injury to Petitioners’ members that is distinct from what

⁴⁴ Petition at 5.

⁴⁵ See Kurtz Declaration ¶ 5.

⁴⁶ See *id.* ¶ 4; Morgan Declaration ¶ 4.

⁴⁷ See Kurtz Declaration ¶ 5; Morgan Declaration ¶ 5.

⁴⁸ *Nuclear Fuel Services, Inc.* (Erwin, Tennessee), CLI-04-13, 59 NRC 244, 248 (2004) (quoting *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 412 U.S. 669, 688-89 (1973)).

⁴⁹ See Petition at 5.

⁵⁰ *E.g., Palisades*, CLI-08-19, 68 NRC at 258.

the present circumstances allow. Further, because TVA would retain the authority to construct the Bellefonte units even if the transfer is denied, Petitioners have not demonstrated that their asserted injury would be redressed by denial of the license transfer application.

In summary, we find that Petitioners have not established that one or more of their members qualifies for either proximity-based or traditional standing. Therefore, we decline to grant Petitioners representational standing to participate in this proceeding.⁵¹

III. CONCLUSION

For these reasons, we *deny* Petitioners' request for a hearing and petition to intervene and *terminate* this proceeding.

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 17th day of December 2020.

⁵¹ Further, as ND observes, "nowhere in the Petition or two standing declarations do Petitioners describe the organizational purposes of BREDL or BEST" Applicant's Answer at 14. While we hold *pro se* petitioners to less rigid pleading standards, it remains the petitioner's burden to demonstrate that it meets all the substantive requirements for standing. *See Vogtle*, CLI-20-6, 91 NRC at 230). However, because we find that Petitioners have not established that any of their members is entitled to standing in his or her own right, we need not reach the question of whether Petitioners have demonstrated for the purposes of establishing representational standing that the interests they seek to protect are germane to their organizational purpose.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

Docket No. 52-049-COL

OKLO POWER, LLC
(Aurora Reactor)

December 22, 2020

DOCKETING

Examining the NRC Staff's rationale for docketing an application is not within the scope of an NRC adjudicatory proceeding.

NRC STAFF REVIEW

With limited exceptions it is the license application, not the NRC Staff review, that is at issue in NRC adjudications.

REQUESTS FOR ADDITIONAL INFORMATION

The view that the Staff should not docket an application when it planned to seek additional information to complete its safety review "is incompatible with the dynamic licensing process followed in Commission licensing proceedings." *Curators of the University of Missouri*, CLI-95-8, 41 NRC 386, 395 (1995). Requests for additional information and regulatory audits are a routine part of NRC licensing reviews.

MEMORANDUM AND ORDER

On July 31, 2020, a number of organizations¹ (Petitioners) jointly filed an emergency petition² (Petition) to immediately revoke or suspend the docketing notice and hearing notice in this proceeding.³ For the reasons specified below, we deny the Petition.

I. BACKGROUND

On March 11, 2020, Oklo Power, LLC (Oklo) submitted a combined license application (Application) to build and operate a four-megawatt thermal micro-reactor, called the Aurora, on the site of the Idaho National Laboratory.⁴ The NRC Staff accepted the Application for docketing and noted that it plans to complete the review of the Aurora design in a two-step process.⁵ In Step 1, the Staff plans to “engage Oklo in public meetings, conduct regulatory audits, and issue requests for additional information to efficiently align on four key safety and design aspects of the licensing basis.”⁶ At the end of Step 1, the Staff plans to develop a review schedule for Step 2 and complete the remainder of its technical review.⁷

¹The Petitioners are: Beyond Nuclear, Blue Ridge Environmental Defense League, Citizens Awareness Network, Citizen Power, Citizens’ Resistance at Fermi Two, Concerned Citizens for Nuclear Safety, Don’t Waste Michigan, Ecological Options Network, Food and Water Watch, Friends of the Earth, HEAL Utah, Indian Point Safe Energy Coalition, Manhattan Project for a Nuclear-Free World, National Nuclear Workers for Justice, Nevada Nuclear Waste Task Force, Nuclear Energy Information Service, Nuclear Information and Resource Service, Nuclear Watch New Mexico, Oak Ridge Environmental Peace Alliance, Physicians for Social Responsibility, Portsmouth/Piketon Residents for Environmental Safety and Security, Promoting Health and Sustainable Energy, Tennessee Environmental Council, Three Mile Island Alert, San Luis Obispo Mothers for Peace, Snake River Alliance, Tri-Valley Cares, and Uranium Watch (Petitioners).

²While the Petitioners designate their filing as an “emergency petition,” they do not demonstrate that there is an urgent safety matter that we must address.

³Emergency Petition by [Petitioners] to Immediately Revoke or Suspend Docketing Notice and Hearing Notice for Combined License Application for Oklo Power, LLC and Request for Clarification that Nuclear Energy Innovation and Modernization Act Does Not Mandate or Authorize Disregard of NRC Procedural Requirements for New Reactor License Applicants (July 31, 2020) (ADAMS accession no. ML20213C692).

⁴Oklo Power Combined Operating License Application for the Aurora at Idaho National Laboratory (Mar. 11, 2020) (ML20075A000 (package)) (Application).

⁵Letter from Jan Mazza, NRC, to Dr. Jacob DeWitte, Oklo, Inc. (June 5, 2020) (ML20149K616) (Docketing Letter).

⁶*Id.* at 2.

⁷The Staff plans to address four topics in Step 1: use of a maximum credible accident in the Aurora
(Continued)

On June 16, 2020, a notice of the Staff's decision to docket the Application was published in the *Federal Register*.⁸ Shortly thereafter, the Staff published a Notice of Hearing and Opportunity to Petition for Leave to Intervene in the *Federal Register*, which set a deadline of August 31, 2020, for intervention petitions.⁹ In response, the Petitioners filed their Petition seeking to immediately revoke or suspend the docketing notice and hearing notice. On August 10, 2020, the Staff and Oklo each filed a response in opposition to the Petition.¹⁰ On August 17, 2020, the Petitioners moved for leave to reply to the Oklo Answer and the Staff Answer and submitted their proposed reply.¹¹ Oklo opposed the Petitioners' motion.¹² Given that we consider the Petition under our inherent supervisory authority, we need not address the propriety of the Petitioners' motion for leave to reply.¹³ We have reviewed the Petitioners' reply and have determined that it would not affect our decision.

safety case; the Applicant's classification of structures, systems, and components; the applicability of NRC regulations to a non-light water reactor design like the Aurora; and certain aspects of the Applicant's quality assurance program. *Id.*; NRC Staff Answer Opposing Emergency Petition to Suspend Docketing Decision and Hearing Notice (Aug. 10, 2020), at 4 (Staff Answer).

⁸ Oklo Power LLC, Combined License Application; Acceptance for Docketing, 85 Fed. Reg. 36,427 (June 16, 2020) (Docketing Notice).

⁹ Oklo, Inc.; Oklo Power LLC, Combined License Application; Notice of Hearing and Opportunity to Petition for Leave to Intervene; Order Imposing Procedures, 85 Fed. Reg. 39,214 (June 30, 2020) (Hearing Notice).

¹⁰ Staff Answer; Oklo Power LLC's Answer Opposing July 31, 2020 Unauthorized Filing by Beyond Nuclear et al. (Aug. 10, 2020) (Oklo Answer).

¹¹ Petitioners' Motion for Leave to Reply to NRC Staff and Oklo Oppositions to Emergency Petition to Revoke or Suspend Docketing Notice and Hearing Notice for Oklo COL Application (Aug. 17, 2020); Petitioners' Reply to Oppositions to Emergency Petition by Beyond Nuclear, et al. to Immediately Revoke or Suspend Docketing Notice and Hearing Notice for Combined License Application by Oklo Power, LLC and Request for Clarification that Nuclear Energy Innovation and Modernization Act Does Not Mandate or Authorize Disregard of NRC Procedural Requirements for New Reactor License Applicants (Aug. 17, 2020). On August 18, 2020, the Petitioners filed a corrected version of their reply. Corrected Petitioners' Reply to Oppositions to Emergency Petition by Beyond Nuclear, et al. to Immediately Revoke or Suspend Docketing Notice and Hearing Notice for Combined License Application by Oklo Power, LLC and Request for Clarification that [Nuclear Energy Innovation and Modernization Act] Does Not Mandate or Authorize Disregard of NRC Procedural Requirements for New Reactor License Applicants (Aug. 18, 2020).

¹² Oklo Power LLC's Answer Opposing Beyond Nuclear et al. August 17, 2020[, Motion for Leave to File a Reply (Aug. 20, 2020) (Oklo Answer Opposing Reply).

¹³ See *Union Electric Co.* (Callaway Plant, Unit 2), CLI-11-5, 74 NRC 141, 145-46, 158 & n.65 (2011) (considering a series of petitions "to suspend adjudicatory, licensing, and rulemaking activities" in multiple proceedings under the Commission's inherent supervisory authority and declining to address "a number of procedural issues that would merit further discussion in a traditional adjudication").

II. DISCUSSION

The Petitioners challenge the Staff's decision to docket the Application and claim defects in the Hearing Notice.¹⁴ They raise concerns regarding the Staff's planned two-step review approach and the Application itself.¹⁵ The Petitioners request that the Commission exercise its supervisory authority over this proceeding to immediately revoke or suspend the docketing notice and hearing notice and "[c]larify that nothing in [the Nuclear Energy Innovation and Modernization Act (NEIMA)] authorizes the Staff to avoid or disregard NRC's current legal requirements for issuing docketing notices and hearing notices in licensing proceedings."¹⁶

The Commission has previously considered "requests to suspend proceedings or hold them in abeyance in the exercise of our inherent supervisory powers over proceedings."¹⁷ We consider the Petitioners' similar request here and view the suspension of licensing proceedings to be a "'drastic action' that is not warranted absent 'immediate threats to public health and safety.'"¹⁸

The Petitioners challenge the Staff's decision to docket the Application and claim that the Staff failed to make a sufficient completeness finding.¹⁹ However, it is well settled in our case law that the Staff's decision to docket an application is not challengeable in an adjudicatory proceeding.²⁰ With limited exceptions such as the Staff's review under the National Environmental Policy Act (NEPA) and other environmental statutes,²¹ "it is the license application, not the NRC staff review that is at issue in our adjudications."²² As we have explained, "[t]he NRC has not, and will not, litigate claims about the adequacy of the Staff's

¹⁴ Petition at 13-16, 16-21.

¹⁵ *Id.*

¹⁶ *Id.* at 3, 32.

¹⁷ *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23, 68 NRC 461, 484-85 (2008). Because we consider the Petition under our inherent supervisory authority, we need not address the procedural issue of whether the requirements of 10 C.F.R. § 2.323 apply. *Callaway*, CLI-11-5, 74 NRC at 158 n.65; *see* Oklo Answer at 6.

¹⁸ *Oyster Creek*, CLI-08-23, 68 NRC at 484 (quoting *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 173-74 (2000)).

¹⁹ Petition at 23-24.

²⁰ *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), CLI-08-15, 68 NRC 1, 3 n.2 (2008).

²¹ The Staff's review under NEPA is an exception because "NEPA places legal duties on the NRC, not on license applicants." *Oyster Creek*, CLI-08-23, 68 NRC at 476-77 n.64.

²² *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 350 (1998); *see* Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2202 (Jan. 14, 2004).

safety review in licensing adjudications.”²³ Furthermore, “[a]n application is neither accepted for full review by the NRC Staff nor automatically noticed for a possible hearing when it is submitted.”²⁴ Rather, an application is only noticed for a possible hearing once it has been accepted, or docketed, by the Staff.²⁵ In conducting the preliminary acceptance review, “the Staff reviews [the application] to ensure it contains the information and analyses [required] in a proper application to allow the Staff’s full review of the proposed licensing action.”²⁶ In deciding whether to accept for docketing an application, “the Staff does not consider the technical or legal merits of the application; rather, the Staff’s preliminary review is simply a screening process — a determination whether the license application contains sufficient information for the NRC to begin its safety review.”²⁷ Accordingly, we find the Petitioners’ challenges to the Staff’s docketing decision unavailing.

The Petitioners also request that we clarify that the Staff’s docketing decision is not mandated or excused by NEIMA.²⁸ In support of their argument, the Petitioners cite to the docketing letter wherein the Staff stated that one of the circumstances it considered in docketing the Application was that “it is in the national interest to allow innovation and the commercialization of safe and secure advanced nuclear reactors as indicated in [NEIMA].”²⁹ As we explained above, however, NRC Staff docketing decisions are not subject to challenge in NRC adjudications. Moreover, “the issue for decision is not whether the Staff performed well, but whether the license application raises health and safety concerns.”³⁰ Examining the Staff’s rationale for docketing the Application is not within the scope of our adjudicatory proceedings.³¹

²³ *Oyster Creek*, CLI-08-23, 68 NRC at 476.

²⁴ *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-12, 59 NRC 237, 241 (2004); see 10 C.F.R. § 2.101 (outlining the application submittal and docketing process).

²⁵ *Millstone*, CLI-04-12, 59 NRC at 241-242.

²⁶ *Id.*

²⁷ *U.S. Department of Energy* (High-Level Waste Repository), CLI-08-20, 68 NRC 272, 274 (2008).

²⁸ Petition at 29.

²⁹ Docketing Letter at 1; see Petition at 29.

³⁰ *Curators of the University of Missouri*, CLI-95-8, 41 NRC 386, 396 (1995); see *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 213 (1998) (“Adjudications are not the appropriate forum for resolving complaints about NRC Staff conduct.”).

³¹ See *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-16-12, 83 NRC 542, 555 (2016) (rejecting appellant’s argument that the Staff’s review of a license amendment application must await a decision on a related exemption request because the argument took “issue with the timing of the Staff’s review — an issue that is not cognizable in an adjudicatory proceeding”).

The Petitioners' arguments challenging the Staff's planned two-step approach are also outside the scope of our adjudications.³² The Petitioners claim that by requesting additional information and conducting regulatory audits in Step 1, the Staff is improperly conducting an acceptance review of the application after it has already been docketed.³³ However, we have previously found that "[t]he mere fact that the Staff is asking for more information does not make an application incomplete."³⁴ Indeed, "[t]he Commission considers many applications sufficiently complete for purposes of docketing, and for starting the adjudicatory process, even though the staff subsequently poses questions to the applicants regarding those applications."³⁵ In fact, the docketing notice in this proceeding made clear that "[d]ocketing of the application does not preclude the NRC from requesting additional information from the applicant as the review proceeds, nor does it predict whether the Commission will grant or deny the application."³⁶

The Petitioners' view that the Staff should not have docketed the Application when it planned to seek additional information to complete its safety review "is incompatible with the dynamic licensing process followed in Commission licensing proceedings."³⁷ Requests for additional information and regulatory audits are a routine part of NRC licensing reviews.³⁸

Although the Petitioners claim that the Application itself is deficient,³⁹ the proper vehicle for such a challenge is the filing of contentions, which can be

³² See Petition at 27-29.

³³ *Id.* at 15-16, 27-29.

³⁴ *Shearon Harris*, CLI-08-15, 68 NRC at 3.

³⁵ *Calvert Cliffs*, CLI-98-25, 48 NRC at 350.

³⁶ Docketing Notice, 85 Fed. Reg. at 36,427.

³⁷ *Curators of the University of Missouri*, CLI-95-8, 41 NRC at 395 ("We by no means encourage defective applications, but we also do not take the Intervenor's absolutist position that an application, however minimally flawed, must be rejected altogether, and may not be modified or improved as NRC review goes forward."); see *Calvert Cliffs*, CLI-98-25, 48 NRC at 349-50.

³⁸ See, e.g., 10 C.F.R. § 2.102(a) ("During review of an application by the NRC staff, an applicant may be required to supply additional information."); *Exelon Generation Co. (Early Site Permit for Clinton ESP Site)*, CLI-07-12, 65 NRC 203, 207-08 (2007) ("We consider our current regulatory approach, of relying on our licensees to submit complete and accurate information, and auditing that information as appropriate, to be entirely consistent with sound regulatory practice."); *Calvert Cliffs*, CLI-98-25, 48 NRC at 349 ("[Requests for additional information] are a standard and ongoing part of NRC licensing reviews.").

³⁹ The Petitioners argue that the Application (1) fails to comply with the requirements of 10 C.F.R. § 52.79(a) to include a Final Safety Analysis Report that "presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems and components of the facility as a whole;" Petition at 24 (citing 10 C.F.R. § 52.79(a)); (2) fails to address several requirements in 10 CFR Part 52, *id.* at 25; and (3) fails to address "the radiological impacts of the proposed reactor or the uranium fuel cycle, including those aspects that are unique to this project" in the Environmental Report. *Id.*

addressed within the framework of our normal hearing process.⁴⁰ In fact, “the very purpose of NRC adjudicatory hearings is to consider claims of deficiencies in a license application; such contentions are commonplace at the outset of NRC adjudications.”⁴¹

The Petitioners acknowledge their obligation to examine the application and other publicly available documents and file contentions within the initial sixty-day timeframe to intervene in this proceeding.⁴² However, our hearing process also contemplates that contentions may be filed after the initial deadline to intervene based on new and materially different information.⁴³ Thus, to the extent that new and materially different information gleaned during Step 1 of the Staff’s review “raises a legitimate question about the adequacy of the [a]pplication,” the Petitioners can submit a contention to that effect, subject to the filing requirements in 10 C.F.R. § 2.309(c).⁴⁴

The issues the Petitioners raise with respect to the Application do not rise to the level of an immediate public health and safety concern to warrant the drastic remedy of suspending the entirety of the Staff’s review of the Application.⁴⁵ The Petitioners claim that the deficiencies in the Application deprive them of a full and fair opportunity to request a hearing.⁴⁶ Specifically, they argue that several documents relevant to the proceeding, including the Application itself and the Staff’s audit plan of the Application, were not readily accessible to the public in the NRC’s Agencywide Documents Access and Management System (ADAMS).⁴⁷

⁴⁰ See *Shearon Harris*, CLI-08-15, 68 NRC at 3 (“If the Petitioners believe the Application is incomplete in some way, they may file a contention to that effect.”).

⁴¹ *Id.* (citing *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-06-7, 63 NRC 188 (2006); *Connecticut Yankee Atomic Power Co.* (Haddam Neck Plant), LBP-01-21, 54 NRC 33 (2001), *petition for review denied*, CLI-01-25, 54 NRC 368 (2001); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998), *aff’d in part*, CLI-98-13, 48 NRC 26 (1998)).

⁴² *Oconee*, CLI-99-11, 49 NRC at 338 (internal citation marks omitted); see *Petition* at 22.

⁴³ See 10 C.F.R. § 2.309(c), (f)(2).

⁴⁴ *Calvert Cliffs*, CLI-98-25, 48 NRC 350 (quotations omitted). In addition to complying with the requirements of 10 C.F.R. § 2.309(c) to demonstrate good cause for filing after the initial deadline for intervention petitions, a petitioner must also submit contentions that meet the applicable contention admissibility requirements in 10 C.F.R. § 2.309(f) and demonstrate standing. 10 C.F.R. § 2.309(c), (d), (f).

⁴⁵ See *Petition* at 2, 31.

⁴⁶ *Id.* at 3, 22-23, 27-29.

⁴⁷ *Petition* at 18; see “Audit Plan for the Oklo Power LLC. Aurora Reactor Combined License Application Acceptance Review” (Apr. 1, 2020) (ML20079L202). The Staff notes that “[t]he audit summary report for this audit is in concurrence at the time of this filing and will be released publicly.” *Staff Answer* at 6 n.24.

In its answer to the Petition, the Staff acknowledged that “[a]lthough the documents were in ADAMS and accessible from the NRC’s public website, and the Petitioners obtained access to them, the Petitioners correctly noted that the documents were not yet profiled by docket number in ADAMS.”⁴⁸ The Staff indicated that it has since “corrected the electronic information associated with these files so that the docket number is included.”⁴⁹

The fact that the Application and related documents were not profiled in ADAMS with the proceeding’s docket number for a short period of time does not compromise the integrity of the proceeding. The Application, which is the focus of NRC adjudications,⁵⁰ was publicly available for the entirety of the sixty-day intervention period, and the Hearing Notice correctly provided the ADAMS accession number for the Application.⁵¹

For these reasons, we deny the Petitioners’ request that we exercise our supervisory authority to immediately revoke or suspend the docketing notice and hearing notice or to make the requested clarifications.

The Petitioners contend that “Oklo’s failure to show, in its application, what portions have been redacted or indicate the grounds for the redactions, makes it impossible to determine what [Sensitive Unclassified Non-Safeguards Information (SUNSI)], safeguards, or proprietary information should be requested, as directed in the hearing request.”⁵² Consistent with our regulations, Oklo appropriately bracketed those portions of the Application it sought to withhold from public disclosure and included affidavits supporting the rationale for the withholdings.⁵³ However, the brackets demarking the redactions were not appropriately copied over into the public version of the Application. Rather, the current publicly available version of the Application “whites out” the withheld segments leaving only blank spaces without any indication of whether the blank space represents an end of a discussion or redacted information. While the Petitioners are correct that it is difficult to discern what portions of the Appli-

⁴⁸ Staff Answer at 4 n.12.

⁴⁹ *Id.*

⁵⁰ *Oyster Creek*, CLI-08-23, 68 NRC at 476 (“The purpose and scope of a licensing proceeding is to allow interested persons the right to challenge the sufficiency of the application.”); *Calvert Cliffs*, CLI-98-25, 48 NRC at 349 (“Under our longstanding practice, contentions must rest on the *license application*, not on NRC staff reviews.”).

⁵¹ See Hearing Notice, 85 Fed. Reg. at 39,214. The Application was first made publicly available on March 27, 2020. NRC Press Release No. 20-019, “NRC Makes Oklo Advanced Reactor Application Publicly Available” (Mar. 27, 2020) (ML20087M738).

⁵² Petition at 28.

⁵³ See Affidavit of Caroline Cochran Requesting Withholding of Part I from Public Disclosure (Mar. 11, 2020) (ML20075A013); Affidavit of Caroline Cochran Requesting Withholding of Part II from Public Disclosure (Mar. 11, 2020) (ML20075A014); Affidavit of Caroline Cochran Requesting Withholding of Part IV from Public Disclosure (Mar. 11, 2020) (ML20075A015).

cation are being withheld, we do not find that this lack of clarity justifies the extraordinary remedy requested by the Petitioners.

However in the interest of transparency, we direct the Staff to make available a public version of the Application that allows a member of the public to reasonably discern what portions of the Application are withheld within fifteen days of the publication of this Order (e.g., by inserting brackets around the whited-out segments or blacking out the redacted segments). The Staff should file a notice on the hearing docket of this proceeding when the appropriately redacted version of the Application is available and include the ADAMS accession number of that version of the Application.

III. CONCLUSION

We *deny* the Petitioners' request to immediately revoke or suspend the docketing notice and hearing notice. We *direct* the Staff, within fifteen days of the publication of this Order, to make available an appropriately redacted version of the Application and to file a notice on the Hearing Docket when that version is available.

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 22nd day of December 2020.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

Docket No. 52-025-LA-3

**SOUTHERN NUCLEAR OPERATING
COMPANY, INC.
(Vogtle Electric Generating Plant,
Unit 3)**

December 22, 2020

STANDARD OF REVIEW

The Commission generally defers to the Board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion.

APPEALS

A contention that the license application was incomplete may not be raised for the first time on appeal.

DOCKETING

The decision to docket an application is committed to the Staff's discretion and is not typically reviewable in an adjudicatory proceeding.

NRC STAFF REVIEW

Audits are a sound regulatory practice reflected in the Staff's internal licens-

ing guidance and are routinely used as part of the Staff's independent technical review.

MEMORANDUM AND ORDER

Today we address the appeal of Blue Ridge Environmental Defense League and its chapter Concerned Citizens of Shell Bluff (BREDL) from the Atomic Safety and Licensing Board's denial of its hearing request on Southern Nuclear Operating Company, Inc.'s (SNC's) application for an amendment to the Vogtle Electric Generating Plant Unit 3 (Vogtle Unit 3) combined license.¹ For the reasons discussed below, we affirm the Board's decision.

I. BACKGROUND

On February 7, 2020, SNC applied for an amendment to its license for Vogtle Unit 3, a Westinghouse Electric Company Advanced Passive 1000 (AP1000) reactor, and requested an exemption from regulations governing the AP1000 design.² The application proposed to change a requirement that the Vogtle Unit 3 auxiliary and annex buildings be constructed with a three-inch minimum seismic gap between them.³ The purpose of the three-inch gap is to help ensure the buildings do not interact in the event of an earthquake.⁴

As built, the two buildings are closer together than three inches over a limited area.⁵ Specifically, a variation in a thirteen-foot section of the auxiliary building wall leaves a minimum gap of 2-3/16 inches between the auxiliary building and the annex building.⁶ This difference does not conform with design information in the Vogtle Unit 3 Updated Final Safety Analysis Report (UFSAR) or the AP1000 certified design, which is incorporated by reference

¹ After the Board denied BREDL's hearing request and terminated the proceeding, BREDL filed a motion to reopen the proceeding while its appeal was pending before us. *See* Motion to Reopen Proceeding and Request to Amend Contentions by the Blue Ridge Environmental Defense League and its Chapter Concerned Citizens of Shell Bluff Regarding Southern Nuclear Operating Company's Request for a License Amendment and Exemption for Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements, LAR-20-001 (Dec. 7, 2020) (Motion to Reopen). BREDL's Motion to Reopen will be addressed in a separate decision.

² *See* Letter from Brian H. Whitley, SNC, to NRC Document Control Desk (Feb. 7, 2020), Encl. 1 (Application), Encl. 2 (Exemption Request) (ADAMS accession no. ML20038A939).

³ Application at 4-5.

⁴ *Id.* at 3-4.

⁵ *Id.*

⁶ *Id.*

into our regulations.⁷ SNC performed a technical evaluation and determined the smaller, as-built gap would still ensure the two buildings do not interact during an earthquake and would thus satisfy the same safety function as a three-inch gap.⁸ Based on that technical evaluation, SNC requested a license amendment to permit a smaller seismic gap over the specified area as well as an exemption from the three-inch seismic gap requirement incorporated by reference into our certified-design regulations for the AP1000.

The NRC Staff docketed SNC's application on February 21, 2020,⁹ and published a notice of an opportunity for a hearing on SNC's license amendment request on March 10, 2020.¹⁰ BREDL requested a hearing on May 11, 2020 and proposed two contentions.¹¹

As part of its technical review of the application, the Staff conducted an audit of underlying licensee-controlled data and calculations not included in the application itself. The audit sought to determine whether SNC had shown that a reduction in the seismic gap between the auxiliary and annex buildings could be safely permitted or if SNC would need to submit additional technical information on the docket to address any apparent discrepancies between its application and the underlying data and calculations.¹² After confirming that the technical evaluation in SNC's application was consistent with SNC's underlying data and calculations and determining that no additional information was required to decide the matter, the Staff approved SNC's amendment request on August 4, 2020.¹³

⁷ *Id.* at 5; Exemption Request at 2-3; *see also* 10 C.F.R. pt. 52, app. D, "Design Certification Rule for the AP1000 Design."

⁸ Application at 6-9.

⁹ Email from Cayetano Santos, NRC, to Brian Whitley, SNC, "Acceptance Review of Southern Nuclear Operating Company's Request for License Amendment and Exemption: Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements (EPID No. L-2020-LLE-0009)" (Feb. 21, 2020), at 2 (ML20052H043) (Docketing Decision).

¹⁰ *See* Vogtle Electric Generating Plant, Unit 3: License amendment application; opportunity to comment, request a hearing, and petition for leave to intervene, 85 Fed. Reg. 13,944 (Mar. 10, 2020).

¹¹ Petition for Leave to Intervene and Request for Hearing by the Blue Ridge Environmental Defense League and its Chapter Concerned Citizens of Shell Bluff Regarding Southern Nuclear Operating Company's Request for a License Amendment and Exemption for Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements, LAR-20-001 (May 11, 2020) (BREDL Petition).

¹² *See* Memorandum from Cayetano Santos, NRC, to Victor Hall, NRC, "Audit Report for Vogtle Electric Generating Plant Unit 3, Request for License Amendment and Exemption: Unit 3 Auxiliary Building Wall 11 Seismic Gap Requirements (LAR 20-001)" (May 26, 2020), Encl. at 1, 3 (ML20141L698) (Audit Report).

¹³ *See* Audit Report at 3; Letter from Cayetano Santos, NRC, to Brian H. Whitley, SNC (Aug. 4, 2020) (ML20132A032 (package)).

Shortly thereafter, the Board found BREDL had standing to intervene but that neither of its proposed contentions were admissible.¹⁴ Accordingly, the Board denied BREDL's hearing request and terminated the adjudicatory proceeding.¹⁵ BREDL appealed the Board's denial of Contention 2.¹⁶

II. DISCUSSION

A. Standard of Review

Our regulations allow a petitioner whose hearing request has been wholly denied to appeal as of right.¹⁷ We generally defer to the Board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion.¹⁸

B. BREDL Contention 2

In proposed Contention 2, BREDL asserted that the foundation of the nuclear island — a concrete basemat upon which the containment, shield building, and auxiliary building are constructed — is settling and may have caused the reduction of the required three-inch seismic gap between the auxiliary and annex buildings.¹⁹ BREDL therefore argued that “other systems and structures must also have become deformed yet have not been evaluated.”²⁰ BREDL called for a halt to the construction of Vogtle Unit 3 until, among other things, “an entirely new licensing review and full analysis of the new stress conditions placed on other components on the site that are no longer level as a result of the disproportionate sinking have been concluded.”²¹

The Board found Contention 2 inadmissible for several reasons. The Board found that Contention 2 raised issues outside the scope of the proceeding.²² The

¹⁴ LBP-20-8, 92 NRC 23, 42-45, 47-52 (2020).

¹⁵ *Id.* at 53.

¹⁶ Blue Ridge Environmental Defense League's Notice of Appeal and Brief in Support of Appeal from the Atomic Safety and Licensing Board Decision Denying Admissibility of Contentions in License Amendment Proceeding (Sept. 4, 2020), at 2-3 (BREDL Appeal).

¹⁷ 10 C.F.R. § 2.311(c).

¹⁸ *See, e.g., Tennessee Valley Authority* (Browns Ferry Nuclear Plant Units 1, 2, and 3), CLI-17-5, 85 NRC 87, 91 (2017); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-16-9, 83 NRC 472, 482 (2016).

¹⁹ *See* BREDL Petition at 13-15.

²⁰ *Id.* at 15.

²¹ *Id.* at 12-13.

²² LBP-20-8, 92 NRC at 50.

Board explained that the purpose of this proceeding was to determine whether the Vogtle Unit 3 combined license should be amended to allow a smaller seismic gap between a limited portion of the auxiliary and annex building walls.²³ Contention 2 raised issues beyond this limited scope because it raised concerns that the nuclear island foundation was sinking or settling.²⁴ The Board observed that SNC had not requested any change to the safety parameters and monitoring programs governing foundation settlement in its amendment request.²⁵ Therefore, the Board found BREDL's claims were inadmissible.²⁶

The Board also found Contention 2 inadmissible because it did not raise a genuine dispute with SNC's application.²⁷ The Board noted that SNC's application included an analysis of foundation settlement and its relationship to the seismic gap between the auxiliary and annex buildings.²⁸ This analysis, which was based on information gathered over the past several years from a site-specific settlement monitoring program described in the Vogtle Unit 3 UFSAR, concluded that differential settlement between the foundations of the auxiliary and annex buildings would have no adverse impact on the gap between them.²⁹ The Board found that BREDL had not disputed SNC's analysis and did not offer support for its claim that settlement was not considered in the design of Vogtle Unit 3.³⁰ The Board found BREDL's assertions insufficient to raise a genuine dispute of material fact with SNC's application and therefore ruled them inadmissible.³¹

Finally, the Board found Contention 2 inadmissible because BREDL did not provide a concise statement of specific facts or expert opinions upon which it would rely.³² Although BREDL included the expert declaration of Arnold Gunderson, the Board found it offered only "bare assertions" that SNC's modeling was insufficient.³³ The Board also found that Mr. Gunderson's declaration did not cite to portions of SNC's application with which he disagreed or to any sources supporting his assertion that the nuclear island foundation may be settling disproportionately.³⁴

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.* at 50-51.

²⁹ *See* Application at 8.

³⁰ LBP-20-8, 92 NRC at 51.

³¹ *Id.*

³² *Id.*

³³ *Id.* at 51-52.

³⁴ *Id.* at 52.

On appeal, BREDL does not challenge any of the Board's reasons for finding Contention 2 inadmissible. Instead, BREDL asserts that SNC's license amendment application was incomplete as submitted because it did not include the underlying technical data and calculations reviewed by the Staff during its audit.³⁵ BREDL argues that under these circumstances, the standard for an admissible contention is lowered and that we should admit Contention 2 for an evidentiary hearing.³⁶ Alternatively, BREDL requests that we dismiss the license amendment application *sua sponte* or grant "leave to BREDL to intervene together with access via discovery to the unavailable documents and anticipatory leave for BREDL to amend its petition following that discovery."³⁷

BREDL's argument that SNC's license amendment application was incomplete is impermissibly raised for the first time on appeal.³⁸ BREDL did not argue before the Board that the application should be rejected as incomplete or assert that SNC was required to include in its application the underlying data and calculations audited by the Staff.³⁹ BREDL stated only that its analysis of the application was "hampered due to the lack of any complete engineering analyses . . . provided for review by SNC" and that BREDL would therefore "reserve the right to modify" its contentions once the Staff made information about its audit public.⁴⁰ The Board acknowledged BREDL's statement as "an apparent reference to the opportunity afforded BREDL under the agency's rules of practice to submit new or amended contentions regarding information not previously available."⁴¹ BREDL's appeal does not assert Board error on this point.⁴² And BREDL was provided the Staff's audit report and had the opportunity to file new or amended contentions based on the report but did not do so.⁴³

BREDL also argues on appeal that the Board erred by finding Contention 2 inadmissible despite finding BREDL is "entitled to access all information relied

³⁵ BREDL Appeal at 6-7.

³⁶ *Id.* (citing *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Units 1 and 2), LBP-81-45, 14 NRC 853 (1981)).

³⁷ *Id.* at 7.

³⁸ See *U.S. Department of Energy* (High-Level Waste Repository), CLI-09-14, 69 NRC 580, 588 (2009) (citing *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-25, 60 NRC 223, 225 (2004)).

³⁹ BREDL Petition at 6.

⁴⁰ *Id.* at 6-7.

⁴¹ See LBP-20-8, 92 NRC at 47 n.48.

⁴² To the extent that BREDL asserts that the Board failed to consider BREDL's claims as a contention of omission, we find no support in either BREDL's petition or its appeal for the proposition that SNC was required to include in its application the underlying data and calculations that the Staff audited in this case. *Cf.* 10 C.F.R. § 2.309(f)(1)(vi) (requiring a contention of omission be supported by reasons for the petitioner's belief that the omitted information is "required by law").

⁴³ See email from Cayetano Santos, NRC, to Lou Zeller, BREDL (May 26, 2020) (ML20149K540).

upon by the NRC Staff in accepting a license amendment request” and agreeing that “BREDL was denied that access.”⁴⁴ To support its claim that the Board found BREDL was incorrectly denied access to information, BREDL’s appeal points to the additional views of Judge Bollwerk. However, Judge Bollwerk’s additional views do not support BREDL’s argument. Rather, Judge Bollwerk observed that “in this instance the access afforded BREDL to SNC documentary material seemingly was in accord with agency regulatory procedures and the Staff’s own review process guidance.”⁴⁵ Specifically, the Staff accepted the application for review on February 21, 2020, based on the content of the application alone, which was available to BREDL for review in framing its contentions.⁴⁶ BREDL does not point to a finding by the Board that BREDL had been denied access to information in the application, and we find no Board error on this basis.

We also deny BREDL’s request that we dismiss *sua sponte* SNC’s application because it did not include underlying data and calculations audited by the Staff. BREDL’s request effectively seeks our review of the Staff’s decision to docket SNC’s application, which is a decision committed to the Staff’s discretion and not typically reviewable in an adjudicatory proceeding.⁴⁷ We disagree with any implication that the Staff’s audit practices in this case interfered with BREDL’s ability to frame meaningful contentions. As we have previously acknowledged, Staff audits are a sound regulatory practice reflected in the Staff’s internal licensing guidance and are routinely used as part of the Staff’s independent technical review.⁴⁸ We therefore see no reason to exercise our inherent supervisory authority to dismiss SNC’s application or grant BREDL’s request for leave to intervene.

III. CONCLUSION

For the reasons given above, we *affirm* the Board’s decision.

⁴⁴ BREDL Appeal at 6.

⁴⁵ LBP-20-8, 92 NRC at 57 (additional views of Judge Bollwerk).

⁴⁶ See Docketing Decision at 2.

⁴⁷ See *Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), CLI-08-15, 68 NRC 1, 3 n.2 (2008).

⁴⁸ See *Exelon Generation Co.* (Early Site Permit for Clinton ESP Site), CLI-07-12, 65 NRC 203, 208 (2007); “Regulatory Audits,” NRR Office Instruction LIC-111, rev. 1 (Oct. 31, 2019) (ML19226A274).

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 22d day of December 2020.

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- Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 285 (1994)
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- Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 301 (1994)
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- Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 301-02 (1994)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 118 (2006)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 129 (2007), review denied, *N.J. Dep't of Env'tl. Prot. v. NRC*, 561 F.3d 132 (3d Cir. 2009)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23, 68 NRC 461, 476 (2008)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23, 68 NRC 461, 476-77 n.64 (2008)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23, 68 NRC 461, 484 (2008)
 Commission views suspension of licensing proceedings to be a drastic action that is not warranted absent immediate threats to public health and safety; CLI-20-17, 92 NRC 524 (2020)
- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23, 68 NRC 461, 484-85 (2008)
 Commission has considered requests to suspend proceedings or hold them in abeyance in the exercise of its inherent supervisory powers over proceedings; CLI-20-17, 92 NRC 524 (2020)

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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC 658, 668-69 (2008)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC 658, 674 (2008)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 262 n.143 (2009)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 263 (2009)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 268-70 (2009)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 269 (2009)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-06-7, 63 NRC 188 (2006)
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- AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-07-17, 66 NRC 327, 340 (2007), *aff'd*, CLI-09-7, 69 NRC 235 (2009)
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- Anderson v. Bessemer City*, 470 U.S. 564, 573-74 (1985)
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- Angiuoni v. Town of Billerica*, 838 F.3d 34, 40 (1st Cir. 2016)
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- Athey v. Farmers Ins. Exch.*, 234 F.3d 357, 362 (8th Cir. 2000)
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- Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 349 (1998)
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- Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 349-50 (1998)
petitioners' view that NRC Staff should not have docketed the application when it planned to seek additional information to complete its safety review is incompatible with the dynamic licensing process followed in Commission licensing proceedings; CLI-20-17, 92 NRC 526 n.37 (2020)
- Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 350 (1998)
Commission considers many applications sufficiently complete for purposes of docketing, and for starting the adjudicatory process, even though NRC Staff subsequently poses questions to applicants regarding those applications; CLI-20-17, 92 NRC 526 (2020)
NRC Staff's review under NEPA is at issue in NRC proceedings because NEPA places legal duties on the NRC, not on license applicants; CLI-20-17, 92 NRC 524 (2020)
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- Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), LBP-98-26, 48 NRC 232, 242 (1998)
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- Bryan v. United States*, 524 U.S. 184, 184 (1998)
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- Burkhart v. Wash. Metro. Transit Auth.*, 112 F.3d 1207, 1212 (D.C. Cir. 1997)
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- Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 914 (2009)
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- Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 914-18 (2009)
fifty-mile proximity presumption applies to proceedings for issuance or renewal of a reactor construction permit/operating license under 10 C.F.R. Part 50 or an early site permit/COL under 10 C.F.R. Part 52; LBP-20-8, 92 NRC 41 (2020)
where an application concerns a nuclear power plant, persons who reside or have frequent contacts within a fifty-mile radius of a plant are presumed to have standing; CLI-20-15, 92 NRC 494 (2020)
- Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915 (2009)
in certain licensing proceedings NRC recognizes a proximity presumption under which petitioner is presumed to have standing to intervene if petitioner lives within, or otherwise has frequent contacts with, the zone of possible harm from the nuclear reactor; CLI-20-16, 92 NRC 515-16 (2020)
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- Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915-16 (2009)
petitioner who lives within approximately 50 miles of a nuclear reactor is presumed to have standing in certain types of proceedings; CLI-20-7, 92 NRC 231 (2020); CLI-20-16, 92 NRC 516 (2020); LBP-20-8, 92 NRC 41 (2020)
- Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 917 (2009)
in construction permit and operating license cases, persons living within the roughly 50-mile radius of the facility face a realistic threat of harm if a release from the facility of radioactive material were to occur; CLI-20-7, 92 NRC 231 n.27 (2020); CLI-20-16, 92 NRC 516 (2020)
- Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), LBP-09-4, 69 NRC 170, 183 (2009)
fifty-mile proximity presumption for construction permit and operating license proceedings rests on a finding that persons living within the roughly 50-mile radius of the facility face a realistic threat of harm if a release from the facility of radioactive material were to occur; CLI-20-16, 92 NRC 516 (2020)
- Calvert Cliffs 3 Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), LBP-12-17, 76 NRC 71, 85 (2012)
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- Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-01-7, 53 NRC 113, 118 (2001)
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- Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-99-25, 50 NRC 25 (1999)
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- Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-01-9, 53 NRC 239, 250 (2001)
Federal Rules of Evidence do not apply directly to NRC proceedings, although boards look to them as guidance; CLI-20-9, 92 NRC 311 (2020)
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- Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-01-9, 53 NRC 239, 251 (2001)
boards should give expert testimony due weight proportionate to their expertise; LBP-20-9, 92 NRC 110 n.347 (2020)
- Carolina Power & Light Co. and North Carolina Eastern Municipal Power Agency* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986)
NUREGs and Regulatory Guides serve merely as guidance and cannot prescribe requirements whereas only statutes, regulations, orders, and license conditions can impose requirements on applicants and licensees; LBP-20-12, 92 NRC 453 (2020)
- Carroll v. United States*, 267 U.S. 132 (1925)
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- Carstens v. NRC*, 742 F.2d 1546, 1557 (D.C. Cir. 1984)
NRC need not demand that nuclear power plants present no risk of harm to satisfy the adequate protection standard; LBP-20-9, 92 NRC 92 (2020)
- Charlissa C. Smith* (Denial of Senior Reactor Operator License), LBP-13-3, 77 NRC 82, 97 & n.76 (2013)
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- Citizens Against Burlington v. Busey*, 938 F.2d 190, 197 (D.C. Cir. 1991)
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- Citizens for Safe Power v. NRC*, 524 F.2d 1291, 1294 n.5 (D.C. Cir. 1975)
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- City of Grapevine v. DOT*, 17 F.3d 1502, 1506 (D.C. Cir. 1994)
NRC may legitimately consider the economic goals of the project's sponsor; CLI-20-14, 92 NRC 486 n.145 (2020)
- Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993)
Commission has long applied contemporaneous judicial concepts of standing to assess whether petitioner has established the requisite interest to intervene; CLI-20-16, 92 NRC 515 (2020)
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- Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 95 (1993)
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- Coakley & Williams Const., Inc. v. Structural Concrete Equip., Inc.*, 973 F.2d 349, 353-54 (4th Cir. 1992)
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- Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 624 (1981)
contention that challenges a license amendment must confine itself to health, safety, or environmental issues fairly raised by the license amendment; LBP-20-7, 92 NRC 12 (2020)
license amendment applicant must satisfy requirements of 10 C.F.R. 50.90 and demonstrate that requested amendment meets all applicable regulatory requirements and acceptance criteria and does not otherwise harm public health and safety or common defense and security; LBP-20-8, 92 NRC 47 (2020)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 188 (1999), *aff'd* LBP-98-27, 48 NRC 271 (1998), *petition for review denied sub nom. Dienethal v. NRC*, 203 F.3d 52 (D.C. Cir. 2000)
intervention petitioner in a license amendment proceeding must assert an injury-in-fact associated with the challenged license amendment, not simply a general objection to the facility; LBP-20-8, 92 NRC 40 (2020)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 189 (1999), *aff'd* LBP-98-27, 48 NRC 271 (1998), *petition for review denied sub nom. Dienethal v. NRC*, 203 F.3d 52 (D.C. Cir. 2000)
in license amendment cases, proximity presumption applies only if the challenged license amendments present an obvious potential for offsite radiological consequences; LBP-20-8, 92 NRC 41 (2020)
inquiry into character of licensee must point to some direct and obvious relationship between the licensing action and the potential character issues; LBP-20-7, 92 NRC 21 n.96 (2020)
intervention petitioner must indicate how the license amendments at issue would increase risk of offsite release of radioactive fission products; LBP-20-8, 92 NRC 40 (2020)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-00-5, 51 NRC 90, 98 (2000)
intervention petitioner has the burden to demonstrate that standing requirements are met; LBP-20-7, 92 NRC 9 (2020)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), LBP-98-27, 48 NRC 271, 276 (1998), *aff'd*, CLI-99-4, 49 NRC at 191-92
Commission has rejected proximity standing for license amendments associated with shutdown and de-fueled reactors; LBP-20-8, 92 NRC 43 (2020)

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- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), LBP-98-27, 48 NRC 271, 277 (1998)
intervention petitioner must establish a plausible nexus between challenged license amendments and petitioner's asserted harm; LBP-20-8, 92 NRC 40 (2020)
- Connecticut Yankee Atomic Power Co.* (Haddam Neck Plant), LBP-01-21, 54 NRC 33 (2001), *petition for review denied*, CLI-01-25, 54 NRC 368 (2001)
purpose of NRC adjudicatory hearings is to consider claims of deficiencies in a license application; CLI-20-17, 92 NRC 527 (2020)
- Consolidated Edison Co. of New York* (Indian Point Units 1 and 2), CLI-01-19, 54 NRC 109, 132-33 (2001)
incorporation by reference of another petitioner's issues by petitioner who has not independently established compliance with admission requirements by submitting at least one admissible issue of its own is not allowed; CLI-20-12, 92 NRC 366 (2020)
petitioners who have admissible contentions may adopt each other's contentions; CLI-20-12, 92 NRC 366 (2020)
to adopt the contentions and supporting information of another intervenor, petitioner must offer at least one admissible contention and establish standing to intervene; CLI-20-12, 92 NRC 407 (2020)
- Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-19, 65 NRC 423, 426 (2007)
Commission has not applied proximity-based standing where the radiological source presented a low potential for radiological consequences or where the facility in question was essentially a passive structure rather than an operating facility; CLI-20-16, 92 NRC 517-18 (2020)
in license transfer proceedings, application of the proximity presumption is determined on a case-by-case basis, considering the potential for offsite radiological consequences; CLI-20-7, 92 NRC 231-32 (2020); CLI-20-16, 92 NRC 516 (2020)
license transfers even for operating nuclear power plants typically involve little if any radiological risk, as there are generally no changes to the physical plant, its operating procedures, or its design basis accident analysis; CLI-20-16, 92 NRC 517 (2020)
petitioner who lives within approximately 50 miles of a nuclear reactor is presumed to have standing in certain types of proceedings; CLI-20-7, 92 NRC 231 (2020); CLI-20-16, 92 NRC 516 (2020)
- Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-21, 65 NRC 519, 523 (2007)
difference in potential risk between a reactor and an independent spent fuel storage installation justified a determination that proximity-based standing was not available in ISFSI direct license transfer proceeding; CLI-20-16, 92 NRC 517-18 n.37 (2020)
- Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 409 (2007)
interests that an organization seeks to protect must be germane to its own purpose, and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-20-7, 92 NRC 231 (2020)
organization seeking representational standing must identify the member by name and demonstrate that the member has authorized the organization to represent him or her and to request a hearing on his or her behalf; CLI-20-7, 92 NRC 231 (2020); CLI-20-16, 92 NRC 515 (2020)
organization seeking representational standing must show that at least one of its members may be affected by the NRC's approval of a licensing action and qualifies for standing in his or her own right; CLI-20-7, 92 NRC 231 (2020); CLI-20-16, 92 NRC 515 (2020)
to establish representational standing, organization must show that interests it seeks to protect are germane to its own purpose, identify at least one member who qualifies for standing in his or her own right, show that it is authorized by that member to request a hearing, and show that neither the claim asserted nor the relief requested requires an individual member's participation in the legal action; LBP-20-7, 92 NRC 10 (2020); CLI-20-16, 92 NRC 515 (2020)
- Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 410 (2007)
fact-specific standing allegations, not conclusory assertions, such as general assertions of proximity, are required to establish the proximity presumption; LBP-20-8, 92 NRC 41 n.28 (2020)
general statements that a member lives in the same zip code and in close proximity to a facility, without more, are insufficient to demonstrate interest; CLI-20-7, 92 NRC 233 n.37 (2020)

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- organization relying on representational standing must provide concrete indication that the member wants the organization to represent his or her interests in a proceeding; CLI-20-7, 92 NRC 232 n.31 (2020)
- petitioner must specify contacts with the affected area in its intervention petition; LBP-20-8, 92 NRC 41 (2020)
- Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 411 (2007)
- organization seeking to intervene in its own right must satisfy the same standing requirements as an individual seeking to intervene; CLI-20-7, 92 NRC 231 (2020)
- Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 411-12 (2007)
- NRC does not recognize standing for an organization that seeks to raise environmental or safety matters that are of general concern but do not directly affect the organization's own interests; CLI-20-7, 92 NRC 231 (2020)
- Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 345 (1973)
- once intervenor has introduced sufficient evidence to establish a prima facie case, the burden shifts to applicant who, as part of his overall burden of proof, must provide a sufficient rebuttal to satisfy the board that it should reject the contention; LBP-20-9, 92 NRC 94 n.191 (2020)
- ultimate burden of proof on whether a permit or license should be issued is on applicant, but intervenor has the burden of going forward with evidence to buttress its contention; LBP-20-9, 92 NRC 94 n.191 (2020)
- Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-283, 2 NRC 11, 17 (1975)
- applicant carries the burden of proof on the issue whether there is reasonable assurance that operation of plant, as modified by the license amendment request, will not endanger the health and safety of the public; LBP-20-9, 92 NRC 95 (2020)
- Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-674, 15 NRC 1101, 1103 (1982)
- because licensing board lacks jurisdiction to suspend previously issued construction permit, intervenor seeking such relief must file 10 C.F.R. 2.206 petition; LBP-20-8, 92 NRC 48 n.50 (2020)
- Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974)
- petitioner who establishes standing in one case may employ that standing determination in another proceeding that is merely another round in a continuing controversy; LBP-20-8, 92 NRC 42 (2020)
- Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), CLI-09-9, 69 NRC 331, 338 n.34 (2009)
- standing and contention admissibility are separate issues with distinct requirements; CLI-20-15, 92 NRC 495-96 (2020)
- Crow Butte Resources, Inc.* (License Renewal for the In Situ Leach Facility, Crawford, Nebraska), CLI-19-5, 89 NRC 329, 336 & n.40 (2019)
- unless an appeal demonstrates an error of law or abuse of discretion, Commission generally defers to the board on contention admissibility rulings; CLI-20-11, 92 NRC 341 (2020)
- Crow Butte Resources, Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 13-14 (2014)
- Commission generally defers to the board on matters of contention admissibility and standing unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-14, 92 NRC 467 (2020)
- Crow Butte Resources, Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 18 (2014)
- organization seeking to intervene may demonstrate standing based on an asserted harm to interest of one or more of its individual members or to its own organizational interest; CLI-20-7, 92 NRC 230-31 (2020)
- to address the injury requirement, an organization must show that the licensing action would constitute a threat to its organizational interests; CLI-20-7, 92 NRC 231 (2020)
- Crow Butte Resources, Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 26 (2014)
- Commission defers to board's ruling on contention admissibility in the absence of clear error, mistake of law, or abuse of discretion; CLI-20-15, 92 NRC 494 (2020)
- Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 546 (2009)
- participant may not raise new arguments on appeal; CLI-20-14, 92 NRC 474 n.62 (2020)
- Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 552 n.79 (2009)
- licensing boards have authority to reformulate contentions; LBP-20-9, 92 NRC 74 n.4 (2020)

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- Curators of the University of Missouri*, CLI-95-8, 41 NRC 386, 395 (1995)
Commission does not encourage defective applications, but also does not take intervenors' absolutist position that an application, however minimally flawed, must be rejected altogether, and may not be modified or improved as NRC review goes forward; CLI-20-17, 92 NRC 526 n.37 (2020)
- Curators of the University of Missouri*, CLI-95-8, 41 NRC 386, 395 (1995)
petitioners' view that NRC Staff should not have docketed the application when it planned to seek additional information to complete its safety review is incompatible with the dynamic licensing process followed in Commission licensing proceedings; CLI-20-17, 92 NRC 526 (2020)
- Curators of the University of Missouri*, CLI-95-8, 41 NRC 386, 395-96 (1995)
NRC Staff docketing decisions, which presumably include its conclusions about how much applicant information Staff requires to reach that determination, is one for which the Staff is afforded considerable discretion; LBP-20-8, 92 NRC 57 n.10 (2020)
- Curators of the University of Missouri*, CLI-95-8, 41 NRC 386, 396 (1995)
issue for decision is not whether NRC Staff performed well, but whether the license application raises health and safety concerns; CLI-20-17, 92 NRC 525 (2020)
- Curators of the University of Missouri* (TRUMP-S Project), CLI-95-1, 41 NRC 71, 98 (1995)
NUREGs and Regulatory Guides serve merely as guidance and cannot prescribe requirements whereas only statutes, regulations, orders, and license conditions can impose requirements on applicants and licensees; LBP-20-12, 92 NRC 453 (2020)
- David Geisen*, CLI-10-23, 72 NRC 210, 224-25 (2010)
petition claiming that the board's findings of fact are clearly erroneous requires the petitioner to show that the board's findings are not even plausible in light of the record viewed in its entirety; CLI-20-9, 92 NRC 303 (2020)
- David Geisen*, CLI-10-23, 72 NRC 210, 225 (2010)
Commission gives the highest deference to findings of fact that turn on witness credibility; CLI-20-9, 92 NRC 303 (2020)
Commission is highly deferential to board conclusions, particularly where much of the evidence is subject to interpretation; CLI-20-8, 92 NRC 257 (2020); CLI-20-9, 92 NRC 303 (2020)
- David Geisen*, LBP-09-24, 70 NRC 676, 701 (2009)
not only must the element of actual knowledge be present, but a 10 C.F.R. 50.5 violation requires a showing that it was deliberate; LBP-20-11, 92 NRC 417 (2020)
- Dep't of Transp. v. Public Citizen*, 541 U.S. 752, 767 (2004)
rule of reason should govern the decision to prepare an environmental impact statement, where the EIS would serve no purpose because the agency was required by law to undertake the action in question; CLI-20-9, 92 NRC 310 (2020)
- Detroit Edison Co.* (Fermi Power Plant Independent Spent Fuel Storage Installation), CLI-10-3, 71 NRC 49, 51 n.7 (2010)
arguments raised for the first time on appeal will not be considered; CLI-20-11, 92 NRC 341 (2020)
- Dist. of Columbia v. Wesby*, 138 S. Ct. 577, 586-88 (2018)
probable cause of a specific intent crime requires evidence of intent; LBP-20-11, 92 NRC 417 n.47 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 215-16 (2003)
assertions of standing are construed in favor of petitioners, but petitioner has the burden of establishing each element of contention admissibility; CLI-20-15, 92 NRC 495-96 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-18, 58 NRC 433, 434 (2003)
reconsideration petitions must establish an error in a decision, based upon an elaboration or refinement of an argument already made, an overlooked controlling decision or principle of law, or a factual clarification; LBP-20-12, 92 NRC 441-42 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-18, 58 NRC 433, 435 (2003)
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- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), LBP-03-12, 58 NRC 75, 93 (2003)
obvious potential for offsite consequences is not in itself sufficient to support an admissible contention; LBP-20-8, 92 NRC 45 n.43 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-08-17, 68 NRC 231, 234 (2008)
Commission gives substantial deference to board conclusions on standing and contention admissibility unless the appeal points to an error of law or abuse of discretion; CLI-20-8, 92 NRC 257 n.12 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-09-5, 69 NRC 115, 119 (2009)
Commission accords the board's judgment at the pleading stage substantial deference; CLI-20-8, 92 NRC 257 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-09-5, 69 NRC 115, 124 (2009)
contention that independent spent fuel storage installation application fails to adequately describe control of subsurface mineral rights and oil and gas and mineral extraction operations is inadmissible; LBP-20-10, 92 NRC 249 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), LBP-08-9, 67 NRC 421, 444 & n.138 (2008)
NRC Staff docketing decisions, which presumably include its conclusions about how much applicant information Staff requires to reach that determination, is one for which the Staff is afforded considerable discretion; LBP-20-8, 92 NRC 57 n.10 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001)
contention admissibility standards are strict by design; LBP-20-7, 92 NRC 13 (2020); LBP-20-10, 92 NRC 249 (2020)
intervenor, pro se or otherwise, are expected to provide credible support for the contentions they proffer; LBP-20-8, 92 NRC 54 (2020)
requirements for standing are not strict by design, in contrast to NRC's contention admissibility requirements; LBP-20-7, 92 NRC 11 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 365 (2001)
claims of deficient licensee character or integrity must have some direct and obvious relationship between the character issues and the licensing action in dispute; CLI-20-12, 92 NRC 395 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 365-66 (2001)
inquiry into character of licensee must point to some direct and obvious relationship between the licensing action and the potential character issues; LBP-20-7, 92 NRC 21 n.96 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 366 (2001)
to avoid open-ended inquiries into matters ultimately unrelated to NRC-licensed activities, NRC has limited contentions raising claims of poor or improper management or character to claims that relate directly to the proposed licensing action; CLI-20-12, 92 NRC 396 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-02-1, 55 NRC 1, 2 (2002)
reconsideration petitions must establish an error in a decision, based upon an elaboration or refinement of an argument already made, an overlooked controlling decision or principle of law, or a factual clarification; LBP-20-12, 92 NRC 441-42 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-12, 59 NRC 237, 241 (2004)
applications are neither accepted for full review by NRC Staff nor automatically noticed for a possible hearing when it is submitted; CLI-20-17, 92 NRC 525 (2020)

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- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-12, 59 NRC 237, 241-42 (2004)
application is only noticed for a possible hearing once it has been accepted, or docketed, by NRC Staff; CLI-20-17, 92 NRC 525 (2020)
in conducting the preliminary acceptance review, NRC Staff reviews the application to ensure it contains information and analyses required in a proper application to allow Staff's full review of the proposed licensing action; CLI-20-17, 92 NRC 525 (2020)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 NRC 631, 640 (2004)
arguments may not be raised for the first time on appeal; CLI-20-11, 92 NRC 344 (2020)
- Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 222 n.21 (2007)
although NRC is not bound by CEQ regulations, NRC gives them substantial deference in applying NEPA; CLI-20-9, 92 NRC 320 (2020)
- Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 235-36 (2007)
claim that NRC did not fully disclose potential radiological impacts of a terrorist attack in its supplemental environmental impact statement is considered; CLI-20-9, 92 NRC 321-22 & n.57 (2020)
Commission discussed extent to which missing information constitutes a fatal flaw to a NEPA analysis for an early site permit; CLI-20-8, 92 NRC 292 n.55 (2020)
- Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 235-36 & n.115 (2007)
NRC, as an independent regulatory agency, is not bound by Council on Environmental Quality NEPA regulations unless the Commission chooses to follow them; CLI-20-11, 92 NRC 345-46 n.70 (2020)
- DTE Electric Co.* (Fermi Nuclear Power Plant, Unit 3), CLI-15-4, 81 NRC 221, 231 n.49 (2015)
NRC need not demand that nuclear power plants present no risk of harm to satisfy the adequate protection standard; LBP-20-9, 92 NRC 92 (2020)
- Dubois v. USDA*, 102 F.3d 1273, 1277-79, 1287, 1288-89 (1st Cir. 1996)
existence of reasonable but unexamined alternatives renders an environmental impact statement inadequate; CLI-20-14, 92 NRC 485-86 & n.141 (2020)
- Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-6, 59 NRC 62, 74 (2004)
NRC Staff reviews, which frequently proceed in parallel to adjudicatory proceedings, fall under the direction of Staff management and the Commission itself, not the licensing boards; CLI-20-8, 92 NRC 285 n.18 (2020)
- Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 27 (2004)
licensing board normally has considerable discretion in making evidentiary rulings; LBP-20-9, 92 NRC 114 (2020)
presiding officers may issue scheduling orders, delineating rules applicable to the proceeding at hand; LBP-20-9, 92 NRC 116 (2020)
- Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 29 (2004)
gaps in an expert's knowledge go to weight of the testimony; LBP-20-9, 92 NRC 95 (2020)
- Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 31 (2004)
in evaluating disputed issues, board must assign appropriate weight to testimony of each expert witness according to witness's level of expertise; LBP-20-9, 92 NRC 109-10 (2020)
unwarranted and inflexible barriers, such as too great an insistence on specific knowledge in selected aspects of a subject, should not disqualify an expert witness who possesses a strong general background and specialized knowledge in the relevant field; LBP-20-9, 92 NRC 95-96 & n.201 (2020)
- Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), LBP-04-12, 59 NRC 388, 391 (2004)
information offered in evidence, even if not specifically stated in the original contention and bases, may be relevant if it falls within the envelope, reach, or focus of the contention when read with the original bases offered for it; LBP-20-9, 92 NRC 130, 133 (2020)

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- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 379, 383 (2002)
reach of a contention necessarily hinges on its terms coupled with its stated bases; LBP-20-9, 92 NRC 129 (2020)
- Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 386 (2002)
intervenor may not freely change the focus of an admitted contention at will to add a host of new issues and objections that could have been raised at the outset; LBP-20-9, 92 NRC 130 (2020)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999)
contention admissibility requirements are strict by design; CLI-20-12, 92 NRC 365 (2020)
contention admissibility standards were strengthened to afford evidentiary hearings only to those who proffer at least some minimal factual and legal foundation in support of their contentions; LBP-20-7, 92 NRC 13 (2020); LBP-20-10, 92 NRC 249 (2020)
stricter contention admissibility standards result from Commission's conscious effort to raise the threshold bar for an admissible contention; LBP-20-7, 92 NRC 13 (2020); LBP-20-10, 92 NRC 249 (2020)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 335 (1999)
contention admissibility requirements are not intended to be a fortress to deny intervention; LBP-20-7, 92 NRC 13 (2020); LBP-20-10, 92 NRC 249 (2020)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 336 (1999)
petitioners must do more than rest on the mere existence of requests for additional information as a basis for their contention; LBP-20-10, 92 NRC 253 (2020)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 336-37 (1999)
merely identifying a Staff request for additional information does not identify a genuine material dispute with an application; CLI-20-12, 92 NRC 393 n.221 (2020)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 338 (1999)
petitioners have an ironclad obligation to examine relevant application documents to uncover information that might prompt a contention; LBP-20-10, 92 NRC 242 (2020)
petitioner is expected to evaluate all available information and other publicly available documents and file contentions within the initial 60-day time frame to intervene; CLI-20-17, 92 NRC 527 (2020)
- Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1050 (1983)
petitioner is expected to evaluate all available information at the earliest possible time to identify the potential basis for contentions and preserve their admissibility; LBP-20-10, 92 NRC 243 (2020)
- Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), LBP-82-116, 16 NRC 1937, 1946 (1982)
information that a license amendment request must provide is described in 10 C.F.R. 50.57(a)(3) and (a)(6); LBP-20-9, 92 NRC 91 (2020)
- Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-669, 15 NRC 453, 475 (1982)
expert may be qualified to testify based on knowledge, skill, experience, training, or education; LBP-20-9, 92 NRC 110-11 (2020)
- Ecology Action v. AEC*, 492 F.2d 998, 1001-02 (2d Cir. 1974)
adjudicatory record is allowed to augment existing environmental analyses in considering whether NRC Staff should have to issue a supplement to the final supplemental environmental impact statement; CLI-20-9, 92 NRC 306 (2020)
- EnergySolutions, LLC* (Radioactive Waste Import/Export Licenses), CLI-11-3, 73 NRC 613, 622 (2011)
concern that reactors are inherently dangerous presents an undefined potential for radiological harm from the ultimate construction and operation of the reactors; CLI-20-16, 92 NRC 518 (2020)
- EnergySolutions, LLC* (Radioactive Waste Import/Export Licenses), CLI-11-3, 73 NRC 613, 622 & n.46 (2011)
Commission has not applied proximity-based standing where the radiological source presented a low potential for radiological consequences or where the facility in question was essentially a passive structure rather than an operating facility; CLI-20-16, 92 NRC 517-18 n.37 (2020)

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- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 309 (2010)
reach of a contention necessarily hinges on its terms coupled with its stated bases; LBP-20-9, 92 NRC 129 (2020)
when intervenor's testimony or exhibits are alleged to fall outside the scope of an admitted contention, licensing boards must decide whether the proffered evidence is within the reasonably inferred bounds of the admitted contention; LBP-20-9, 92 NRC 130 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 310 (2010)
physical and chemical properties of concrete are fairly encompassed by the description in the admissible contentions; LBP-20-9, 92 NRC 129 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-14, 71 NRC 449, 465-66 (2010)
NRC undertakes a case-by-case approach in making a reasonable assurance determination, considering all relevant facts and circumstances to reach a sound technical judgment that verifies applicant's compliance with all applicable regulations; LBP-20-9, 92 NRC 92 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-22, 72 NRC 202, 208 (2010)
NEPA is governed by a rule of reason that requires an agency to include only in NEPA documentation information that is reasonably available; CLI-20-8, 92 NRC 282 n.4 (2020)
some information needed for a NEPA review may prove to be unavailable, unreliable, inapplicable, or simply not adaptable and NRC Staff has been directed to provide a reasonable analysis of available information in such cases; CLI-20-8, 92 NRC 282 n.4, 288 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-3, 75 NRC 132, 146 n.87 (2012)
arguments raised for the first time on appeal will not be considered; CLI-20-11, 92 NRC 341 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-10, 75 NRC 479, 482-83 (2012)
petitioners must carefully review the application at issue and raise all their distinct challenges at the outset, avoiding piecemeal supplemental contentions unless they could not have been raised earlier; CLI-20-8, 92 NRC 259 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-10, 75 NRC 479, 493 n.70 (2012)
dispositive issue is not whether there are differences between applicant's environmental report and the draft EIS, but whether petitioner's amended contention is based on new facts not previously available; LBP-20-10, 92 NRC 245 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-10, 75 NRC 479, 499 (2012)
movant to reopen a record must submit evidence sufficiently compelling to suggest a likelihood of materially affecting the ultimate results in the proceeding; LBP-20-12, 92 NRC 441 (2020)
to meet the reopening standard it is insufficient merely to point to disputed facts; LBP-20-12, 92 NRC 440 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-12-21, 76 NRC 491, 500-01 (2012)
exceptionally grave issue exception warranting discretionary reopening of a record is a narrow one, to be granted rarely and only in truly exceptional circumstances; LBP-20-10, 92 NRC 247 (2020)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-08-22, 68 NRC 590, 593 (2008), *petition for review denied*, CLI-14-10, 71 NRC 449, 477 (2010)
adequacy of licensee's aging management program for buried pipes and tanks was the subject of an evidentiary hearing at the time the Pilgrim operating license was renewed; CLI-20-12, 92 NRC 380 n.143 (2020)
- Entergy Nuclear Operations, Inc.* (Indian Point, Unit 2), CLI-16-5, 83 NRC 131, 136 (2016)
failure to satisfy even one of the six contention pleading requirements requires rejection of a contention; LBP-20-7, 92 NRC 13 (2020); LBP-20-10, 92 NRC 249 (2020)

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- Entergy Nuclear Operations, Inc.* (Indian Point, Unit 2), CLI-16-5, 83 NRC 131, 137 n.33 (2016)
supporting information for a contention should be submitted when the contention is filed; CLI-20-11, 92 NRC 341 (2020)
- Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), CLI-11-14, 74 NRC 801, 813 (2011)
NEPA is a procedural statute; CLI-20-9, 92 NRC 323 (2020)
- Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), CLI-15-6, 81 NRC 340, 354-55 (2015)
unless an appeal demonstrates an error of law or abuse of discretion, Commission generally defers to the board on contention admissibility rulings; CLI-20-11, 92 NRC 341 (2020)
- Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), LBP-08-13, 68 NRC 43, 65-66 (2008)
for petitioner to adopt the contention of another petitioner, it must first demonstrate that it has standing and submit its own admissible contention; CLI-20-12, 92 NRC 366 (2020)
- Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), LBP-13-13, 78 NRC 246, 301 (2013)
board may reject an expert's assertions if they are based on no more than a gut feeling and the expert acknowledges that he had not analyzed relevant documentation; LBP-20-9, 92 NRC 96 (2020)
- Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-22, 82 NRC 310, 316 (2015)
license amendment request must provide sufficient documentation and analysis to show that licensee has complied with the relevant requirements; LBP-20-9, 92 NRC 92 (2020)
NRC need not demand that nuclear power plants present no risk of harm to satisfy the adequate protection standard; LBP-20-9, 92 NRC 92 (2020)
- Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-22, 82 NRC 310, 316 n.44 (2015)
license amendment must provide reasonable assurance of adequate protection of public health and safety; LBP-20-9, 92 NRC 74 n.9 (2020)
- Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-22, 82 NRC 310, 317-18 (2015)
alternative methods can demonstrate reasonable assurance that structures, systems, and components are capable of fulfilling their intended functions; LBP-20-9, 92 NRC 182 n.912 (2020)
- Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-23, 82 NRC 321, 329 (2015)
it is petitioners' responsibility, not the board's, to formulate contentions and to provide the necessary information to satisfy the basis requirement for admission; LBP-20-8, 92 NRC 46 (2020)
- Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-19-11, 90 NRC 258, 263 & n.14 (2019)
license transfers present a low potential for offsite radiological consequences; CLI-20-16, 92 NRC 517 n.24 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 258 (2008)
petitioner must identify an interest in the proceeding by claiming an actual or threatened injury that is fairly traceable to the challenged action, is likely to be redressed by a favorable decision, and arguably falls within the zone of interests protected by the AEA; CLI-20-7, 92 NRC 230 (2020); CLI-20-16, 92 NRC 515, 519 (2020)
petitioner must specify the facts pertaining to its interest; CLI-20-7, 92 NRC 230 n.16 (2020); CLI-20-16, 92 NRC 515 n.17 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 258-59 (2008)
interests that an organization seeks to protect must be germane to its own purpose, and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-20-7, 92 NRC 231 (2020)
organization seeking representational standing must identify the member by name and demonstrate that the member has authorized the organization to represent him or her and to request a hearing on his or her behalf; CLI-20-7, 92 NRC 231 (2020)
organization seeking representational standing must show that at least one of its members may be affected by NRC's approval of a licensing action and qualifies for standing in his or her own right; CLI-20-7, 92 NRC 231 (2020)
standing discussion does not identify a member by name or provide an affidavit or other documentation showing that a member has authorized the organization to represent his or her interests in the matter; CLI-20-7, 92 NRC 232 n.31 (2020); CLI-20-16, 92 NRC 515 (2020)

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- to demonstrate representational standing, organization must show that at least one of its members may be affected by NRC's approval of a licensing action; CLI-20-16, 92 NRC 515 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 259 (2008)
- general statements do not demonstrate that one of an organization's members qualifies for standing in his or her own right; CLI-20-7, 92 NRC 232 (2020)
- organization seeking representational standing must show that the interests it seeks to protect are germane to its own purpose; CLI-20-16, 92 NRC 515 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 260 (2008)
- indirect license transfers involving no change in operator, direct owner, and physical plant create no obvious source of actual or potential harm; CLI-20-7, 92 NRC 233 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 260-61 (2008)
- in license transfer involving direct transfer of a non-operating interest, but no change in operator or physical plant, procedures, management, or personnel, risks are considered to be de minimis; CLI-20-7, 92 NRC 233 n.36 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 261-62 (2008)
- it is not acceptable in NRC practice for a petitioner to claim standing based on vague assertions, and when that fails, to attempt to repair the defective pleading with fresh details at a later juncture; CLI-20-7, 92 NRC 232 n.31 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 268-69 (2008)
- if petitioner cannot show an obvious potential for offsite consequences from a proposed action, petitioner must explain how the action will harm its interests by claiming an injury under traditional standing requirements; CLI-20-7, 92 NRC 233 (2020)
- if petitioner fails to show an obvious potential for harm from a proposed action, the inquiry reverts to a traditional standing analysis, in which the petitioner must explain how the action will harm his interests by demonstrating injury, traceability, and redressability; CLI-20-7, 92 NRC 232 (2020); CLI-20-16, 92 NRC 516 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 269 (2008)
- Commission has never granted proximity-based standing to a petitioner in an indirect license transfer adjudication; CLI-20-16, 92 NRC 517 (2020)
- in license transfer involving direct or indirect transfer of a non-operating interest, but no change in operator or physical plant, procedures, management, or personnel, proximity alone does not demonstrate how the license transfer would cause harm, and thus does not show standing; CLI-20-7, 92 NRC 233 (2020)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 269-70 (2008)
- NRC does not recognize standing for an organization that seeks to raise environmental or safety matters that are of general concern but do not directly affect the organization's own interests; CLI-20-7, 92 NRC 231 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-06-8, 63 NRC 235, 238 (2006)
- board has authority to revoke or place conditions on a license amendment if it determines that NRC Staff should not have granted it; LBP-20-9, 92 NRC 84 (2020)
- board has identified significant uncertainties that preclude a reasonable assurance finding absent conditions imposed by the board; LBP-20-9, 92 NRC 170 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC 1, 11 (2010)
- because applicant claimed that the board erred legally in determining that a new field investigation is the only way to meet the reasonable and good faith effort standard, a de novo standard of review is consistent with NRC precedents; CLI-20-8, 92 NRC 287 n.32 (2020)

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- Commission reviews a board's legal rulings de novo, but only takes review where petitioner shows that the board's rulings on a substantial and important question of law is without precedent or contrary to precedent; CLI-20-9, 92 NRC 303 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC 1, 47 (2010)
- Commission defers to the board in its procedural case management decisions; CLI-20-9, 92 NRC 303 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC 1, 47-48 (2010)
- in NRC proceedings, board has an inquisitorial role in the development of a complete record; CLI-20-9, 92 NRC 312 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-11-2, 73 NRC 333, 337-38 (2011)
- deliberately heavy burden is imposed on an intervenor who seeks to supplement the evidentiary record after it has been closed, even with respect to an existing contention; LBP-20-12, 92 NRC 440 n.28 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-11-2, 73 NRC 333, 338 (2011)
- deliberately heavy burden is imposed on a movant to meet the high standard of reopening the record; LBP-20-12, 92 NRC 440 (2020)
- reopening the record is an extraordinary action; LBP-20-12, 92 NRC 440 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-11-2, 73 NRC 333, 340 (2011)
- if information offered with a motion to reopen had been apparent from the outset of the proceeding or is not an unexpected revelation, the motion must be denied as untimely; LBP-20-12, 92 NRC 440 (2020)
- proposed license condition revisions rely entirely on information that has been apparent from the outset of the proceeding; LBP-20-12, 92 NRC 445 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-11-2, 73 NRC 333, 344 (2011)
- documents merely summarizing earlier documents or compiling preexisting, publicly available information into a single source do not render new the summarized or compiled information; LBP-20-12, 92 NRC 440-41 (2020)
- licensing board decision based on information previously available to a petitioner in the evidentiary record is not considered new information sufficient to satisfy the timeliness requirement; LBP-20-12, 92 NRC 442-43 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-16-12, 83 NRC 542, 549-54 (2016)
- emergency planning exemption request that would be implemented by a requested license amendment to reflect reactor facility's permanently shut down and defueled status is within the scope of the proceeding; LBP-20-7, 92 NRC 16 n.75 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-16-12, 83 NRC 542, 555 (2016)
- examining NRC Staff's rationale for docketing an application is not within the scope of NRC adjudicatory proceedings; CLI-20-17, 92 NRC 525 & n.31 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-16-17, 84 NRC 99, 123 (2016)
- decommissioning generic environmental impact statement reflects NRC's determination that decommissioning is not itself a major federal action and serves to establish an envelope of environmental impacts associated with decommissioning activities; CLI-20-12, 92 NRC 384 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-16-17, 84 NRC 99, 123-24 (2016)
- if licensee contemplates performing a decommissioning activity with impacts not enveloped by previous environmental analyses, licensee must submit a license amendment request, together with a supplemental environmental report evaluating the additional impacts; CLI-20-12, 92 NRC 385 (2020)

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- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 553-54 (2004)
 representational standing was granted on a power uprate application to an organization with members who lived within 15 miles of the plant; LBP-20-8, 92 NRC 44 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-10-19, 72 NRC 529, 546 (2010)
 proposed license condition revisions rely entirely on information that has been apparent from the outset of the proceeding; LBP-20-12, 92 NRC 445 (2020)
 timeliness analysis of motions to reopen questions when should these issues have been identified and asserted and are they based on new information or on information that has been available for a significant time period; LBP-20-12, 92 NRC 440 n.33 (2020)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-10-19, 72 NRC 529, 546, 547 (2010)
 if information offered with a motion to reopen had been apparent from the outset of the proceeding or is not an unexpected revelation, the motion must be denied as untimely; LBP-20-12, 92 NRC 440 (2020)
- Exelon Generation Co.* (Dresden Nuclear Power Station, Units 2 and 3), LBP-14-4, 79 NRC 319, 330 (2014)
 allowing new claims in a reply would defeat the contention-filing deadline and unfairly deprive other participants of an opportunity to rebut the new claims; LBP-20-10, 92 NRC 247 n.86 (2020)
- Exelon Generation Co.* (Early Site Permit for Clinton ESP Site), CLI-07-12, 65 NRC 203, 207-08 (2007)
 NRC's current regulatory approach of relying on licensees to submit complete and accurate information and of auditing that information as appropriate is entirely consistent with sound regulatory practice; CLI-20-17, 92 NRC 526 n.38 (2020)
- Exelon Generation Co.* (Early Site Permit for Clinton ESP Site), CLI-07-12, 65 NRC 203, 208 (2007)
 NRC Staff audits are a sound regulatory practice reflected in the Staff's internal licensing guidance and are routinely used as part of the Staff's independent technical review; CLI-20-18, 92 NRC 536 (2020)
- Exelon Generation Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-19-6, 89 NRC 465, 475-76 (2019)
 NRC oversight of financial ability to decommission a facility and to manage the spent fuel on the site does not end after the financial qualification review; CLI-20-12, 92 NRC 360 (2020)
- Exelon Generation Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-19-6, 89 NRC 465, 477 (2019)
 claims of deficient licensee character or integrity must have some direct and obvious relationship between the character issues and the licensing action in dispute; CLI-20-12, 92 NRC 395 (2020)
 claims of prior violations or events involving a company must be directly germane to the challenged licensing action; CLI-20-12, 92 NRC 395 (2020)
- Exelon Generation Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-19-6, 89 NRC 465, 477 & n.62 (2019)
 inquiry into character of licensee must point to some direct and obvious relationship between the licensing action and the potential character issues; LBP-20-7, 92 NRC 21 n.96 (2020)
- Exelon Generation Co., LLC* (Three Mile Island Nuclear Station, Units 1 and 2), LBP-20-2, 91 NRC 10, 30, 32 (2020)
 proximity standing has been rejected for license amendments associated with shutdown and de-fueled reactors; LBP-20-8, 92 NRC 43 (2020)
- Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 579 (2005)
 petitioner must have some direct interest in the outcome of the proceeding to have standing; LBP-20-8, 92 NRC 39 (2020)
- Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 579-83 (2005)
 petitioner may seek to establish standing using either traditional judicial standing precepts or the proximity presumption; LBP-20-8, 92 NRC 40 (2020)

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- Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580 (2005)
in cases involving license transfers or non-power reactors, proximity-based standing is determined on a case-by-case basis, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue; CLI-20-16, 92 NRC 516 (2020)
organization's interest in license transferee's corporate structure, in and of itself, does not demonstrate injury that demonstrates standing; CLI-20-7, 92 NRC 234 (2020)
- Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 580-81 (2005)
in license transfer proceedings, application of proximity presumption is determined on a case-by-case basis, considering the potential for offsite radiological consequences; CLI-20-7, 92 NRC 231-32 (2020)
in proceedings other than reactor construction permit/operating license issuance or renewal or early site permit/COL, proximity presumption is determined on a case-by-case basis considering petitioner's location and nature of proposed action and significance of the radioactive source; LBP-20-8, 92 NRC 41 (2020)
to obtain presumptive standing based on proximity, petitioners must show that the instant license transfer proceeding presents an obvious potential for offsite radiological consequences; CLI-20-16, 92 NRC 517 (2020)
- Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 581 (2005)
direct transfer of a 50% non-operating interest did not warrant proximity standing; CLI-20-7, 92 NRC 233 n.37 (2020)
fact-specific standing allegations, not conclusory assertions, such as general assertions of proximity, are required to establish the proximity presumption; LBP-20-8, 92 NRC 41 n.28 (2020)
if petitioner fails to show an obvious potential for harm from a proposed action, the inquiry reverts to a traditional standing analysis, in which the petitioner must explain how the action will harm his interests by demonstrating injury, traceability, and redressability; CLI-20-7, 92 NRC 232 (2020); CLI-20-16, 92 NRC 516 (2020)
in license amendment cases, the burden falls on petitioner to demonstrate the plausibility of offsite consequences; LBP-20-7, 92 NRC 11 (2020)
potential for offsite radiological consequences depends on kind of action at issue when considered in light of radioactive sources at the plant; LBP-20-8, 92 NRC 41 (2020)
proximity standing for license transfers has been rejected; LBP-20-8, 92 NRC 43 (2020)
- Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 581-82 (2005)
in license transfer involving direct transfer of a non-operating interest, but no change in operator or physical plant, procedures, management, or personnel, risks are considered to be minimis; CLI-20-7, 92 NRC 233 n.36 (2020)
- Exelon Generation Co., LLC, and PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-05-26, 62 NRC 577, 582 (2005)
proximity standing is limited when there are no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel; LBP-20-8, 92 NRC 43 (2020)
- Faigin v. Kelly*, 184 F.3d 67, 85 (1st Cir. 1999)
decision to allow or foreclose rebuttal evidence rests squarely within the informed discretion of the district court; LBP-20-9, 92 NRC 115 n.385 (2020)
- Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)
although petitioner need not prove its contention at the admission stage, mere notice pleading is insufficient; LBP-20-7, 92 NRC 13 (2020); LBP-20-10, 92 NRC 249 (2020)
neither mere speculation nor bare conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow admission of a contention; LBP-20-8, 92 NRC 51 (2020)
- FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), CLI-12-8, 75 NRC 393, 397 (2012)
Commission generally defers to the board contention admissibility rulings unless it finds either an error of law or abuse of discretion; CLI-20-8, 92 NRC 257 (2020)

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- FirstEnergy Nuclear Operating Co.* (Davis-Besse Nuclear Power Station, Unit 1), LBP-11-13, 73 NRC 534, 543-45 (2011), *rev'd in part on other grounds*, CLI-12-8, 75 NRC 393 (2012)
although pro se petitioners may not ignore NRC rules, they are allowed some degree of leeway;
LBP-20-7, 92 NRC 11 (2020)
- FirstEnergy Nuclear Operating Co. and FirstEnergy Nuclear Generation, LLC* (Beaver Valley Power Station, Units 1 and 2), CLI-20-5, 91 NRC 214, 219 (2020)
Commission has long applied contemporaneous judicial concepts of standing to assess whether petitioner has established the requisite interest to intervene; CLI-20-16, 92 NRC 514-15 n.15 (2020)
- FirstEnergy Nuclear Operating Co. and FirstEnergy Nuclear Generation, LLC* (Beaver Valley Power Station, Units 1 and 2), CLI-20-5, 91 NRC 214, 220 (2020)
organization seeking to intervene may obtain standing as a representative of one or more of its individual members; CLI-20-16, 92 NRC 515 (2020)
to demonstrate representational standing, organization must show that at least one of its members may be affected by NRC's approval of a licensing action; CLI-20-16, 92 NRC 515 (2020)
- Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 1), LBP-88-10A, 27 NRC 452, 455, *aff'd*, ALAB-893, 27 NRC 627 (1988)
petitioners living up to 17 miles away have been granted standing in spent fuel pool cases; LBP-20-7, 92 NRC 10 n.34 (2020)
- Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989)
expansion of a spent fuel pool is an example of a significant license amendment for which the 50-mile proximity presumption would apply; CLI-20-16, 92 NRC 516-17 & n.31 (2020)
petitioner may use the proximity presumption if petitioner has a significant property interest within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 41 (2020)
proximity presumption relieves petitioner of the need to satisfy traditional elements of standing; LBP-20-8, 92 NRC 40-41 (2020)
- Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329-30 (1989)
absent situations involving obvious potential for offsite consequences, petitioner must allege some specific injury in fact that will result from the action taken; LBP-20-8, 92 NRC 40 n.23 (2020)
proximity standing has been rejected for certain changes to worker-protection requirements; LBP-20-8, 92 NRC 43 (2020)
- Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 330 (1989)
in license amendment cases, proximity presumption applies only if the challenged license amendments present an obvious potential for offsite radiological consequences; LBP-20-8, 92 NRC 41 (2020)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 394 (2015)
intervention petitions are to be construed in favor of petitioner when determining standing; LBP-20-7, 92 NRC 9, 11 (2020); LBP-20-8, 92 NRC 39 (2020)
pro se petitioner may be granted some leeway in pleading and minor procedural matters where the opposing party is not prejudiced thereby; CLI-20-10, 92 NRC 329 n.12 (2020)
pro se petitioner will not be held to the same standards of clarity and precision to which a lawyer might reasonably be expected to adhere; LBP-20-8, 92 NRC 39-40 (2020)
to determine whether petitioner has sufficient interest, contemporaneous judicial concepts of standing are applied; LBP-20-7, 92 NRC 9 (2020)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-81-16, 13 NRC 1115, 1120 (1981)
license amendment request is reviewed to determine whether it would endanger the health and safety of the public; LBP-20-9, 92 NRC 92 n.167 (2020)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-89-15, 29 NRC 493, 495-96 (1989)
issue of whether a proposed amendment does or does not involve a significant hazards consideration is not litigable in any hearing; LBP-20-7, 92 NRC 14 n.68 (2020)

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- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-15-13, 81 NRC 456, 468, *aff'd*, CLI-15-25, 82 NRC 389 (2015)
pro se petitioner will not be held to the same standards of clarity and precision to which a lawyer might reasonably be expected to adhere; LBP-20-8, 92 NRC 39-40 (2020)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), CLI-20-3, 91 NRC 133 (2020)
applicability of 10 C.F.R. 51.53(c)(3) to subsequent license renewal is discussed; CLI-20-11, 92 NRC 338 n.16 (2020)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), CLI-20-3, 91 NRC 133, 141-45 (2020)
for Category 1 issues, Table B-1 contains a generic assessment and codification of the impacts that are reasonably likely to occur during a subsequent license renewal term; CLI-20-11, 92 NRC 343 (2020)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), LBP-19-3, 89 NRC 245, 258-59 (2019), *appeal dismissed as moot*, CLI-20-3, 91 NRC 133, 136 (2020)
fifty-mile proximity presumption applies to proceedings for issuance or renewal of a reactor construction permit/operating license under 10 C.F.R. Part 50 or an early site permit/COL under 10 C.F.R. Part 52; LBP-20-8, 92 NRC 41 (2020)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), LBP-19-3, 89 NRC 245, 272-73 & n.46 (2019)
applicability of 10 C.F.R. 51.53(c)(3) to subsequent license renewal is discussed; CLI-20-11, 92 NRC 338 n.16 (2020)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Units 6 and 7), CLI-17-12, 86 NRC 215, 219 (2017)
appellant must do more than recite its prior positions in a proceeding or state its general disagreement with a decision's result; CLI-20-11, 92 NRC 341 (2020)
it is not enough for appellant to simply repeat the arguments it made before the board and hope for a different result from the Commission; CLI-20-15, 92 NRC 498, 501 (2020)
- Friends of Animals v. Romero*, 948 F.3d 579, 586 (2d Cir. 2020)
environmental impact statement was not deficient under 40 C.F.R. § 1502.22 despite lacking information because that information was not essential to selecting between alternatives; CLI-20-8, 92 NRC 292 n.56 (2020)
- Geders v. United States*, 425 U.S. 80, 86 (1976)
trial judges have authority to determine the scope of rebuttal testimony within limits; LBP-20-9, 92 NRC 114 n.385 (2020)
- Geders v. United States*, 425 U.S. 80, 87 (1976)
if truth and fairness are not to be sacrificed, a judge must exert substantial control over proceedings; LBP-20-9, 92 NRC 114 n.385 (2020)
- Gen. Electric Co. v. EPA*, 290 F.3d 377, 384-85 (D.C. Cir. 2002)
agency violates the Administrative Procedure Act if it treats a guidance document as binding, either on itself or on the regulated community; LBP-20-12, 92 NRC 453 (2020)
- General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Unit 2), LBP-89-7, 29 NRC 138, 190-91 (1989)
information that a license amendment request must provide is described in 10 C.F.R. 50.57(a)(3) and (a)(6); LBP-20-9, 92 NRC 91 (2020)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995)
Commission looks for guidance to judicial concepts of standing which require a showing of a concrete and particularized injury (actual or threatened) that is fairly traceable to the challenged action and likely to be redressed by a favorable decision in the proceeding; CLI-20-12, 92 NRC 402 (2020)
organization seeking to intervene may demonstrate standing based on an asserted harm to interest of one or more of its individual members or to its own organizational interest; CLI-20-7, 92 NRC 230-31 (2020)
pro se petitioner may be granted some leeway in pleading and minor procedural matters where the opposing party is not prejudiced thereby; CLI-20-10, 92 NRC 329 n.12 (2020)

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- to address the injury requirement, an organization must show that the licensing action would constitute a threat to its organizational interests; CLI-20-7, 92 NRC 231 (2020)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 116-17 (1995)
- in license amendment proceeding, a proximity plus standard is applied on a case-by-case basis, taking into account nature of the proposed action and significance of the radioactive source; LBP-20-7, 92 NRC 9, 10 (2020)
- in proceedings other than reactor construction permit/operating license issuance or renewal or early site permit/COL, proximity presumption is determined on a case-by-case basis considering petitioner's location and nature of proposed action and significance of the radioactive source; CLI-20-15, 92 NRC 494 (2020); LBP-20-8, 92 NRC 41, 44 (2020)
- proximity-based standing determined on a case-by-case basis considers whether the proposed action involves a significant source of radioactivity producing an obvious potential for offsite consequences and the geographic extent appropriate for the danger posed by the source at issue; CLI-20-16, 92 NRC 517 (2020)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 120 (1995)
- to avoid open-ended inquiries into matters ultimately unrelated to NRC-licensed activities, NRC has limited contentions raising claims of poor or improper management or character to claims that relate directly to the proposed licensing action; CLI-20-12, 92 NRC 396 (2020)
- Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), CLI-93-16, 38 NRC 25, 32 (1993)
- every agency licensing action does not throw open an opportunity to engage in a free-ranging inquiry into licensee's character; LBP-20-7, 92 NRC 21 n.96 (2020)
- inquiry into character of licensee must point to some direct and obvious relationship between the licensing action and the potential character issues; LBP-20-7, 92 NRC 21 n.96 (2020)
- Goodrich Ave., LLC v. Sw. Water Co.*, 891 F. Supp. 2d 1364, 1382 (M.D. Ga. 2012)
- in forming his opinion, witness was permitted to consult other sources, and any weaknesses in his testimony went to its weight, rather than its admissibility; LBP-20-9, 92 NRC 111 n.359 (2020)
- Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 47 (1994)
- petitioner's asserted injury must be arguably within the zone of interests protected by the governing statute; CLI-20-12, 92 NRC 402 (2020)
- Hamlin Testing Laboratories, Inc.*, 2 AEC 423, 428 (1964)
- licensee willfully violated an NRC requirement when it knew what was required of it under the NRC's regulations and the terms and conditions of its license, and failed to comply therewith; LBP-20-11, 92 NRC 424-25 & n.99 (2020)
- Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 173-76 (2020)
- argument that the license cannot be issued because NRC lacks the authority to approve a project that might be illegal is dismissed; CLI-20-15, 92 NRC 499 (2020)
- inadmissibility of contention that central premise of application is that U.S. Department of Energy will take ownership of the waste and contract with applicant to store it until a permanent repository is available is upheld; CLI-20-14, 92 NRC 467 (2020)
- Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 177 (2020)
- in cases involving license transfers or non-power reactors, proximity-based standing is determined on a case-by-case basis, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue; CLI-20-16, 92 NRC 516 (2020)
- Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 177-78 (2020)
- standing was granted based on petitioner's member's residence within 10 miles and significant activities within approximately 3 miles of proposed large consolidated ISFSI; CLI-20-16, 92 NRC 517-18 n.37 (2020)
- Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 178 (2020)
- board found standing on the basis of members who lived several miles away from interim spent fuel storage facility; LBP-20-7, 92 NRC 11 (2020)

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- Holtec International* (HI-STORE Consolidated Interim Storage Facility), CLI-20-4, 91 NRC 167, 191, 211 (2020)
although Commission has jurisdiction to consider whether to reopen this proceeding and admit the contention, it refers motion to the Board for consideration of these matters initially; CLI-20-14, 92 NRC 489 (2020)
- Holtec International* (HI-STORE Consolidated Interim Storage Facility), LBP-19-4, 89 NRC 353, 367 (2019)
board rejected interim spent fuel storage facility applicant's claim that petitioners must first demonstrate with specificity how radiation might reach them; LBP-20-7, 92 NRC 11-12 (2020)
- Honeywell International, Inc.* (Metropolis Works Uranium Conversion Facility), CLI-13-1, 77 NRC 1, 18-19 (2013)
to show clear error, petitioner must demonstrate that the board's determination is not even plausible in light of the record as a whole; CLI-20-8, 92 NRC 280 (2020)
where the record evidence may be understood to support a view sharply different from that of the board does not mean that the board's own view of the evidence was clearly erroneous; CLI-20-8, 92 NRC 280 (2020)
- Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 396 (1979)
organization relying on representational standing must provide concrete indication that the member wants the organization to represent his or her interests in a proceeding; CLI-20-7, 92 NRC 232 n.31 (2020)
- Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-84-13, 19 NRC 659, 718-19 (1984)
differing analyses of experts of factual information already in the record do not normally constitute the type of information for which reopening of the record would be warranted; LBP-20-12, 92 NRC 445 n.77 (2020)
- Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-85-42, 22 NRC 795, 799 (1985)
differing analyses of experts of factual information already in the record do not normally constitute the type of information for which reopening of the record would be warranted; LBP-20-12, 92 NRC 445 n.77 (2020)
- Hunt v. Wash. State Apple Advert. Comm'n*, 432 U.S. 333, 343 (1977)
to establish representational standing, organization must demonstrate that members would otherwise have standing to sue in their own right, their interests are germane to its purpose, and neither the claim asserted nor the relief requested requires an individual member to participate in the lawsuit; LBP-20-8, 92 NRC 42 (2020)
- Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 53 (2001)
although adjudicatory hearings can provide for more rigorous public scrutiny of a NEPA environmental review than a public comment period, they are also much more restrictive; CLI-20-9, 92 NRC 325 (2020)
- Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 55 (2001)
NRC accords substantial weight to preferences of applicant and/or sponsor in siting and design of the project; CLI-20-14, 92 NRC 486 n.185 (2020); CLI-20-15, 92 NRC 505 (2020)
- Illinois v. Gates*, 462 U.S. 213, 232 (1983)
probable cause is a fluid concept that is not readily, or even usefully, reduced to a neat set of legal rules; LBP-20-11, 92 NRC 416 (2020)
- Illinois v. Gates*, 462 U.S. 213, 243-44 n.13 (1983)
probable cause requires only a probability or substantial chance of criminal activity, not an actual showing of such activity; LBP-20-11, 92 NRC 416, 428 (2020)
- International Uranium (USA) Corp.* (Request for Materials License Amendment), CLI-00-1, 51 NRC 9, 19 (2000)
NRC guidance documents are routine agency policy pronouncements that do not carry the binding effect of regulations; CLI-20-14, 92 NRC 474 n.67 (2020)

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- International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 250 (2001)
organization must demonstrate how at least one of its members may be affected by the licensing action, identify the member, and show that the organization is authorized to represent that member; LBP-20-8, 92 NRC 42 (2020)
- International Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 252 (2001)
Commission gives substantial deference to a board's ruling on standing and will defer to that ruling absent an error of law or abuse of discretion; CLI-20-15, 92 NRC 494 (2020)
NRC does not recognize standing for an organization that seeks to raise environmental or safety matters that are of general concern but do not directly affect the organization's own interests; CLI-20-7, 92 NRC 231 (2020)
- Kaiser Steel Corp. v. Mullins*, 455 U.S. 72, 77-78 (1982)
because an illegal contract is unenforceable, applicant plainly could not rely on such contracts to ensure its operating funds; CLI-20-14, 92 NRC 468-69 (2020)
- Kaley v. United States*, 571 U.S. 320, 338 (2014)
probable cause is not a high bar; LBP-20-11, 92 NRC 416, 428 (2020)
- Kenneth G. Pierce* (Sherwood, Illinois), CLI-95-6, 41 NRC 381, 382 (1995)
standard of clear error for overturning a board's factual findings means that its findings were not even plausible in light of the full record; CLI-20-8, 92 NRC 272-73 (2020); CLI-20-9, 92 NRC 303 (2020)
where the record evidence may be understood to support a view sharply different from that of the board does not mean that the board's own view of the evidence was clearly erroneous; CLI-20-8, 92 NRC 280 (2020)
- Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-90-8, 32 NRC 201, 206 (1991)
NRC accords substantial weight to the preferences of the applicant and/or sponsor in siting and design of the project if the application is not so artificially narrow as to circumvent the requirement that reasonable alternatives be considered; CLI-20-15, 92 NRC 505 (2020)
- Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-88-13, 27 NRC 509, 548-49, *aff'd in part, vacated in part, and remanded*, ALAB-905, 28 NRC 515 (1988)
alternative compliance methods can be reviewed by the board to determine reasonable assurance that structures, systems, and components are capable of fulfilling their intended functions; LBP-20-9, 92 NRC 182 n.912 (2020)
- Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 103 (1998)
National Environmental Policy Act gives agencies broad discretion to keep their inquiries within appropriate and manageable boundaries; LBP-20-10, 92 NRC 251 (2020)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-25, 60 NRC 223, 225 (2004)
argument that license amendment application was incomplete is impermissibly raised for the first time on appeal; CLI-20-18, 92 NRC 535 (2020)
NRC generally does not allow entirely new arguments to be presented in a reply; CLI-20-12, 92 NRC 377 n.126 (2020)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 622 (2004)
motions for reconsideration are not granted lightly, and the Commission strictly applies the reconsideration standard; LBP-20-12, 92 NRC 441 (2020)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 623 (2004)
board did not identify an exhaustive list of possible bases when it admitted a reformulated contention; LBP-20-9, 92 NRC 133, 149 (2020)
intervenor's testimony on prototype scaling supports its existing arguments regarding lack of representativeness and its implications for the large-scale alkali-silica reaction testing program; LBP-20-9, 92 NRC 76 (2020)
intervenor's are not required to prove their case at the contention admission stage, nor are they required to provide an exhaustive list of possible bases at that time; LBP-20-9, 92 NRC 129 (2020)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 629 (2004)
Commission defers to the board in its procedural case management decisions; CLI-20-9, 92 NRC 303 (2020)

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- Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1013 (1973)
adjudicatory record is allowed to augment existing environmental analyses in considering whether NRC Staff should have to issue a supplement to the final supplemental environmental impact statement; CLI-20-9, 92 NRC 306 (2020)
- Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 373 (1989)
agency must use a rule of reason to decide whether new information warrants a supplemental environmental impact statement; CLI-20-9, 92 NRC 310 (2020)
- Maryland v. Pringle*, 540 U.S. 366, 370 (2003)
probable cause deals with probabilities and depends on the totality of the circumstances; LBP-20-11, 92 NRC 416 (2020)
- McLouth Steel Prods. Corp. v. Lee*, 838 F.2d 1317, 1321-32 (D.C. Cir. 1988)
agency violates the Administrative Procedure Act if it treats a guidance document as binding, either on itself or on the regulated community; LBP-20-12, 92 NRC 453 (2020)
- Meridian Mfg., Inc. v. C&B Mfg., Inc.*, 340 F. Supp. 3d 808, 831 (N.D. Iowa 2018)
expert witness was qualified to testify as to the obviousness of design and validity of patent claims, despite not being a licensed professional engineer; LBP-20-9, 92 NRC 111 n.358 (2020)
- Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 776 (1983)
scope of the agency's inquiries must remain manageable if NEPA's goal of ensuring a fully informed and well considered decision is to be accomplished; CLI-20-8, 92 NRC 288 (2020); CLI-20-9, 92 NRC 321 (2020)
- Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-815, 22 NRC 198, 202 (1985)
critical question in motions to reopen is whether the information could have been submitted earlier; LBP-20-12, 92 NRC 440 (2020)
- Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), CLI-83-25, 18 NRC 327, 332 n.4 (1983)
to support standing in an NRC proceeding, an economic harm must be directly related to environmental or radiological harm; CLI-20-7, 92 NRC 233 n.32 (2020)
- Montana Wilderness Association v. Connell*, 725 F.3d 988 (9th Cir. 2013)
reasonable and good faith effort to obtain missing information on cultural resources is described; CLI-20-8, 92 NRC 284 n.11 (2020)
- Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 804 (1999)
given the procedural posture of case, the Ninth Circuit reviewed the facts of the case de novo; CLI-20-8, 92 NRC 278 n.135 (2020)
- Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 806 (1999)
agency researched historic sites in the area and communicated several times after commencement of the public comment period with tribal officials regarding identification and protection of cultural resources that might be affected; CLI-20-8, 92 NRC 285 (2020)
- Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 807 (1999)
agency made a reasonable and good faith effort to identify historic properties; CLI-20-8, 92 NRC 285 n.19, 293 (2020)
agency will have an opportunity to reopen its quest for and evaluation of historic sites; CLI-20-8, 92 NRC 278 n.135 (2020)
- Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 807, 809 (1999)
court was unable to conclude that the Forest Service failed to make a reasonable and good faith effort to identify historic properties, but it ultimately reversed the agency's decision on other grounds; CLI-20-8, 92 NRC 278 n.135 (2020)
- Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 811 (1999)
agency undertook reasonable identification efforts even when it resisted a tribe's requests for a formal study of cultural properties and given a more thorough exploration, the agency might have discovered more eligible sites; CLI-20-8, 92 NRC 282 n.3 (2020)

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- N. Anna Envtl. Coal. v. NRC*, 533 F.2d 655, 667-68 (D.C. Cir. 1976)
applicant bears the burden of proof for all matters on which an intervenor has satisfied its burden of going forward, requiring applicant to show by a preponderance of the evidence that it is entitled to the applied-for license; LBP-20-9, 92 NRC 95 (2020)
reasonable assurance standard does not require proof beyond a reasonable doubt; LBP-20-9, 92 NRC 92 n.172 (2020)
reasonable assurance standard is equated with a clear preponderance of the evidence; LBP-20-9, 92 NRC 92 (2020)
- New England Coal. on Nuclear Pollution v. NRC*, 582 F.2d 87, 94 (1st Cir. 1978)
adjudicatory record is allowed to augment existing environmental analyses in considering whether NRC Staff should have to issue a supplement to the final supplemental environmental impact statement; CLI-20-9, 92 NRC 306 (2020)
- New England Power Co.* (NEP Units 1 and 2), LBP-78-9, 7 NRC 271, 280-81 (1978)
NRC Staff docketing decisions, which presumably include its conclusions about how much applicant information Staff requires to reach that determination, is one for which Staff is afforded considerable discretion; LBP-20-8, 92 NRC 57 n.10 (2020)
- New Jersey v. NRC*, 526 F.3d 98, 102 (3d Cir. 2008)
agency violates the Administrative Procedure Act if it treats a guidance document as binding, either on itself or on the regulated community; LBP-20-12, 92 NRC 453 n.131 (2020)
- NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 307 (2012)
Commission generally defers to the board contention admissibility rulings unless it finds either an error of law or abuse of discretion; CLI-20-8, 92 NRC 257 (2020)
- NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 323 (2012)
appellant would have to show that ISFSI applicant's accident consequences analysis was unreasonable or that appellant's proposed methodology would be more appropriate; CLI-20-15, 92 NRC 500 (2020)
contentions must identify a deficiency in NRC Staff's environmental analysis and may not merely offer suggestions of other ways the analysis could have been done; LBP-20-10, 92 NRC 251 (2020)
simply presenting an alternative analysis is not enough to raise an admissible contention unless petitioner also shows that the application's analysis is inadequate or unreasonable; CLI-20-15, 92 NRC 501 (2020)
- NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-18-4, 87 NRC 89, 96-97 (2018)
board may consider readily apparent legal implications of a pro se petitioner's arguments, even if not expressly stated in the petition, but petitioner, not the board, must provide information required to satisfy contention admissibility standards; LBP-20-8, 92 NRC 46 (2020)
- NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-19-7, 90 NRC 1, 8-9 (2019)
no significant hazards consideration determination by NRC Staff associated with license amendment request is not subject to challenge in an adjudicatory proceeding; LBP-20-8, 92 NRC 38 n.17 (2020)
- NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-19-7, 90 NRC 1, 14 (2019)
challenge to ongoing operation of a facility should be as a petition seeking enforcement action; LBP-20-8, 92 NRC 47 (2020)
if petitioner seeks to challenge the ongoing operation of the facility, it may file a petition seeking enforcement action; LBP-20-7, 92 NRC 12-13 & n.55 (2020)
- North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 221 (1999)
potential safety impacts, if any, from a shortfall in financial funding for decommissioning would not be so direct or immediate as the safety impacts of significant technical deficiencies; CLI-20-12, 92 NRC 368 (2020)
- North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 221-22 (1999)
demonstration of reasonable assurance of financial qualification is flexible; CLI-20-12, 92 NRC 368 (2020)
- North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 222 (1999)
in license transfer adjudications, financial assurance is deemed to be acceptable if it is based on plausible assumptions and forecasts, even if the possibility is not insignificant that things will turn out less favorably than expected; CLI-20-12, 92 NRC 368 (2020)

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- mere casting of doubt on some aspects of proposed funding plans is not by itself sufficient to defeat a finding of reasonable assurance; CLI-20-12, 92 NRC 368 (2020)
- Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Unit 3), LBP-00-2, 51 NRC 25, 28 (2000) although the 50-mile proximity presumption does not apply in spent fuel pool cases, persons living little more than a stone's throw from the facility meet the proximity test; LBP-20-7, 92 NRC 9-10 (2020)
- Northeast Nuclear Energy Co. and Consolidated Edison Co. of New York, Inc.* (Millstone Nuclear Power Station, Units 1, 2, and 3), CLI-00-18, 52 NRC 129, 132-33 (2000)
- proximity-based standing is unavailable where the proposed action does not involve changes to the operation, personnel, or financing of the facility; CLI-20-16, 92 NRC 517 (2020)
- Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 44 (1978)
- to issue a license amendment, NRC must find reasonable assurance that the activities authorized by the amendment can be conducted without endangering the health and safety of the public, and in compliance with Commission regulations; LBP-20-9, 92 NRC 91 (2020)
- Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-10-27, 72 NRC 481, 493-96 (2010)
- licensing board decision based on information previously available to a petitioner in the evidentiary record is not considered new information sufficient to satisfy the timeliness requirement; LBP-20-12, 92 NRC 442-43 (2020)
- NRDC v. NRC*, 879 F.3d 1202, 1209-12 (D.C. Cir. 2018)
- adjudicatory record is allowed to augment existing environmental analyses in considering whether NRC Staff should have to issue a supplement to the final supplemental environmental impact statement; CLI-20-9, 92 NRC 306 (2020)
- deficiency in an environmental impact statement may be cured using the hearing record; CLI-20-9, 92 NRC 302 (2020)
- NRDC v. NRC*, 879 F.3d 1202, 1212 (D.C. Cir. 2018)
- challenge to NRC practice of augmenting an environmental analysis with the publicly available adjudicatory record was rejected; CLI-20-9, 92 NRC 307 (2020)
- it would be preferable for the FEIS to contain all relevant information and the record of decision to be complete and adequate before the license is issued; CLI-20-9, 92 NRC 324 (2020)
- Nuclear Fuel Services, Inc.* (Erwin, Tennessee), CLI-04-13, 59 NRC 244, 248 (2004)
- Commission gives substantial deference to a board's ruling on standing and will defer to that ruling absent an error of law or abuse of discretion; CLI-20-15, 92 NRC 494 (2020)
- to demonstrate injury in fact, petitioners must show that they will in fact be perceptibly harmed by the challenged agency action, not that they can imagine circumstances in which they could be affected by the agency's action; CLI-20-16, 92 NRC 519 (2020)
- Nuclear Innovation North America LLC* (South Texas Project, Units 3 and 4), LBP-11-25, 74 NRC 380, 397 (2011)
- at the contention admissibility stage, intervenors need not marshal their evidence as though preparing for an evidentiary hearing; LBP-20-9, 92 NRC 129-30 n.497 (2020)
- Nuclear Management Co.* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 732 (2006)
- board does not entertain arguments advanced for the first time in a reply brief; LBP-20-10, 92 NRC 247 n.86 (2020)
- Nuclear Management Co., LLC* (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 743 & n.14 (2005)
- NRC Staff docketing decisions, which presumably include its conclusions about how much applicant information Staff requires to reach that determination, is one for which Staff is afforded considerable discretion; LBP-20-8, 92 NRC 57 n.10 (2020)
- reply cannot expand the scope of the arguments set forth in the original hearing request; LBP-20-10, 92 NRC 247 n.86 (2020)
- O'Shea v. Littleton*, 414 U.S. 488, 494 (1974)
- injury that establishes standing must be both concrete and particularized, not conjectural or hypothetical; CLI-20-7, 92 NRC 230 (2020); CLI-20-16, 92 NRC 515 (2020)

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- Oglala Sioux Tribe v. NRC*, 896 F.3d 520 (D.C. Cir. 2018)
core requirement of NEPA is that an agency decisionmaker must consider an adequate environmental review before making a decision on a licensing action; CLI-20-9, 92 NRC 323 (2020)
- Oglala Sioux Tribe v. NRC*, 896 F.3d 520, 530 (D.C. Cir. 2018)
NRC Staff has a responsibility under NEPA to preserve important historic, cultural, and natural aspects of our national heritage regardless of whether a federally recognized tribe appears to assert and prosecute a claim; CLI-20-9, 92 NRC 313 (2020)
- Old Chief v. United States*, 519 U.S. 172, 188 n.9 (1997)
licensing boards do not require strict rules of evidence to prevent presentation of unfair and prejudicial evidence to a jury; LBP-20-9, 92 NRC 115 (2020)
- Oregon v. Kennedy*, 456 U.S. 667, 690 n.29 (1982)
deliberate misconduct generally must be inferred from the objective evidence; LBP-20-11, 92 NRC 421 n.82 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-644, 13 NRC 903, 994-95 (1981)
differing analyses of experts of factual information already in the record do not normally constitute the type of information for which reopening of the record would be warranted; LBP-20-12, 92 NRC 445 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-653, 16 NRC 55, 72 (1982)
prima facie evidence must be legally sufficient to establish a fact or case unless disproved; LBP-20-9, 92 NRC 94-95 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-756, 18 NRC 1340, 1345 (1983)
movant to reopen a record must identify uncorrected errors that endanger safe plant operation; LBP-20-12, 92 NRC 441, 445 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-763, 19 NRC 571, 577-78 (1984)
applicant must show by a preponderance of the evidence that there is reasonable assurance that activities authorized by the operating license can be conducted without endangering the health and safety of the public, and that all applicable regulations are satisfied; LBP-20-9, 92 NRC 95 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-86-12, 24 NRC 1, 6 n.3 (1986), *rev'd and remanded on other grounds sub nom. San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986)
issue of whether a proposed amendment does or does not involve a significant hazards consideration is not litigable in any hearing; LBP-20-7, 92 NRC 14 n.68 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-02-16, 55 NRC 317, 336 (2002)
ratepayer interests do not confer standing in NRC proceedings; CLI-20-7, 92 NRC 233 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-02-16, 55 NRC 317, 336 n.23 (2002)
to support standing in an NRC proceeding, an economic harm must be directly related to environmental or radiological harm; CLI-20-7, 92 NRC 232-33 n.32 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 438, 440-41 (2011)
consideration of information regarding a nearby seismic fault for a site in which seismic hazards were acknowledged to be disproportionately dominant risk hazards in a severe accident mitigation alternatives analysis is material to the analysis of environmental impacts; CLI-20-11, 92 NRC 346 n.71 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 438-44 (2011)
Commission considered claim that applicant must provide a probabilistic analysis of new seismic information or show that the cost of such analysis would be exorbitant; CLI-20-8, 92 NRC 292 n.55 (2020); CLI-20-9, 92 NRC 321 (2020)

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- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 443 (2011)
environmental report must address the environmental implications of a lack of information; CLI-20-11, 92 NRC 339 n.25, 345-46 n.70 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 443-44 (2011)
as an independent agency, NRC is not bound by Council on Environmental Quality regulations unless adopted into Part 51, but it looks to them for guidance; CLI-20-9, 92 NRC 303 (2020); CLI-20-11, 92 NRC 346 n.72 (2020)
Commission considers 40 C.F.R. 1502.22 as guidance; CLI-20-9, 92 NRC 299 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-16-9, 83 NRC 472, 482 (2016)
Commission affords substantial deference to board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-13, 92 NRC 459 (2020); CLI-20-18, 92 NRC 533 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-16-11, 83 NRC 524, 539 & n.101 (2016)
licensing boards have considerable discretion in their management of adjudicatory proceedings; CLI-20-8, 92 NRC 269 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 400-01 (2006)
motions for reconsideration are not granted lightly, and the Commission strictly applies the reconsideration standard; LBP-20-12, 92 NRC 441 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-06-27, 64 NRC 399, 401 (2006)
publication of a legally required document, by itself, is not an unanticipated event sufficient to justify reconsideration; LBP-20-12, 92 NRC 442 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-08-1, 67 NRC 1 (2008)
claim that NRC did not fully disclose potential radiological impacts of a terrorist attack in its supplemental environmental impact statement is considered; CLI-20-8, 92 NRC 292 n.55 (2020); CLI-20-9, 92 NRC 321-22 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), LBP-02-23, 56 NRC 413, 426 (2002)
to obtain presumptive standing based on proximity, petitioners must show that the instant license transfer proceeding presents an obvious potential for offsite radiological consequences; CLI-20-16, 92 NRC 517 (2020)
- Pacific Gas and Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), LBP-02-23, 56 NRC 413, 426-27 (2002)
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- Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-834, 23 NRC 263, 264 (1986)
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- Power Authority of the State of New York* (James A. Fitzpatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-00-22, 52 NRC 266, 312 (2000)
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- Powertech (USA), Inc.* (Dewey-Burdock In Situ Uranium Recovery Facility), CLI-16-20, 84 NRC 219, 247-48 (2016)
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- Powertech (USA), Inc.* (Dewey-Burdock In Situ Uranium Recovery Facility), LBP-19-10, 90 NRC 287, 297-310 (2019)
NRC Staff's unsuccessful four-year effort to obtain missing information on cultural resources following a ruling that Staff's initial four-year effort to obtain missing information on cultural resources did not satisfy NEPA or NHPA is described; CLI-20-8, 92 NRC 283 n.7 (2020)
- PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 138 & n.26 (2010)
petitioner generally must make a fresh standing demonstration in each proceeding in which intervention is sought because petitioner's circumstances may change from one proceeding to the next; LBP-20-8, 92 NRC 42 (2020)
- PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 138-39 (2010)
in proceedings involving construction or operation of a nuclear power plant, the geographic zone of potential harm is the area within a 50-mile radius of the site; LBP-20-7, 92 NRC 9 (2020)
- PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 139 (2010)
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- PPL Susquehanna, LLC* (Susquehanna Steam Electric Station, Units 1 and 2), CLI-15-8, 81 NRC 500, 506 n.47 (2015)
issuance of requests for additional information alone does not establish deficiencies in an application or that NRC Staff will find any applicant responses unsatisfactory; LBP-20-10, 92 NRC 253 (2020)
petitioners must do more than rest on the mere existence of requests for additional information as a basis for their contention; LBP-20-10, 92 NRC 253 (2020)
- Private Fuel Storage, LLC*. (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999)
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- Private Fuel Storage, LLC*. (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999)
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failure to include fact-specific standing allegations constitutes grounds for denying standing; LBP-20-8, 92 NRC 41 (2020)
- Private Fuel Storage, LLC*. (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 34 (2000)
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- Private Fuel Storage, LLC*. (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 259 (2001)
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- Private Fuel Storage, LLC*. (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 263 (2001)
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- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 264 (2001)
regulatory guides describe approaches to compliance that have been deemed acceptable by NRC Staff in the past, but do not create new regulatory requirements; CLI-20-14, 92 NRC 474 (2020)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 265 (2001)
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- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-03-8, 58 NRC 11, 26 (2003)
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- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-4, 59 NRC 31, 44 (2004)
arguments raised for the first time on appeal will not be considered; CLI-20-11, 92 NRC 341 (2020)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 134 (2004)
to challenge factual determinations on which a regulation rests in the context of NEPA, petitioner would have to present specific, fact-based claims to the contrary, not mere allegations; CLI-20-15, 92 NRC 506-07 (2020)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 136-37 (2004)
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- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-05-12, 61 NRC 345, 350 (2005)
standard for admitting a new contention after the record is closed is higher than for an ordinary late-filed contention; LBP-20-10, 92 NRC 241 (2020)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-05-19, 62 NRC 403, 411 (2005)
licensing boards are expected to review testimony, exhibits, and other evidence carefully to resolve factual disputes; CLI-20-8, 92 NRC 272 (2020)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142 (1998), *aff'd in part*, CLI-98-13, 48 NRC 26 (1998)
purpose of NRC adjudicatory hearings is to consider claims of deficiencies in a license application; CLI-20-17, 92 NRC 527 (2020)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-99-43, 50 NRC 306, 313 (1999)
petitioner is expected to evaluate all available information at the earliest possible time to identify the potential basis for contentions and preserve their admissibility; LBP-20-10, 92 NRC 243 (2020)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-03-4, 57 NRC 69, 140-41 (2003)
for safety-related matters, there is no burden on NRC Staff, but a board will consider Staff's safety evaluation in reaching its determination; LBP-20-9, 92 NRC 95 n.197 (2020)
- Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), CLI-08-15, 68 NRC 1, 3 (2008)
if petitioners believe that an application is incomplete in some way, they may file a contention to that effect; CLI-20-17, 92 NRC 526-27 & n.40 (2020)
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- Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), CLI-08-15, 68 NRC 1, 3 n.2 (2008)
NRC Staff's decision to docket an application is not challengeable in an adjudicatory proceeding; CLI-20-17, 92 NRC 524 (2020); CLI-20-18, 92 NRC 536 (2020)
- Progress Energy Carolinas, Inc.* (Shearon Harris Nuclear Power Plant, Units 2 and 3), CLI-09-8, 69 NRC 317, 323 (2009)
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- Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-22, 70 NRC 640 (2009)
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- Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-22, 70 NRC 640, 655 (2009)
rebuttal testimony may not advance any new affirmative claims or arguments that should have been, but were not, included in the party's previously filed initial written statement; LBP-20-9, 92 NRC 114 n.379 (2020)
- PSEG Power, LLC, and PSEG Nuclear, LLC* (Early Site Permit Application), LBP-16-4, 83 NRC 187, 210-11 n.171 (2016)
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in Subpart L proceedings, written prefiled testimony and exhibits are typically submitted well in advance of the evidentiary hearing, and in NRC's most common types of hearings, licensing boards themselves, not the parties, orally examine witnesses; LBP-20-9, 92 NRC 115 (2020)
- Public Service Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976)
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- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988), *aff'd sub nom. Mass. v. NRC*, 924 F.2d 311 (D.C. Cir.), *cert. denied*, 502 U.S. 899 (1991)
reach of a contention necessarily hinges on its terms coupled with its stated bases; LBP-20-9, 92 NRC 129 (2020)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-940, 32 NRC 225, 243 (1990)
movant to reopen a record must identify uncorrected errors that endanger safe plant operation; LBP-20-12, 92 NRC 441, 445 (2020)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 9 (1978)
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- Pueblo of Sandia v. United States*, 50 F.3d 856, 860 (10th Cir. 1995)
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- Pueblo of Sandia v. United States*, 50 F.3d 856, 861-62 (10th Cir. 1995)
level of effort an agency must expend to meet the reasonable and good faith effort standard could depend on the circumstances of a given proceeding; CLI-20-8, 92 NRC 284 (2020)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)
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- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989)
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- Rockwell International Corp.* (Rocketdyne Division), LBP-89-27, 30 NRC 265, 266 (1989)
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- Rockwell International Corp.* (Rocketdyne Division), LBP-89-27, 30 NRC 265, 269 (1989)
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- Safety Light Corp.* (Bloomsburg, Pennsylvania Site), LBP-05-2, 61 NRC 53, 61 (2005)
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- San Luis Obispo Mothers for Peace v. NRC 449 F.3d 1016, 1032 (9th Cir. 2006)*
NRC declines to consider terrorism consequences outside the 9th Circuit; CLI-20-14, 92 NRC 488-89 (2020)
- Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 72 (1994)
injury that established standing must be both concrete and particularized, not conjectural, or hypothetical; CLI-20-7, 92 NRC 230 (2020); CLI-20-16, 92 NRC 515 (2020)
- Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 n.22 (1994)
presumption of standing based on geographic proximity is not confined solely to Part 50 reactor licenses, but is also applicable to materials cases where the potential for offsite consequences is obvious; LBP-20-7, 92 NRC 9 n.33 (2020)
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- Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75-76 (1994)
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- Settling Devotional Claimants v. Copyright Royalty Board*, 797 F.3d 1106, 1118 (D.C. Cir. 2015)
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- Shaw AREVA MOX Services, LLC* (Mixed Oxide Fuel Fabrication Facility), CLI-15-9, 81 NRC 512, 519 (2015)
to show clear error, petitioner must demonstrate that the board's determination is not even plausible in light of the record as a whole; CLI-20-8, 92 NRC 280 (2020)
- Shaw AREVA MOX Services, LLC* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 481-83 (2008)
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- Shieldalloy Metallurgical Corp.* (License Amendment Request for Decommissioning of the Newfield, New Jersey Facility), CLI-07-20, 65 NRC 499, 503 (2007)
to obtain relief, appellant must identify an error in a board's decision; CLI-20-11, 92 NRC 341 (2020)
- Shieldalloy Metallurgical Corp.* (License Amendment Request for Decommissioning of the Newfield, New Jersey Facility), CLI-07-20, 65 NRC 499, 504 (2007)
purpose of an appeal is not to attempt to cure deficient contentions by presenting arguments and evidence never provided to the board; CLI-20-11, 92 NRC 341 (2020)
supporting information for a contention should be submitted when the contention is filed; CLI-20-11, 92 NRC 341 (2020)
- Sierra Club v. Morton*, 405 U.S. 727, 739 (1972)
mere interest in a problem, no matter how longstanding and how qualified the organization is in evaluating the problem, is not sufficient by itself to render the organization adversely affected within the meaning of the Administrative Procedure Act; CLI-20-7, 92 NRC 234 n.31 (2020)
- South Carolina Electric and Gas Co. and South Carolina Public Service Authority* (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-12-9, 75 NRC 421, 441 (2012)
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- licensee must adopt strategies that provide reasonable protection for the associated equipment from external events and such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and spent fuel pool cooling capabilities; LBP-20-12, 92 NRC 450 (2020)
- Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-717, 17 NRC 346, 365 n.32 (1983)
- Federal Rules of Evidence do not apply directly to NRC proceedings, although boards look to them as guidance; CLI-20-9, 92 NRC 311 (2020); LBP-20-9, 92 NRC 115 (2020)
- Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-13-10, 78 NRC 563, 569 n.42 (2013)
- unreviewed board decisions are not binding on future boards but may be cited by future litigants as persuasive authority; LBP-20-9, 92 NRC 116 (2020)
- Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-07-3, 65 NRC 237, 253 (2007)
- neither mere speculation nor bare conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow admission of a contention; LBP-20-8, 92 NRC 51 (2020)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Unit 3), CLI-20-6, 91 NRC 225, 230 (2020)
- Commission affords greater latitude to a hearing request submitted by a pro se petitioner, but it is ultimately petitioner's burden to provide sufficient facts to establish standing; CLI-20-16, 92 NRC 520 n.51 (2020)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Unit 3), CLI-20-6, 91 NRC 225, 238 (2020)
- Commission affords greater latitude to a hearing request submitted by a pro se petitioner, but it is ultimately petitioner's burden to provide sufficient facts to establish standing; CLI-20-16, 92 NRC 515 (2020)
- petitioner bears the burden of establishing its standing; LBP-20-8, 92 NRC 40 (2020)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Unit 3), CLI-20-6, 91 NRC 225, 238 & n.83 (2020)
- hearing petition generally will be construed in petitioner's favor as it seeks to demonstrate standing; LBP-20-8, 92 NRC 39 (2020)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-16-5, 83 NRC 259, 265 & n.7, 276 (2016)
- decisions regarding standing in prior license amendment proceedings relating to a facility are not dispositive for a subsequent proceeding but standing was granted where both implicated Tier 1 information changes; LBP-20-8, 92 NRC 44 (2020)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-16-5, 83 NRC 259, 271-74 (2016)
- member declarations, when considered along with pro se petition, show that there are sufficient allegations of increased risk of harm associated with the amendment to demonstrate the basis for its representational standing through application of proximity presumption; LBP-20-8, 92 NRC 45 (2020)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-16-5, 83 NRC 259, 274 & n.78 (2016)
- decision on standing is not a ruling on either admissibility or merits of contentions; LBP-20-8, 92 NRC 45 (2020)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-16-10, 84 NRC 17, 49 (2016), *aff'd on other grounds*, CLI-17-2, 85 NRC 33, 38 n.23 (2017)
- decisions on standing in prior license amendment proceedings relating to a facility are not dispositive for a subsequent proceeding but standing was granted where both implicated Tier 1 information changes; LBP-20-8, 92 NRC 44 (2020)
- St. Regis Paper Co. v. United States*, 368 U.S. 208, 229 (1961) (Black, J., dissenting)
- it is no less good morals and good law that government should turn square corners in dealing with the people than that the people should turn square corners in dealing with their government; LBP-20-8, 92 NRC 57 n.11 (2020)

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- Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 19 (1998)
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- Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 22 (1998)
it is petitioners' responsibility, not the board's, to formulate contentions and to provide the necessary information to satisfy the basis requirement for admission; LBP-20-8, 92 NRC 46 (2020)
- Strata Energy, Inc.* (Ross In Situ Recovery Uranium Project), LBP-12-3, 75 NRC 164, 177, *aff'd*, CLI-12-12, 75 NRC 603 (2012)
organization may establish either a cognizable injury to its organizational interests or harm to the interests of its members; LBP-20-8, 92 NRC 42 (2020)
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- Strata Energy, Inc.* (Ross In Situ Recovery Uranium Project), LBP-12-3, 75 NRC 164, 189 n.27, *aff'd*, CLI-12-12, 75 NRC 603 (2012)
presumed zone of potential harm corresponds roughly to the ingestion pathway emergency planning zone applicable to the currently licensed fleet of commercial power reactors; LBP-20-8, 92 NRC 41 n.27 (2020)
- Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-12-12, 75 NRC 603, 608 (2012)
Commission gives substantial deference to a board's ruling on standing and will defer to that ruling absent an error of law or abuse of discretion; CLI-20-15, 92 NRC 494 (2020)
- Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-12-12, 75 NRC 603, 608-13 (2012)
Commission generally defers to the board on matters of contention admissibility and standing unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-14, 92 NRC 467 (2020)
- Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-16-13, 83 NRC 566 (2016)
to show clear error, petitioner must demonstrate that the board's determination is not even plausible in light of the record as a whole; CLI-20-8, 92 NRC 280 (2020)
- Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-16-13, 84 NRC 566, 586 (2016)
even where the record evidence may be understood to support a view sharply different from that of the board does not mean that the board's own view of the evidence was clearly erroneous; CLI-20-8, 92 NRC 280 (2020)
standard of clear error for overturning a board's factual findings means that its findings were not even plausible in light of the full record; CLI-20-8, 92 NRC 272-73 (2020)
- Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-16-13, 83 NRC 566, 595 (2016)
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- Susquehanna Nuclear, LLC* (Susquehanna Steam Electric Station, Units 1 and 2), CLI-17-4, 85 NRC 59, 72 (2017)
appellant must do more than recite its prior positions in a proceeding or state its general disagreement with a decision's result; CLI-20-11, 92 NRC 341 (2020)
- Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1, 2, and 3), ALAB-664, 15 NRC 1, 15-16, *vacated and remanded on other grounds*, CLI-82-26, 16 NRC 880 (1982)
to issue a license amendment, NRC must find reasonable assurance that the activities authorized by the amendment can be conducted without endangering the health and safety of the public, and in compliance with Commission regulations; LBP-20-9, 92 NRC 91-92 n.167 (2020)
- Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1, 2, and 3), CLI-17-5, 85 NRC 87, 91 (2017)
Commission affords substantial deference to board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-13, 92 NRC 459 (2020); CLI-20-18, 92 NRC 533 (2020)
- Tennessee Valley Authority* (Clinch River Nuclear Site), LBP-18-4, 88 NRC 55, 67 n.70 (2018)
counsel may argue how the law should be interpreted, but in general that is not a proper subject of expert testimony; LBP-20-9, 92 NRC 110 n.353 (2020)

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- Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2), CLI-14-3, 79 NRC 31, 35 (2014)
filings not otherwise authorized by NRC rules are permitted only where necessity or fairness dictates;
CLI-20-11, 92 NRC 337 n.8 (2020)
- Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 1),
LBP-02-14, 56 NRC 15, 35 (2002)
license amendment applicant must satisfy requirements of 10 C.F.R. 50.90 and demonstrate that
requested amendment meets all applicable regulatory requirements and acceptance criteria and does
not otherwise harm public health and safety or common defense and security; LBP-20-8, 92 NRC 47
n.46 (2020)
- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 1), CLI-04-24, 60 NRC 160, 187 (2004)
prima facie showing of a violation of the ERA must show that the individual engaged in protected
activity, an adverse employment action was taken, and the individual's protected activity was a
contributing factor in the adverse employment action; LBP-20-11, 92 NRC 428 (2020)
- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 1), CLI-04-24, 60 NRC 160, 189 (2004)
petition claiming that the board's findings of fact are clearly erroneous requires the petitioner to show
that the board's findings are not even plausible in light of the record viewed in its entirety;
CLI-20-9, 92 NRC 303 (2020)
- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), CLI-15-19, 82 NRC 151, 155 (2015)
intentionally heavy burden is placed on parties seeking to reopen the record; LBP-20-10, 92 NRC 241
(2020)
- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), CLI-15-19, 82 NRC 151, 156 (2015)
reopening the record for any reason is considered to be an extraordinary action; LBP-20-10, 92 NRC
241 (2020)
- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), LBP-09-26, 70 NRC 939, 988 (2009)
board admits a contention, not its bases; LBP-20-9, 92 NRC 133 (2020)
- Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), CLI-93-4, 37 NRC 156,
162-63 (1993)
petitioner could not rely on other boards' findings of standing in two prior proceedings concerning the
same facility; LBP-20-8, 92 NRC 42 n.36 (2020)
- Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), CLI-99-12, 36 NRC 62,
76 (1992)
motion to reopen is timely if it seeks to admit information that could not have been submitted at an
earlier time in the proceeding; LBP-20-12, 92 NRC 440 (2020)
- Town of Winthrop v. FAA*, 535 F.3d 1, 13 (1st Cir. 2008)
environmental impact statement is not a research document; CLI-20-9, 92 NRC 321 (2020)
it is not unreasonable for an agency to decline to study in a supplemental environmental impact
statement a pollutant for which there are not yet standard methods of measurement or analysis;
CLI-20-8, 92 NRC 282 n.4 (2020)
- U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island
of Hawaii, Hawaii), CLI-10-20, 72 NRC 185, 187, 189 (2010)
Commission affords greater latitude to a hearing request submitted by a pro se petitioner, but it is
ultimately petitioner's burden to provide sufficient facts to establish standing; CLI-20-16, 92 NRC
515 (2020)
petitioner showed no obvious potential for offsite consequences or plausible means by which he could
be harmed by possession-only license; CLI-20-15, 92 NRC 495 (2020)
- U.S. Department of Energy* (High-Level Waste Repository), CLI-08-20, 68 NRC 272, 274 (2008)
in deciding whether to accept an application for docketing, NRC Staff does not consider technical or
legal merits of the application but rather simply screens it to determine whether it contains sufficient
information for NRC to begin its safety review; CLI-20-17, 92 NRC 525 (2020)
- U.S. Department of Energy* (High-Level Waste Repository), CLI-09-14, 69 NRC 580, 588 (2009)
argument that license amendment application was incomplete is impermissibly raised for the first time
on appeal; CLI-20-18, 92 NRC 535 (2020)
- U.S. Department of Energy* (High-Level Waste Repository), CLI-09-14, 69 NRC 580, 605 (2009)
petitioner may not challenge applicable statutory requirements as part of an administrative adjudication;
LBP-20-7, 92 NRC 16 n.77 (2020)

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- U.S. Department of Energy* (High-Level Waste Repository), LBP-08-10, 67 NRC 450, 453-56 (2008)
contentions must address all six pleading requirements of 10 C.F.R. 2.309(f)(1)(i)-(vi); LBP-20-7, 92 NRC 21 n.97 (2020)
- U.S. Department of Energy* (Plutonium Export License), CLI-04-17, 59 NRC 357, 363 (2004)
Commission has long applied contemporaneous judicial concepts of standing to assess whether petitioner has established the requisite interest to intervene; CLI-20-16, 92 NRC 515 (2020)
petitioner must identify an interest in the proceeding by claiming an actual or threatened injury that is fairly traceable to the challenged action, is likely to be redressed by a favorable decision, and arguably falls within the zone of interests protected by the AEA; CLI-20-7, 92 NRC 230 (2020)
- U.S. Enrichment Corp.* (Paducah, Kentucky Gaseous Diffusion Plant), CLI-01-23, 54 NRC 267, 272 (2001)
it is petitioner's burden to provide sufficient facts to establish standing; CLI-20-7, 92 NRC 230 (2020)
- Union Electric Co.* (Callaway Plant, Unit 2), CLI-11-5, 74 NRC 141, 145-46, 158 & n.65 (2011)
Commission considered a series of petitions to suspend adjudicatory, licensing, and rulemaking activities in multiple proceedings under its inherent supervisory authority and declined to address procedural issues that would merit further discussion in a traditional adjudication; CLI-20-17, 92 NRC 523 n.13 (2020)
Commission considers petition under its inherent supervisory authority, and thus need not address the propriety of petitioners' motion for leave to reply; CLI-20-17, 92 NRC 523 (2020)
- Union of Concerned Scientists v. NRC*, 824 F.2d 108, 118 (D.C. Cir. 1987)
NRC need not demand that nuclear power plants present no risk of harm to satisfy the adequate protection standard; LBP-20-9, 92 NRC 92 n.168 (2020)
- Union of Concerned Scientists v. NRC*, 824 F.2d 108, 119 (D.C. Cir. 1987)
"adequate protection" is synonymous with no undue risk; LBP-20-9, 92 NRC 92 (2020)
- United States v. Seabagala*, 256 F.3d 59, 66 (1st Cir. 2001)
trial courts are permitted a wide berth in respect to regulating the scope of rebuttal testimony; LBP-20-9, 92 NRC 115 n.385 (2020)
- United States v. Students Challenging Regulatory Agency Procedures*, 412 U.S. 669, 688-89 (1973)
to demonstrate injury in fact, petitioners must show that they will in fact be perceptibly harmed by the challenged agency action, not that they can imagine circumstances in which they could be affected by the agency's action; CLI-20-16, 92 NRC 519 (2020)
- United States v. Thuma*, 786 F.2d 437, 444 (1st Cir. 1986)
wide latitude afforded to trial courts extends to 'determining whether proposed evidence is proper rebuttal; LBP-20-9, 92 NRC 115 n.385 (2020)
- United States v. Whren*, 111 F.3d 956, 958 (D.C. Cir. 1997)
absent extraordinary circumstances, argument raised in a footnote will not be considered; LBP-20-7, 92 NRC 8 (2020)
- USEC Inc.* (American Centrifuge Plant), CLI-05-11, 61 NRC 309, 311 (2005)
Commission looks for guidance to judicial concepts of standing which require a showing of a concrete and particularized injury (actual or threatened) that is fairly traceable to the challenged action and likely to be redressed by a favorable decision in the proceeding; CLI-20-12, 92 NRC 402 (2020)
- USEC Inc.* (American Centrifuge Plant), CLI-05-11, 61 NRC 309, 314-15 (2005)
petitioner may use the proximity presumption if petitioner has a significant property interest within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 41 (2020)
- USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 433, 458 (2006)
new argument presented on appeal would be sufficient grounds for rejection; CLI-20-15, 92 NRC 507 n.115 (2020)
purpose of an appeal is not to attempt to cure deficient contentions by presenting arguments and evidence never provided to the board; CLI-20-11, 92 NRC 341 (2020)
- Utahns for Better Transp. v. Dep't of Transp.*, 305 F.3d 1152, 1163 (10th Cir. 2002)
rule of reason is applied in deciding whether claimed deficiencies in NEPA document are significant or merely flyspecks; CLI-20-9, 92 NRC 310 n.102 (2020)

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- Vermont Yankee Nuclear Power Corp. and AmerGen Vermont, LLC* (Vermont Yankee Nuclear Power Station), CLI-00-17, 52 NRC 79, 83 (2000)
applicants may close a license transfer transaction despite the lack of final agency approval of the application, but do so at their own risk in case the Commission later determines that intervenors have raised valid objections to the application; CLI-20-12, 92 NRC 363 (2020)
license amendment application will lack NRC's final approval until and unless the Commission concludes the adjudication in applicants' favor; CLI-20-12, 92 NRC 354 (2020)
- Vermont Yankee Nuclear Power Corp. and AmerGen Vermont, LLC* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163 (2000)
organization must identify member that it represents by name and address and demonstrate that the member has authorized the organization to request a hearing on his or her behalf; CLI-20-12, 92 NRC 403 (2020)
to establish representational standing, an organization must demonstrate how at least one of its members may be affected by the challenged licensing action and would have standing in his or her own right; CLI-20-12, 92 NRC 403 (2020)
- Vermont Yankee Nuclear Power Corp. and AmerGen Vermont, LLC* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 163 n.4 (2000)
in license transfer proceedings, Commission has found the concerns of nearby residents over a licensee's financial ability to properly carry out and complete decommissioning sufficient to establish standing; CLI-20-12, 92 NRC 403 n.15 (2020)
- Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 173-74 (2000)
Commission views suspension of licensing proceedings to be a drastic action that is not warranted absent immediate threats to public health and safety; CLI-20-17, 92 NRC 524 (2020)
- Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), LBP-87-17, 25 NRC 838, 844 (1987)
NRC Staff's no significant hazards consideration determination is a procedural one that can only be made by NRC Staff or the Commission; LBP-20-7, 92 NRC 13 (2020)
- Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), LBP-90-6, 31 NRC 85, 91 (1990)
issue of whether a proposed amendment does or does not involve a significant hazards consideration is not litigable in any hearing; LBP-20-7, 92 NRC 14 n.68 (2020)
- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Unit 3), CLI-12-14, 75 NRC 692, 701-02 (2012)
although Commission has jurisdiction to consider whether to reopen this proceeding and admit the contention, it refers motion to the Board for consideration of these matters initially; CLI-20-14, 92 NRC 489 (2020)
- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-342, 4 NRC 98, 105-06 (1976)
effect of change in ownership on members' monthly utility bills is an economic interest that falls outside the zone of interests protected by the Atomic Energy Act; CLI-20-7, 92 NRC 232 (2020)
- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-342, 4 NRC 98, 107 n.12 (1976)
standing determinations do not hinge to any extent upon an appraisal of how much or little assistance the would-be intervenor might render in the decisional process; CLI-20-7, 92 NRC 234 (2020)
- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245 (1978)
information that a license amendment request must provide is described in 10 C.F.R. 50.57(a)(3) and (a)(6); LBP-20-9, 92 NRC 91 (2020)
- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979)
although the 50-mile proximity presumption does not apply in spent fuel pool cases, persons living little more than a stone's throw from the facility meet the proximity test; LBP-20-7, 92 NRC 9-10 (2020)

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- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-555, 10 NRC 23, 26 (1979)
expert witness must make available data used in analyses to support conclusions asserted in the expert's testimony to enable a board to make a reasoned judgment on the weight; LBP-20-9, 92 NRC 96 (2020)
- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-555, 10 NRC 23, 26-27 (1979)
board applies appropriate evidentiary weight to testimony to ensure that the hearing is fair and produces an adequate record; LBP-20-9, 92 NRC 117-18 (2020)
- Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-555, 10 NRC 23, 27 (1979)
if expert testimony is crucial to outcome of a safety or environmental issue, the expert must make available sufficient information on details of the analysis to permit correctness of the conclusion to be evaluated; LBP-20-9, 92 NRC 96 n.203 (2020)
- Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 422 (5th Cir. 1987)
questions relating to bases and sources of an expert's opinion affect weight to be assigned to that opinion rather than its admissibility and should be left for the trier of fact's consideration; LBP-20-9, 92 NRC 111 n.359 (2020)
- Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1263 (1982)
discovery on contention's subject matter can be obtained once the contention is admitted for litigation; LBP-20-8, 92 NRC 55 n.5 (2020)
- Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Units 1 and 2), LBP-81-45, 14 NRC 853 (1981)
petitioner argues because license application was incomplete, the standard for an admissible contention is lowered and contention should be admitted; CLI-20-18, 92 NRC 535 (2020)
- X-Ray Engineering Co.*, 1 AEC 553, 555 (1960)
licensee willfully violated an NRC requirement when it knew what was required of it under the NRC's regulations and the terms and conditions of its license, and failed to comply therewith; LBP-20-11, 92 NRC 425 n.99 (2020)
- Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 6 (1996)
contemporaneous judicial standing concepts generally require a showing of injury-in-fact within the statutory zones of interest, causation, and redressability; LBP-20-8, 92 NRC 40 (2020)
- Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 207-09 (1998)
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- Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 213 (1998)
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- 10 C.F.R. 1.13
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- 10 C.F.R. 2.101
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- 10 C.F.R. 2.101(a)(3)
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- 10 C.F.R. 2.101(c)
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- 10 C.F.R. 2.102(a)
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- 10 C.F.R. 2.202
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- 10 C.F.R. 2.202(a)(1)
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- 10 C.F.R. 2.202(a)(3)
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- 10 C.F.R. 2.202(a)(5)
Commission may, upon a finding that public health, safety, or interest so requires or that the violation or conduct causing the violation is willful, make an order immediately effective; LBP-20-11, 92 NRC 424 (2020)
NRC is authorized to issue immediately effective enforcement orders if it finds that public health, safety, or interest so requires or that the violation or conduct causing the violation is willful; LBP-20-11, 92 NRC 414 (2020)
when an immediate effectiveness determination is challenged, NRC Staff must satisfy a two-part test; LBP-20-11, 92 NRC 415, 424 (2020)
- 10 C.F.R. 2.202(c)
licensee or any other person adversely affected by an immediately effective enforcement order may demand a hearing on the merits of the order; LBP-20-11, 92 NRC 415 (2020)
- 10 C.F.R. 2.202(c)(2)(i)
adequate evidence to justify immediate effectiveness of an enforcement order requires a showing that the order is based on more than mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 416 (2020)

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- licensee or any other person adversely affected by an immediately effective enforcement order may move the presiding officer to set aside the immediate effectiveness of the order; LBP-20-11, 92 NRC 415 (2020)
- motion to set aside immediate effectiveness of an enforcement order must state with particularity the reasons why the order is not based on adequate evidence and must be accompanied by affidavits or other evidence relied on; LBP-20-11, 92 NRC 415 (2020)
- NRC Staff must show that the immediately effective enforcement order is based on more than mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 418, 425 (2020)
- to set aside immediate effectiveness of an enforcement order, alleged wrongdoer bears the burden of going forward with evidence that the order is not based on adequate evidence but on mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 415 (2020)
- 10 C.F.R. 2.202(c)(2)(vi)
- NRC Staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds for the immediately effective order and immediate effectiveness is warranted; LBP-20-11, 92 NRC 414-15, 424 (2020)
- 10 C.F.R. 2.206
- because licensing board lacks jurisdiction to suspend previously issued construction permit, intervenor seeking such relief must file a request for enforcement action; LBP-20-8, 92 NRC 48 n.50 (2020)
- challenge to ongoing operation of a facility should be as a petition seeking enforcement action; LBP-20-8, 92 NRC 47 (2020)
- challenges to current licensing basis of a plant are not within the scope of a license amendment proceeding, being challenged more properly through a request for enforcement action; LBP-20-7, 92 NRC 12-13 (2020); LBP-20-8, 92 NRC 47 (2020)
- if petitioner has grounds to believe that impacts of planned decommissioning, site restoration, and spent fuel management activities exceed those previously reviewed, its recourse is a petition for enforcement action; CLI-20-12, 92 NRC 390 (2020)
- 10 C.F.R. 2.309(a)
- board admits a contention, not its bases; LBP-20-9, 92 NRC 133 (2020)
- if petitioners have not established standing to intervene the question of whether petitioners have submitted at least one admissible contention need not be reached; CLI-20-16, 92 NRC 514 (2020)
- to establish standing to intervene petitioner must demonstrate standing and submit at least one admissible contention; CLI-20-7, 92 NRC 228 n.3 (2020); CLI-20-12, 92 NRC 364 (2020); LBP-20-7, 92 NRC 12 (2020)
- 10 C.F.R. 2.309(c)
- contentions may be filed after the initial deadline to intervene based on new and materially different information; CLI-20-17, 92 NRC 527 (2020)
- following application docketing, any additional applicant-submitted information received and docketed by the agency prior to completion of the adjudicatory proceeding generally would be eligible for consideration in the context of a new or amended contention; LBP-20-8, 92 NRC 57 n.9 (2020)
- following the intervention petition deadline, participants may still file new or amended environmental contentions challenging NRC Staff's environmental review documents if timeliness requirements are met; CLI-20-8, 92 NRC 259-60 (2020)
- new or amended contentions must be based on information not previously available; LBP-20-8, 92 NRC 47 n.48 (2020)
- to demonstrate good cause for filing after the initial deadline for intervention petitions, petitioner must also submit contentions that meet the applicable contention admissibility requirements; CLI-20-17, 92 NRC 527 n.44 (2020)
- 10 C.F.R. 2.309(c)(1)
- motions for leave to file a new contention after the applicable deadline for contentions will not be entertained unless the information on which the filing was based was not previously available and is based on materially different information and the filing has been submitted in a timely fashion; CLI-20-12, 92 NRC 394 (2020)
- new or amended contentions will not be entertained unless the presiding officer determines that there is good cause for the filing; CLI-20-8, 92 NRC 260 (2020)

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- regulation does not provide for motions to supplement a hearing request; CLI-20-12, 92 NRC 392 n.217 (2020)
- 10 C.F.R. 2.309(c)(1)(i)-(iii)
good cause for filing new or amended contentions can be demonstrated if a contention is based on information that was not previously available, is materially different from information previously available, and has been submitted in a timely fashion based on the availability of the subsequent information; CLI-20-8, 92 NRC 260 (2020)
- 10 C.F.R. 2.309(d)
information that petitioner should include in its petition to establish standing is set out but the standard the board must apply when deciding whether that information is sufficient is not; LBP-20-7, 92 NRC 9 (2020)
to demonstrate good cause for filing after the initial deadline for intervention petitions, petitioner must also submit contentions that meet the applicable contention admissibility requirements; CLI-20-17, 92 NRC 527 n.44 (2020)
to intervene in NRC licensing proceedings, petitioner must show standing to intervene and submit at least one admissible contention for hearing; CLI-20-12, 92 NRC 364 (2020)
- 10 C.F.R. 2.309(d)(1)
Commission has long applied contemporaneous judicial concepts of standing to assess whether petitioner has established the requisite interest to intervene; CLI-20-16, 92 NRC 514-15 n.15 (2020)
to intervene in a license transfer proceeding, petitioner must demonstrate standing by showing that its interest may be affected by the proceeding; CLI-20-7, 92 NRC 230 (2020)
- 10 C.F.R. 2.309(d)(1)(i)-(iv)
to establish standing, intervention petition must include name, address, and telephone number of petitioner, nature of petitioner's right to be made a party, nature and extent of petitioner's interest, and possible effect of any resulting decision or order on petitioner's interest; LBP-20-8, 92 NRC 39 (2020)
- 10 C.F.R. 2.309(f)
to demonstrate good cause for filing after the initial deadline for intervention petitions, petitioner must also submit contentions that meet the applicable contention admissibility requirements; CLI-20-17, 92 NRC 527 n.44 (2020)
to intervene in NRC licensing proceedings, petitioner must show standing to intervene and submit at least one admissible contention for hearing; CLI-20-12, 92 NRC 364 (2020)
- 10 C.F.R. 2.309(f)(1)
in addition to establishing standing, intervention petitioner also must proffer at least one admissible contention; LBP-20-8, 92 NRC 45 (2020)
requirements for an admissible contention. are specified; CLI-20-12, 92 NRC 365 (2020)
to merit an evidentiary hearing under the NRC's rules, merely expressing concerns is not sufficient; LBP-20-7, 92 NRC 22 (2020)
- 10 C.F.R. 2.309(f)(1)(i)-(vi)
admissible contention must satisfy six pleading requirements; CLI-20-11, 92 NRC 341-42 (2020); LBP-20-7, 92 NRC 12, 21 (2020); LBP-20-8, 92 NRC 45-46 (2020)
contention that independent spent fuel storage installation application fails to adequately, accurately, completely, and consistently describe control of subsurface mineral rights and oil and gas and mineral extraction operations is inadmissible; LBP-20-10, 92 NRC 249 (2020)
- 10 C.F.R. 2.309(f)(1)(iii)
contention must be rejected if it raises issues beyond the scope of the proceeding as dictated by the Commission's hearing notice; LBP-20-7, 92 NRC 12 (2020); LBP-20-8, 92 NRC 46 (2020)
contention that foundation settlement issues and construction factors create unacceptable operational risk to public health and safety is inadmissible; LBP-20-8, 92 NRC 50 (2020)
- 10 C.F.R. 2.309(f)(1)(iii)-(vi)
contention questioning licensee's character in license amendment proceeding is inadmissible; LBP-20-7, 92 NRC 21 (2020)
contention that impact of damaged Boraflex racks on safe transfer of spent fuel out of the spent fuel pool is inadmissible; LBP-20-7, 92 NRC 19 (2020)
contention that more prudent action to ensure spent fuel pool subcriticality is reducing density by removal and placement in dry cask storage is inadmissible; LBP-20-7, 92 NRC 18 (2020)

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- contention that potential use of experimental, higher enriched and longer burn-up fuel has not undergone adequate evaluation as pertains to being placed into spent fuel pool and subsequent impact on criticality is inadmissible; LBP-20-7, 92 NRC 20 (2020)
- contention that removal and replacement of Boraflex in spent fuel pool has potential for a significant increase in probability or consequences of an accident is inadmissible; LBP-20-7, 92 NRC 16 (2020)
- contention that specific analysis of the spent fuel pool as currently loaded is needed prior to consideration of license amendment is inadmissible; LBP-20-7, 92 NRC 20 (2020)
- 10 C.F.R. 2.309(f)(1)(iv)
- admissible contention must demonstrate that the issue raised is material to findings NRC must make to support the action involved; LBP-20-10, 92 NRC 249-50 (2020)
- contention fails to raise an issue material to the findings NRC must make to support the action and fails to demonstrate a genuine dispute with the application; CLI-20-11, 92 NRC 340 (2020)
- 10 C.F.R. 2.309(f)(1)(v)
- contention alleging wrongdoing regarding timeliness of licensee's reporting to NRC on stability of the Nuclear Island basement is inadmissible; LBP-20-8, 92 NRC 49 (2020)
- contention challenging method for ensuring subcriticality in spent fuel pool as insufficiently conservative is inadmissible; LBP-20-7, 92 NRC 17 (2020)
- contention that not physically removing the degraded Boraflex from spent fuel pool will result in unanticipated consequences and debris in the spent fuel pool is inadmissible; LBP-20-7, 92 NRC 17 (2020)
- neither mere speculation nor bare conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow admission of a contention; LBP-20-8, 92 NRC 51 (2020)
- without supporting citations, claims are nothing more than mere speculation; LBP-20-8, 92 NRC 52 (2020)
- 10 C.F.R. 2.309(f)(1)(v)-(vi)
- although contention was within the scope of the proceeding, it failed to factually support and dispute specific portions of the license amendment request with regard to emergency response; CLI-20-10, 92 NRC 331 (2020)
- contention that environmental report fails to address significance of the declining amount of external operating experience due to the early shutdown or retirement of a significant portion of currently operating fleet of reactors is speculative, incorrect, and thus inadmissible; CLI-20-11, 92 NRC 340 (2020)
- 10 C.F.R. 2.309(f)(1)(vi)
- admissible contention must provide sufficient information to show that a genuine dispute exists with applicant or licensee on a material issue of law or fact; LBP-20-10, 92 NRC 250 (2020)
- assertions that foundation settlement was not considered in the plant design are unsupported and do not show a genuine dispute; LBP-20-8, 92 NRC 50 (2020)
- contention admissibility standard that requires petitioner to show a genuine dispute on a material issue of law or fact specifically excludes proceedings under 10 C.F.R. 52.103; LBP-20-8, 92 NRC 52 n.55 (2020)
- contention challenging method for ensuring subcriticality in spent fuel pool as insufficiently conservative is inadmissible; LBP-20-7, 92 NRC 17 (2020)
- contention fails to raise an issue material to the findings NRC must make to support the action and fails to demonstrate a genuine dispute with the application; CLI-20-11, 92 NRC 340 (2020)
- contention of omission must be supported by reasons for petitioner's belief that the omitted information is required by law; CLI-20-18, 92 NRC 535 n.42 (2020)
- contention that not physically removing degraded Boraflex from spent fuel pool will result in unanticipated consequences and debris in the spent fuel pool is inadmissible; LBP-20-7, 92 NRC 17 (2020)
- if petitioner believes that the application fails to contain information on a relevant matter as required by law, the contention must identify each failure and supporting reasons for petitioner's belief; CLI-20-11, 92 NRC 342 (2020)
- inadmissibility of contention that environmental report was insufficient because it did not account for potential waste transportation and packaging issues is upheld; CLI-20-13, 92 NRC 460 (2020)

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- to show that a genuine dispute exists with applicant, a contention must include references to specific portions of the application that petitioner disputes and supporting reasons for each dispute; CLI-20-11, 92 NRC 342 (2020)
- 10 C.F.R. 2.309(f)(2)
- contentions may be filed after the initial deadline to intervene based on new and materially different information; CLI-20-17, 92 NRC 527 (2020)
- contentions submitted in initial petitions to intervene must be based on documents or other information available at the time the petition is to be filed; CLI-20-8, 92 NRC 259 (2020)
- environmental contentions submitted in an intervention petition are based on applicant's environmental report; CLI-20-8, 92 NRC 259 (2020); CLI-20-11, 92 NRC 346 n.70 (2020); LBP-20-10, 92 NRC 242 (2020)
- following the intervention petition deadline, participants may still file new or amended environmental contentions challenging NRC Staff's environmental review documents if timeliness requirements are met; CLI-20-8, 92 NRC 259-60 (2020)
- new contentions based on a draft or final Staff NEPA document must be based on information that differs significantly from that previously available; CLI-20-8, 92 NRC 267 n.71 (2020)
- petitioner is expected to evaluate all available information at the earliest possible time to identify potential basis for contentions and preserve their admissibility; LBP-20-10, 92 NRC 243 (2020)
- 10 C.F.R. 2.309(f)(3)
- adoption of a contention by petitioner who has not independently gained party status in a proceeding is addressed; CLI-20-12, 92 NRC 366 (2020)
- 10 C.F.R. 2.311
- in consideration of petitioner's pro se status, Commission accepts board's referral and consider the pleading as an appeal; CLI-20-10, 92 NRC 329 (2020)
- 10 C.F.R. 2.311(a)
- because petitioner was granted a hearing on one contention, any appeal of the board's rejection of its other contentions would be considered interlocutory; CLI-20-15, 92 NRC 493 (2020)
- 10 C.F.R. 2.311(c)
- appeal of a decision wholly denying a request for hearing is a matter of right; CLI-20-11, 92 NRC 341 (2020); CLI-20-13, 92 NRC 459 (2020); CLI-20-14, 92 NRC 467 (2020); CLI-20-18, 92 NRC 533 (2020)
- because petitioner was granted a hearing on one contention, any appeal of the board's rejection of its other contentions would be considered interlocutory; CLI-20-15, 92 NRC 493 (2020)
- 10 C.F.R. 2.319
- presiding officer has broad authority to regulate conduct of proceedings; LBP-20-9, 92 NRC 116 (2020)
- 10 C.F.R. 2.319(d)
- although licensing board may refer to the Federal Rules of Evidence for guidance, it is not bound by them; LBP-20-9, 92 NRC 115 (2020)
- licensing board has authority to receive evidence, examine witnesses, strike irrelevant, immaterial, unreliable, duplicative, or cumulative evidence, and take any other action consistent with applicable law in its conduct of proceedings; CLI-20-9, 92 NRC 312 (2020)
- 10 C.F.R. 2.319(e)
- licensing board has power to restrict irrelevant, immaterial, unreliable, duplicative, or cumulative evidence and/or arguments; LBP-20-9, 92 NRC 114 (2020)
- 10 C.F.R. 2.319(g)
- licensing board has authority to receive evidence, examine witnesses, strike irrelevant, immaterial, unreliable, duplicative, or cumulative evidence, and take any other action consistent with applicable law in its conduct of proceedings; CLI-20-9, 92 NRC 312 (2020)
- 10 C.F.R. 2.319(j)
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- 10 C.F.R. 2.319(s)
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- 10 C.F.R. 2.323
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- 10 C.F.R. 2.323(c)
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party may file an answer in support of or in opposition to a motion for reconsideration; LBP-20-12, 92 NRC 452, 455 (2020)
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- 10 C.F.R. 2.323(e)
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- 10 C.F.R. 2.325
applicant bears the burden of proof for all matters on which an intervenor has satisfied its burden of going forward, requiring applicant to show by a preponderance of the evidence that it is entitled to the applied-for license; LBP-20-9, 92 NRC 95 (2020)
- 10 C.F.R. 2.326
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- 10 C.F.R. 2.326(a)(1)
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- 10 C.F.R. 2.326(a)(1)-(3)
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- 10 C.F.R. 2.326(a)(2)
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- 10 C.F.R. 2.326(a)(3)
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- 10 C.F.R. 2.326(b)
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- 10 C.F.R. 2.329(c)(1)
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- 10 C.F.R. 2.331
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- 10 C.F.R. 2.332
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- 10 C.F.R. 2.332(a)-(c)
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- 10 C.F.R. 2.335
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- 10 C.F.R. 2.335(a)
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- 10 C.F.R. 2.337
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NRC Staff's request to modify license condition relies on internal guidance document that is not part of the evidentiary record for the proceeding, not the subject of a motion for judicial notice, and not cited in Staff's previous filings; LBP-20-12, 92 NRC 452 (2020)
- 10 C.F.R. 2.337(g)
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- 10 C.F.R. 2.341
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- 10 C.F.R. 2.341(b)(4)
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- 10 C.F.R. 2.341(b)(4)(i)
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- 10 C.F.R. 2.341(b)(4)(i)-(v)
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- 10 C.F.R. 2.342(a)
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- 10 C.F.R. 2.713(c)
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- 10 C.F.R. 2.1207
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- 10 C.F.R. 2.1207(a)(2)
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- 10 C.F.R. 2.1209
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- 10 C.F.R. 2.1210(c)
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- 10 C.F.R. 2.1213(f)
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- 10 C.F.R. 2.1315
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- 10 C.F.R. 2.1316
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- 10 C.F.R. 2.1316(a)
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- 10 C.F.R. 40.42(a)
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- 10 C.F.R. Part 50
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- 10 C.F.R. 50.2
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- 10 C.F.R. 50.5
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- 10 C.F.R. 50.5(a)
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- 10 C.F.R. 50.5(a)(1)
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- 10 C.F.R. 50.5(c)
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- 10 C.F.R. 50.7
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- 10 C.F.R. 50.12
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- 10 C.F.R. 50.23
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- 10 C.F.R. 50.33
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- 10 C.F.R. 50.33(f)
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- 10 C.F.R. 50.33(f)(2)
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- 10 C.F.R. 50.33(k)(1)
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- 10 C.F.R. 50.34
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- 10 C.F.R. 50.34(a)(1)
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- 10 C.F.R. 50.40
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- 10 C.F.R. 50.40(a)
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- 10 C.F.R. 50.50
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- 10 C.F.R. 50.54(bb)
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- 10 C.F.R. 50.55(bb)
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- 10 C.F.R. 50.57
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- 10 C.F.R. 50.57(a)
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- 10 C.F.R. 50.57(a)(3)
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- 10 C.F.R. 50.57(a)(3)(i)-(ii)
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- 10 C.F.R. 50.57(a)(6)
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- 10 C.F.R. 50.58(b)(6)
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- 10 C.F.R. 50.59
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- 10 C.F.R. 50.59(c)(1)
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- 10 C.F.R. 50.59(c)(2)
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- 10 C.F.R. 50.59(c)(2)(viii)
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- 10 C.F.R. 50.61(a)(2)
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- 10 C.F.R. 50.61(b)(1), (5)
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- 10 C.F.R. 50.61a(f)(6)(i)(B)
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- 10 C.F.R. 50.65(a)(1)
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- 10 C.F.R. 50.68(b)
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- 10 C.F.R. 50.71(e)
where analytical methodology is an essential part of the conclusion that the facility meets the required design bases, the updated final safety analysis report must describe the specific analytical methods; LBP-20-9, 92 NRC 90 (2020)
- 10 C.F.R. 50.72(b)(3)(ii)(B)
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- 10 C.F.R. 50.75
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- 10 C.F.R. 50.75(b)
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- 10 C.F.R. 50.75(c)
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- 10 C.F.R. 50.75(e)(1)
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- 10 C.F.R. 50.75(e)(1)(i)
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- 10 C.F.R. 50.75(f)(3)
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- 10 C.F.R. 50.75(g)
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- 10 C.F.R. 50.80(a)
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- 10 C.F.R. 50.80(b)(1)(i)
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license transfer review is limited to specific matters, including technical and financial qualifications of proposed transferee; CLI-20-12, 92 NRC 358 (2020)
- 10 C.F.R. 50.80(c)
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- 10 C.F.R. 50.82(a)(4)
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- 10 C.F.R. 50.82(a)(4)(i)
before or within 2 years following permanent cessation of operations, licensee must submit a PSDAR to NRC and a copy to the affected state(s); CLI-20-12, 92 NRC 384 (2020)
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in a PSDAR, licensee must provide its reasons for concluding that environmental impacts associated with planned decommissioning activities are bounded by previously issued, relevant site-specific or generic environmental impact statements; CLI-20-12, 92 NRC 385 (2020)
PSDAR addresses environmental impacts associated with site-specific decommissioning activities; CLI-20-12, 92 NRC 386 n.180 (2020)
site-specific decommissioning cost estimate must be provided within 2 years following permanent cessation of operations; CLI-20-12, 92 NRC 378 n.134 (2020)
- 10 C.F.R. 50.82(a)(4)(ii)
NRC will provide notice of a PSDAR and an opportunity for public comment as well as hold a public meeting on the PSDAR; CLI-20-12, 92 NRC 384 (2020)
- 10 C.F.R. 50.82(a)(5)
licensee may begin to perform major decommissioning activities consistent with its PSDAR 90 days after NRC has received the PSDAR; CLI-20-12, 92 NRC 384 (2020)
- 10 C.F.R. 50.82(a)(6)
licensee is prohibited from performing any decommissioning activities that foreclose release of the site for unrestricted use or result in a loss of reasonable assurance that adequate funds will be available for decommissioning; CLI-20-12, 92 NRC 385 n.176 (2020)

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- 10 C.F.R. 50.82(a)(6)(ii)
if petitioner has grounds to believe that impacts of planned decommissioning, site restoration, and spent fuel management activities exceed those previously reviewed, its recourse is a petition for enforcement action; CLI-20-12, 92 NRC 390 (2020)
licensees may not undertake any decommissioning activities that result in any significant environmental impacts that have not been previously reviewed; CLI-20-12, 92 NRC 383 (2020)
PSDAR does not authorize a licensee to perform any decommissioning activity that is not already permitted under the license or would result in significant environmental impacts not already reviewed; CLI-20-12, 92 NRC 384 (2020)
- 10 C.F.R. 50.82(a)(6)(iii)
licensee is prohibited from conducting any decommissioning activity that would result in a loss of reasonable assurance that adequate funds will be available for decommissioning; CLI-20-12, 92 NRC 361 (2020)
- 10 C.F.R. 50.82(a)(7)
licensee must notify NRC and the affected state in writing before performing any decommissioning activity that would significantly increase estimated site-specific decommissioning cost beyond that provided to NRC; CLI-20-12, 92 NRC 361 (2020)
- 10 C.F.R. 50.82(a)(8)(i)(A)
exemption is sought to use decommissioning trust fund to pay not only for decommissioning costs but also for spent fuel management and nonradiological site restoration costs; CLI-20-12, 92 NRC 361 (2020)
licensees may not use a decommissioning trust fund to pay for activities that do not fall under NRC's definition of decommissioning; CLI-20-12, 92 NRC 361 (2020)
- 10 C.F.R. 50.82(a)(8)(i)(B) and (C)
license transfer applicant must demonstrate its financial and technical qualifications; CLI-20-12, 92 NRC 399 (2020)
- 10 C.F.R. 50.82(a)(8)(iii)
site-specific decommissioning cost estimate must be provided within 2 years following permanent cessation of operations; CLI-20-12, 92 NRC 378 n.134 (2020)
- 10 C.F.R. 50.82(a)(8)(iv)
NRC requires a licensee that specifies a delayed completion of decommissioning by including a storage or surveillance period to provide a means of adjusting cost estimates over the storage or surveillance period; CLI-20-12, 92 NRC 372 n.100 (2020)
- 10 C.F.R. 50.82(a)(8)(v)
licensee must provide every year in the financial assurance status report an estimate of the cost to complete decommissioning and the decommissioning criteria on which the estimate is based; CLI-20-12, 92 NRC 378-79 (2020)
licensee that has submitted its site-specific decommissioning cost estimate must submit to NRC a financial assurance status report every year containing specific information; CLI-20-12, 92 NRC 360 (2020)
NRC will monitor increased withdrawals from the decommissioning trust fund and increased projected costs as reported in the annual decommissioning financial assurance status reports; CLI-20-12, 92 NRC 371 (2020)
- 10 C.F.R. 50.82(a)(8)(v)(B)
financial assurance status report must include an estimate of costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year, and decommissioning criteria upon which the estimate is based; CLI-20-12, 92 NRC 371 n.98 (2020)
- 10 C.F.R. 50.82(a)(8)(v)-(vii)
licensee must annually continue to show adequate funding until the license has been terminated and all spent fuel has been removed from the site; CLI-20-12, 92 NRC 361 (2020)
- 10 C.F.R. 50.82(a)(8)(vi)
if remaining decommissioning funds together with projected earnings on those funds are not sufficient to cover estimated cost to complete decommissioning, licensee must include in the status report additional financial assurance to cover remaining estimated costs; CLI-20-12, 92 NRC 360 (2020)
if the annual decommissioning financial assurance status report predicts a shortfall in funding, licensee must provide additional financial assurance; CLI-20-12, 92 NRC 371 (2020)

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- licensee must provide every year in the financial assurance status report an estimate of the cost to complete decommissioning and the decommissioning criteria on which the estimate is based; CLI-20-12, 92 NRC 378-79 (2020)
- 10 C.F.R. 50.82(a)(8)(vii)
if spent fuel management funding does not cover projected costs, licensee would need to provide a funding plan in the annual status report to cover the costs; CLI-20-12, 92 NRC 372 (2020)
licensee who is relying on the decommissioning trust fund to pay for ISFSI decommissioning costs will need to provide this information in an annual financial status report on decommissioning; CLI-20-12, 92 NRC 382 (2020)
- 10 C.F.R. 50.82(a)(8)(vii)(A)-(B)
annual report on status of spent fuel management funding must specify amount of funds available to cover cost of managing the spent fuel and projected cost of managing the fuel until DOE takes title to and possession of the fuel; CLI-20-12, 92 NRC 360 (2020)
- 10 C.F.R. 50.82(a)(8)(vii)(C)
if the available funds are not sufficient to cover projected cost of managing the spent fuel, annual report must include a plan to obtain additional funds; CLI-20-12, 92 NRC 360-61 (2020)
- 10 C.F.R. 50.82(a)(9)(ii)(A), (F)
license termination plan must be submitted at least two years before the date of license termination and must include a site characterization and an updated site-specific decommissioning cost estimate for the remaining decommissioning activities; CLI-20-12, 92 NRC 378 (2020)
- 10 C.F.R. 50.82(a)(9)(ii)(F)
updated decommissioning cost estimate of remaining costs must be provided in a license termination plan; CLI-20-12, 92 NRC 378 n.134 (2020)
- 10 C.F.R. 50.90
licensee must obtain a license amendment before implementing a proposed change if the change would result in a departure from a method of evaluation described in the updated final safety analysis report used in establishing the design bases or in the safety analyses; LBP-20-9, 92 NRC 90 n.161 (2020)
under certain circumstances, licensee must apply for a license amendment and obtain NRC's approval before it can implement a proposed change; LBP-20-9, 92 NRC 91 (2020)
when licensee seeks to amend its license, including technical specifications in the license, it must file an application for amendment that fully describes the changes desired; LBP-20-9, 92 NRC 91 (2020)
- 10 C.F.R. 50.91(a)(4)
issuance of an amendment to a reactor license during pendency of a hearing on the amendment is allowed, as long as NRC has first determined that the amendment involves no significant hazards consideration; LBP-20-9, 92 NRC 84 (2020)
NRC Staff has authority to issue combined license amendments and corresponding exemption following no significant hazards consideration determination and safety evaluation; LBP-20-8, 92 NRC 39 n.19 (2020)
- 10 C.F.R. 50.92
issuance of an amendment to a reactor license during pendency of a hearing on the amendment is allowed, as long as NRC has first determined that the amendment involves no significant hazards consideration; LBP-20-9, 92 NRC 84 (2020)
license amendment request must not be inimical to the common defense and security; LBP-20-9, 92 NRC 102 (2020)
- 10 C.F.R. 50.92(a)
consideration of alternative structural monitoring techniques is beyond the scope of NRC Staff review of license amendment request; LBP-20-9, 92 NRC 180 (2020)
in determining whether a license or permit amendment will be issued to applicant, Commission is guided by considerations governing issuance of initial licenses or permits to the extent applicable and appropriate; LBP-20-8, 92 NRC 47 n.46 (2020); LBP-20-9, 92 NRC 91 (2020)
requests to modify conditions imposed in renewed licenses must be fully justified and approved by NRC Staff using the same considerations that originally governed issuance of the renewed license; LBP-20-7, 92 NRC 15 n.75 (2020)

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- 10 C.F.R. 50.92(c)
contention that potential use of experimental, higher enriched and longer burn-up fuel has not undergone adequate evaluation as pertains to being placed into spent fuel pool and subsequent impact on criticality is inadmissible; LBP-20-7, 92 NRC 20 (2020)
- 10 C.F.R. 50.92(c)(1)-(3)
to support a no significant hazards consideration determination, a proposed amendment must not significantly increase probability or consequences of an accident previously evaluated, or create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a significant reduction in a margin of safety; LBP-20-7, 92 NRC 14 (2020)
- 10 C.F.R. Part 50, Appendix A
in addition to satisfying the reasonable assurance standard, licensee must comply with General Design Criteria; LBP-20-9, 92 NRC 93 (2020)
- 10 C.F.R. Part 50, Appendix A, GDC 1
applicant's proposed method to evaluate seismic Category I structures affected by alkali-silica reaction is acceptable and provides reasonable assurance that these structures will continue to meet the relevant requirements; LBP-20-9, 92 NRC 218 (2020)
generally recognized codes and standards must be identified and evaluated to determine their applicability, adequacy, and sufficiency and supplemented or modified as necessary to ensure a quality product; LBP-20-9, 92 NRC 93 (2020)
quality assurance program must be implemented to ensure that structures, systems, and components important to safety will satisfactorily perform their safety functions; LBP-20-9, 92 NRC 93 (2020)
structures, systems, and components important to safety must be designed, fabricated, erected, and tested to quality standards commensurate with importance of their safety functions; LBP-20-9, 92 NRC 93 (2020)
where generally recognized codes and standards are used, they shall be identified and evaluated to determine their applicability, adequacy, and sufficiency and shall be supplemented or modified as necessary to ensure a quality product in keeping with the required safety function; LBP-20-9, 92 NRC 183 n.919 (2020)
- 10 C.F.R. Part 50, Appendix A, GDC 2
all structures, systems, and components important to safety must be designed to withstand effects of natural phenomena without loss of capability to perform their safety functions; LBP-20-9, 92 NRC 93-94 (2020)
applicant's proposed method to evaluate seismic Category I structures affected by alkali-silica reaction is acceptable and provides reasonable assurance that these structures will continue to meet the relevant requirements; LBP-20-9, 92 NRC 218 (2020)
- 10 C.F.R. Part 50, Appendix A, GDC 4
all structures, systems, and components important to safety must be designed to accommodate effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents, and be appropriately protected against dynamic effects; LBP-20-9, 92 NRC 94 (2020)
applicant's proposed method to evaluate seismic Category I structures affected by alkali-silica reaction is acceptable and provides reasonable assurance that these structures will continue to meet the relevant requirements; LBP-20-9, 92 NRC 218 (2020)
requirements are satisfied where ASR-affected structures will continue to comply with GDC 1 and 2, and where design-basis loads and load combinations include the dynamic effects associated with missiles, pipe whipping, and discharging fluids; LBP-20-9, 92 NRC 98 (2020)
- 10 C.F.R. Part 50, Appendix A, GDC 16 and 50
applicant's proposed method to evaluate seismic Category I structures affected by alkali-silica reaction is acceptable and provides reasonable assurance that these structures will continue to meet the relevant requirements; LBP-20-9, 92 NRC 218 (2020)
containment structures must maintain a leak-tight barrier against uncontrolled release of radioactivity to the environment and to ensure that containment design conditions important to safety are not exceeded; LBP-20-9, 92 NRC 94 (2020)
internal components of the containment structure must be able to accommodate calculated pressure and temperature conditions resulting from any loss-of-coolant accident; LBP-20-9, 92 NRC 94 (2020)

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- requirements are satisfied by demonstrating that the containment will continue to meet GDC 1 and 2 for all design-basis loads and load combinations including ASR under normal and accident conditions; LBP-20-9, 92 NRC 98 (2020)
- 10 C.F.R. Part 50, Appendix B
applicant's proposed method to evaluate seismic Category I structures affected by alkali-silica reaction is acceptable and provides reasonable assurance that these structures will continue to meet the relevant requirements; LBP-20-9, 92 NRC 218 (2020)
- design for all nuclear power plants must allow for certain structures, systems, and components to remain functional if safe shutdown earthquake ground motion occurs; LBP-20-9, 92 NRC 89 (2020)
- quality assurance requirements apply to all activities that affect safety-related functions of seismic Category I structures, systems, and components; LBP-20-9, 92 NRC 89 (2020)
- 10 C.F.R. Part 50, Appendix B, Criterion III
applicable regulatory requirements and section 50.2 defined design basis for structures, systems, and components covered by Appendix B must be correctly translated into specifications, drawings, procedures, and instructions; LBP-20-9, 92 NRC 94 (2020)
- applicant must address any adverse findings from confirmatory actions in the license condition in accordance with Corrective Action Program, which is subject to further NRC oversight; LBP-20-9, 92 NRC 99 (2020)
- seismic category I structures, systems, and components are described; LBP-20-9, 92 NRC 89 (2020)
- 10 C.F.R. Part 50, Appendix C
to determine financial qualification, NRC will require the minimum amount of information necessary for that purpose; CLI-20-12, 92 NRC 368 n.83 (2020)
- 10 C.F.R. Part 50, Appendix D, § II.A
certified design appendix incorporates by reference a generic design certification document submitted by the certified design applicant and contains information that is subject to NRC review and approval as part of the rulemaking process; LBP-20-8, 92 NRC 33 (2020)
- 10 C.F.R. Part 50, Appendix S
all nuclear power plants must be designed so that certain structures, systems, and components remain functional if the safe shutdown earthquake ground motion occurs; LBP-20-9, 92 NRC 89 (2020)
- 10 C.F.R. Part 51
license amendments that directly affect the actual operation of a facility remain subject to the environmental review requirements; CLI-20-12, 92 NRC 389 (2020)
- 10 C.F.R. 51.20(b)(9)
environmental impact statement is required in proceedings for away-from-reactor ISFSIs licensed pursuant to 10 C.F.R. Part 72; CLI-20-12, 92 NRC 387 (2020)
- 10 C.F.R. 51.22(b)
interested person may request that the Commission make the determination that special circumstances exist that warrant an exception to the categorical exclusion; CLI-20-12, 92 NRC 391 (2020)
- 10 C.F.R. 51.22(b), (c)
licensing actions that do not individually or collectively have a significant effect on the environment are categorically excluded from the need to prepare an NRC analysis under NEPA; CLI-20-12, 92 NRC 387 (2020)
- 10 C.F.R. 51.22(c)(9)
no additional NEPA analysis was necessary where a license amendment request falls within categorical exclusions; CLI-20-10, 92 NRC 331-32 (2020)
- 10 C.F.R. 51.22(c)(21)
applicability of categorical exclusion in license transfer proceeding is discussed; CLI-20-12, 92 NRC 365 (2020)
- categorical exclusion applies to approvals of direct or indirect transfers of any license issued by NRC and any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license; CLI-20-12, 92 NRC 401 (2020)
- deletions of administrative license conditions fall within the scope of the categorical exclusion; CLI-20-12, 92 NRC 389 (2020)
- NRC categorically excluded license transfer actions from the need to perform further environmental analysis; CLI-20-12, 92 NRC 387 (2020)

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- unless special circumstances are present, an environmental assessment or environmental impact statement is not required for approvals of direct or indirect transfers of any license issued by the NRC and for any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license; CLI-20-12, 92 NRC 387-88 (2020)
- 10 C.F.R. 51.22(c)(25)
no additional NEPA analysis was necessary where a license amendment request falls within categorical exclusions; CLI-20-10, 92 NRC 331-32 (2020)
- 10 C.F.R. 51.23
contention impermissibly challenged Continued Storage Rule insofar as it would have applicant describe impacts of spent fuel repackaging in its environmental report; CLI-20-14, 92 NRC 481 (2020)
environmental impacts resulting from disposal of concrete casks and storage pads from an ISFSI are generically described in the Continued Storage GEIS, which is incorporated into the Continued Storage Rule; CLI-20-14, 92 NRC 481 (2020)
impacts of continued spent fuel storage after the period of licensed operation including impacts associated with construction and operation of a dry transfer system are already described generically in the Continued Storage GEIS; CLI-20-14, 92 NRC 488 (2020)
- 10 C.F.R. 51.23(b)
Continued Storage Rule explicitly excuses applicant from providing a site-specific description of environmental impacts related to spent fuel storage that may occur after the initial 40-year license term; CLI-20-13, 92 NRC 461 n.30 (2020); CLI-20-14, 92 NRC 481 (2020)
environmental impacts described in NUREG-2157 are deemed incorporated into the environmental impact statement for an independent spent fuel storage installation; CLI-20-13, 92 NRC 461 n.31 (2020)
environmental impacts of an ISFSI beyond the term of its initial license are described generically in the Continued Storage GEIS; CLI-20-14, 92 NRC 481-82 (2020)
NRC's Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel evaluates environmental impacts of construction and waste repackaging beyond the proposed license term; CLI-20-13, 92 NRC 461 n.31 (2020)
- 10 C.F.R. 51.33
appropriate NRC Staff director may make a determination to prepare and issue a draft finding of no significant impact for public review and comment before making a final determination; CLI-20-8, 92 NRC 289 n.43 (2020)
- 10 C.F.R. 51.45
contention that environmental report and safety analysis report failed to consider adverse effect the independent spent fuel storage installation will have on groundwater is inadmissible; CLI-20-14, 92 NRC 475 (2020)
- 10 C.F.R. 51.52, Table S-4
generic effects of transportation and fuel waste for one power reactor is based on a survey of then-existing power plants; CLI-20-14, 92 NRC 480 n.101 (2020)
- 10 C.F.R. 51.53(a)
applicant may incorporate by reference into its environmental report any information from a prior environmental report that relates to the facility or site, or any information in a final environmental document previously prepared by the Staff relating to the facility; CLI-20-11, 92 NRC 337 (2020)
- 10 C.F.R. 51.53(c)(1)
regulation applies to each applicant for renewal of a license to operate a nuclear power plant under part 54; CLI-20-11, 92 NRC 348 (2020)
- 10 C.F.R. 51.53(c)(2)
assertion that environmental report fails to address accident risks posed by aging reactor equipment during a second license renewal term in violation of the National Environmental Policy Act is addressed; CLI-20-11, 92 NRC 337 (2020)
need for subsequent license renewal applicant to address reactor aging phenomena and their effects during the subsequent renewal period is discussed; CLI-20-11, 92 NRC 337 (2020)
requirements for the environmental report that must be submitted by any operating license renewal applicant are stated; CLI-20-11, 92 NRC 348 (2020)

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- 10 C.F.R. 51.53(c)(3)
applicability of regulation to subsequent license renewal is discussed; CLI-20-11, 92 NRC 338, 340-41, 342-43, 348-49 (2020)
regulation applies to subsequent license renewal applications and, for Category 1 issues, Table B-1 contains a generic assessment and codification of the impacts that are reasonably likely to occur during a subsequent license renewal term; CLI-20-11, 92 NRC 342-43 (2020)
- 10 C.F.R. 51.53(d)
environmental report requirement applies to applicant seeking a license amendment approving a license termination plan or decommissioning plan under section 50.82; CLI-20-12, 92 NRC 386 (2020)
regulation applies to applicants for a license amendment authorizing decommissioning activities; CLI-20-12, 92 NRC 386 (2020)
- 10 C.F.R. 51.73
NRC Staff is required to submit a request for comments on draft environmental impact statements; CLI-20-8, 92 NRC 289 (2020)
- 10 C.F.R. 51.80(b)(1)
environmental impacts described in NUREG-2157 are deemed incorporated into the environmental impact statement for an independent spent fuel storage installation; CLI-20-13, 92 NRC 461 n.31 (2020)
- 10 C.F.R. 51.92
supplementation of an environmental impact statement is required when the scope of the project has changed or there is significant new information; CLI-20-9, 92 NRC 306 (2020)
- 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1
NRC's findings on NEPA issues for license renewal of nuclear power reactors are addressed and each issue is assigned to a category; CLI-20-11, 92 NRC 337 n.11 (2020)
risk of operating with aging equipment is a Category 1 issue that environmental report can address by relying on the environmental findings contained in Table B-1; CLI-20-11, 92 NRC 337 (2020)
- 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 n.2
Category 2 issues require additional plant-specific review; CLI-20-11, 92 NRC 337 n.11 (2020)
generic analysis of Category 1 issues as specified in the table may be adopted in each plant-specific environmental review; CLI-20-11, 92 NRC 337 n.11 (2020)
- 10 C.F.R. 52.47(a)
COL applicant/licensee that references a certified design must provide a plant-specific final safety analysis report consisting of information in the generic DCD for that certified design, as modified and supplemented by any plant-specific departures or exemptions; LBP-20-8, 92 NRC 33-34 (2020)
- 10 C.F.R. 52.54(a)
standard reactor design is approved by the design certification rulemaking process, with the resulting design certification rule added to 10 C.F.R. Part 52 as an appendix; LBP-20-8, 92 NRC 33 (2020)
- 10 C.F.R. 52.63(a)(1)
exemption from certified reactor design must be based on a finding of the need to ensure adequate protection of the public health and safety and the existence of special circumstances; LBP-20-8, 92 NRC 34 (2020)
- 10 C.F.R. 52.63(b)(1)
combined license amendment applicant seeks exemption from elements of the AP1000 certified design; LBP-20-8, 92 NRC 32 (2020)
exemption from certified reactor design must be based on a finding of the need to ensure adequate protection of the public health and safety and the existence of special circumstances; LBP-20-8, 92 NRC 34 (2020)
- 10 C.F.R. 52.98(f)
exemption from certified reactor design must be based on a finding of the need to ensure adequate protection of the public health and safety and the existence of special circumstances; LBP-20-8, 92 NRC 34 (2020)
- 10 C.F.R. 52.103
contention admissibility standard that requires petitioner to show a genuine dispute on a material issue of law or fact specifically excludes proceedings under this regulation; LBP-20-8, 92 NRC 52 (2020)

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- 10 C.F.R. 52.103(b)
challenge to ITAAC in combined license amendment proceeding is outside the scope of the proceeding;
LBP-20-8, 92 NRC 52 (2020)
petitioner seeking to challenge acceptance criteria for a COL must establish a prima facie case that such
criteria have not been, or will not be, met; LBP-20-8, 92 NRC 52 n.55 (2020)
- 10 C.F.R. Part 52, Appendix D
API000 certified design is incorporated by reference into NRC regulations; CLI-20-18, 92 NRC 532
(2020)
- 10 C.F.R. Part 52, Appendix D, § I.C
COL applicant/licensee that references a certified design must provide a plant-specific final safety analysis
report consisting of information in the generic DCD for that certified design, as modified and
supplemented by any plant-specific departures or exemptions; LBP-20-8, 92 NRC 33-34 (2020)
- 10 C.F.R. Part 52, Appendix D, § II.D, E, & F
design certifications have design information allocated to one of three categories, Tier 1, Tier 2, and Tier
2*; LBP-20-8, 92 NRC 34 (2020)
- 10 C.F.R. Part 52, Appendix D, § II.E
Tier 2 information is design-related information contained in the generic DCD that is approved but not
certified by the design certification rule; LBP-20-8, 92 NRC 34 (2020)
- 10 C.F.R. Part 52, Appendix D, § VIII.A
exemption from certified reactor design must be based on a finding of the need to ensure adequate
protection of the public health and safety and the existence of special circumstances; LBP-20-8, 92
NRC 34 (2020)
- 10 C.F.R. Part 52, Appendix D, § VIII.B.5.a
license amendment is not required for departure from Tier 2 information unless there is a
change/departure from Tier 1 or Tier 2* information or any license technical specification; LBP-20-8,
92 NRC 34 n.7 (2020)
- 10 C.F.R. Part 52, Appendix D, § VIII.B.5.b-c
license amendment is not required for departure from Tier 2 information unless the Tier 2 information
change would have a negative effect on elements of the plant-specific DCD/FSAR per one of eight
criteria or a plant-specific DCD/FSAR-identified ex-vessel severe accident design feature under either of
two criteria; LBP-20-8, 92 NRC 34 n.7 (2020)
- 10 C.F.R. Part 52, Appendix D, § VIII.B.6
Tier 2* information is that portion of Tier 2 information, in the generic DCD, for which any
plant-specific change by a COL applicant/licensee mandates a license amendment but not an exemption;
LBP-20-8, 92 NRC 34 (2020)
- 10 C.F.R. 72.3
use of a 500-year floodplain in siting a facility is discussed; CLI-20-15, 92 NRC 506 (2020)
- 10 C.F.R. 72.24(d)(2)
application must evaluate structures, systems, and components designed to prevent and mitigate accidents;
CLI-20-14, 92 NRC 472 (2020)
- 10 C.F.R. 72.30(b)(2)(ii)
decommissioning cost estimate for independent spent fuel storage installation must contain an adequate
contingency factor; CLI-20-12, 92 NRC 370 (2020)
- 10 C.F.R. 72.30(b)-(c)
license transfer applicant for a reactor that has permanently ceased operating must demonstrate that it has
the financial qualifications to pay for managing the spent fuel on the site; CLI-20-12, 92 NRC 358
(2020)
license transfer application for independent spent fuel storage installation must provide reasonable
assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 358 (2020)
licensee must submit to NRC an independent spent fuel storage installation decommissioning funding plan
at least every 3 years with adjustments as necessary to account for changes in costs; CLI-20-12, 92
NRC 382 (2020)
- 10 C.F.R. 72.30(e)
inadmissibility of contention that ISFSI applicant had not provided reasonable assurance that it will have
the necessary funds for decommissioning is upheld; CLI-20-15, 92 NRC 502 (2020)

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- license application must provide financial assurance for decommissioning through prepayment, a surety, insurance, or other guarantee method, or an external sinking fund; CLI-20-15, 92 NRC 502 (2020)
- 10 C.F.R. 72.46(e)
contention that certified storage systems would not be suitable to store fuel as allowed by their design certifications is barred; CLI-20-15, 92 NRC 508-09 & n.126 (2020)
- 10 C.F.R. 72.50(a)
NRC must give written consent for a license transfer; CLI-20-12, 92 NRC 358 (2020)
- 10 C.F.R. 72.90(f)
evaluation of impacts of the proposed facility being in the 100-year floodplain is discussed; CLI-20-15, 92 NRC 506 (2020)
use of a 500-year floodplain in siting a facility is discussed; CLI-20-15, 92 NRC 506 (2020)
- 10 C.F.R. 72.103
license application must include information about site geology and seismology, including induced seismicity related to petroleum recovery; CLI-20-14, 92 NRC 484 (2020)
- 10 C.F.R. 72.103(a)(1)
acceptable investigative methods to ensure site stability are onsite foundation and geological investigation, literature review, and regional geological reconnaissance; CLI-20-14, 92 NRC 471 (2020)
applicant must analyze the entire region in which the proposed site is located for unstable geological characteristics; CLI-20-14, 92 NRC 471 (2020)
inadmissibility of contention that application failed to account for unstable geological characteristics and soil stability problems attributable to abandoned and orphan oil and gas wells in the region is upheld; CLI-20-14, 92 NRC 470 (2020)
purpose of investigative methods is to determine stability of the proposed site, not the region in general; CLI-20-14, 92 NRC 471 (2020)
- 10 C.F.R. 72.103(f)(1)
inadmissibility of contention that ISFSI application's discussion of the potential impacts from earthquakes induced by oil and gas activities is upheld; CLI-20-15, 92 NRC 502 (2020)
- 10 C.F.R. 72.122(b)(4)
contention that Environmental Report and SAR failed to consider the adverse effect the CISF will have on groundwater is inadmissible; CLI-20-14, 92 NRC 475 (2020)
- 10 C.F.R. 72.122(c)
regulation is a design requirement, compliance with which is addressed in the safety analysis report rather than in the emergency plan; CLI-20-14, 92 NRC 473 (2020)
structures, systems, and components important to safety must be designed and located so that they can continue to perform their safety functions effectively under credible fire and explosion exposure conditions; CLI-20-14, 92 NRC 472 (2020)
- 10 C.F.R. 72.240(a)
licensee may apply to renew a certificate if the certificate holder does not seek renewal; CLI-20-15, 92 NRC 507 (2020)
- 10 C.F.R. 72.240(c)
license renewal application requires a safety analysis report that includes design basis information, description of aging management program, and time-limited aging analysis; CLI-20-15, 92 NRC 507 (2020)
- 10 C.F.R. 73.56
references to regulatory requirements governing licensee programs for controlling access to nuclear power plants, including the use of background checks, are not relevant to license transfer proceeding; CLI-20-12, 92 NRC 394 (2020)
- 10 C.F.R. 100.11
seismic category I structures, systems, and components are described; LBP-20-9, 92 NRC 89 (2020)
- 36 C.F.R. 800.2(c)(2)
National Historic Preservation Act review should proceed as a partnership between federal agencies and affected stakeholders; CLI-20-8, 92 NRC 292 (2020)
- 36 C.F.R. 800.4(b)(1)
agencies are only required to make a reasonable and good faith effort to identify historic properties; CLI-20-8, 92 NRC 283 (2020)

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REGULATIONS

agency may not be able to identify all historic properties and hence a reasonable and good faith effort is required; CLI-20-8, 92 NRC 282 (2020)

new field investigation appears to be the only reasonable and good faith effort for identifying tribe cultural resources within the license area; CLI-20-8, 92 NRC 284 (2020)

NRC Staff must make a reasonable and good faith effort to carry out appropriate efforts to identify historic sites; CLI-20-8, 92 NRC 282 (2020)

40 C.F.R. 1502.21

agencies are to include essential information in an environmental impact statement unless the overall costs of obtaining it are unreasonable or the means to obtain it are not known; CLI-20-8, 92 NRC 282 n.4 (2020)

“unavailable” information includes information the cost of which to gather would be unreasonable in terms of both money and time; CLI-20-9, 92 NRC 308 (2020)

40 C.F.R. 1502.22

agency shall always make clear that there is incomplete or unavailable information in the environmental impact statement; CLI-20-9, 92 NRC 303-04, 307 (2020); CLI-20-11, 92 NRC 339 n.25, 346 n.72 (2020)

analysis of impacts in the face of unavailable information must be grounded in the rule of reason; CLI-20-9, 92 NRC 309-10 (2020)

Council on Environmental Quality regulations generally are not controlling on NRC, at least to the extent that they have not been incorporated by the agency into 10 C.F.R. Part 51; CLI-20-9, 92 NRC 299 (2020)

environmental impact statement was not deficient despite lacking information on deer movement because that information was not essential to selecting between alternatives; CLI-20-8, 92 NRC 292 n.56 (2020)

overall costs of obtaining incomplete or unavailable information in the environmental impact statement encompasses financial costs and other costs such as costs in terms of time (delay) and personnel; CLI-20-9, 92 NRC 304 (2020)

regulation is not binding on NRC Staff but can be a useful guide for determining what actions are reasonable under NEPA; CLI-20-9, 92 NRC 299 (2020)

where NRC Staff had not adequately identified Native American cultural resources on the site, staff has to show that the information was not reasonably available; CLI-20-9, 92 NRC 299 (2020)

LEGAL CITATIONS INDEX

STATUTES

- 28 U.S.C. § 1746
 although witness's declaration was neither executed under oath nor drafted strictly in compliance, absent objection the board waived any technical deficiency; LBP-20-10, 92 NRC 243 n.51 (2020)
- Administrative Procedure Act, 9(b), 5 U.S.C. § 558(c)
 immediately effective orders are expressly authorized; LBP-20-11, 92 NRC 429 (2020)
- Administrative Procedure Act, 5 U.S.C. § 558(c)(2)
 stay or revocation of a renewed license would only serve to reinstate the prior license; CLI-20-8, 92 NRC 272 n.95 (2020)
- Administrative Procedure Act, 5 U.S.C. § 706(2)(A), (C)
 agencies are prohibited from acting unlawfully; CLI-20-14, 92 NRC 469 (2020)
- Atomic Energy Act, 42 U.S.C. § 2011 et seq.
 individuals working for NRC licensees are protected from retaliation for reporting potential violations of the Energy Reorganization Act or the Atomic Energy Act; LBP-20-11, 92 NRC 425 (2020)
- Atomic Energy Act, 182, 42 U.S.C. § 2232
 requested license amendment would preclude a finding that it provides reasonable assurance of adequate protection of public health and safety; LBP-20-9, 92 NRC 74, 92 (2020)
- Atomic Energy Act, 184, 42 U.S.C. § 2234
 NRC must give written consent for a license transfer; CLI-20-12, 92 NRC 358 n.26 (2020)
- Atomic Energy Act, 189a, 42 U.S.C. § 2239(a)
 operation of a reactor requires a separate operating license application and review by NRC, which would also give rise to a hearing opportunity; CLI-20-16, 92 NRC 518 (2020)
- to intervene in a license transfer proceeding, petitioner must demonstrate standing by showing that its interest may be affected by the proceeding; CLI-20-7, 92 NRC 230 (2020)
- Atomic Energy Act, 189a(1)(A), 42 U.S.C. § 2239(a)(1)(A)
 in a license amendment proceeding, NRC must grant a hearing upon the request of any person whose interest may be affected by the proceeding; LBP-20-7, 92 NRC 9 (2020)
- Atomic Energy Act, 189a(2)(A), 42 U.S.C. § 2239(a)(2)(A)
 issuance of an amendment to a reactor license during pendency of a hearing on the amendment is allowed if NRC has first determined that the amendment involves no significant hazards consideration; LBP-20-9, 92 NRC 84 (2020)
- NRC may make a license amendment immediately effective upon a determination by the Commission that such amendment involves no significant hazards consideration; CLI-20-12, 92 NRC 354 n.3, 364 n.65 (2020); LBP-20-7, 92 NRC 13-14, 15 n.74 (2020)
- Energy Reorganization Act of 1974, 211, 42 U.S.C. § 5851
 protected activities include notifying an employer of an alleged violation of the ERA or the AEA, testifying, assisting, or participating in any other actions to carry out the purposes of the ERA or the AEA; LBP-20-11, 92 NRC 425 (2020)
- Energy Reorganization Act of 1974, 211(a)(1), 42 U.S.C. § 5851(a)(1) (2018)
 individuals working for NRC licensees are protected from retaliation for reporting potential violations of the Energy Reorganization Act or the Atomic Energy Act; LBP-20-11, 92 NRC 425 (2020)
- Energy Reorganization Act of 1974, § 211(b)(3)(c), 42 U.S.C. § 5851(b)(3)(C) (2018)
 prima facie showing of a violation of the ERA must show that the individual engaged in protected activity, an adverse employment action was taken, and the individual's protected activity was a contributing factor in the adverse employment action; LBP-20-11, 92 NRC 428 (2020)

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STATUTES

- National Historic Preservation Act, 54 U.S.C. §§ 300101-307108
NRC Staff must consult with Native American tribes on cultural resources; CLI-20-9, 92 NRC 297 (2020)
- National Historic Preservation Act, 54 U.S.C. § 302706 (West 2016)
NRC Staff is obliged under the NHPA to provide an opportunity for Indian tribes to consult meaningfully on the license renewal action; CLI-20-8, 92 NRC 270 (2020)
- National Historic Preservation Act, 54 U.S.C. § 306108 (West 2016)
NRC Staff must make a reasonable and good faith effort to identify historic properties, their significance, the potential effects of the license renewal on them, and potential mitigation measures; CLI-20-8, 92 NRC 270 (2020)
- Nuclear Energy Innovation and Modernization Act, Pub. L. 115-439, § 103, 132 Stat. 5565, 5572 (2019)
legislation seeking to streamline NRC safety review for new reactor applications suggests that efficient and effective review of these applications is a national priority; CLI-20-8, 92 NRC 293 (2020)
- Nuclear Waste Policy Act, 42 U.S.C. §§ 10143, 10222(a)(5)(A)
DOE cannot take title to spent nuclear fuel until after it has commenced operations at a permanent repository and that the ISFSI license, until granted, would not authorize DOE to do so; CLI-20-15, 92 NRC 499 (2020)

LEGAL CITATIONS INDEX OTHERS

- D.C. Circuit Handbook of Practice and Internal Procedures at 44
Court prefers that substantive arguments not be made in footnotes; LBP-20-7, 92 NRC 8 (2020)
- Fed. R. Evid. 403
licensing boards do not require strict rules of evidence to prevent presentation of unfair and prejudicial evidence to a jury; LBP-20-9, 92 NRC 115 (2020)
- Fed. R. Evid. 408(a)
admission of settlement negotiations into evidence in order to prove or disprove the validity or amount of a disputed claim is prohibited; CLI-20-9, 92 NRC 311 (2020)
- Fed. R. Evid. 408(b)
“another purpose” exception has been interpreted to include showing that a party acted in bad faith during the negotiations and establishing the intent of the settlement reached; CLI-20-9, 92 NRC 311 (2020)
statements made during negotiations may be admitted for another purpose, such as proving bias or prejudice; CLI-20-9, 92 NRC 311 (2020)
- Fed. R. Evid. 611(a)
court shall exercise reasonable control over the mode and order of interrogating witnesses and presenting evidence so as to make interrogation and presentation effective for ascertainment of truth; LBP-20-9, 92 NRC 115 n.385 (2020)
- Fed. R. Evid. 702
expert may be qualified to testify based on knowledge, skill, experience, training, or education; LBP-20-9, 92 NRC 110-11 (2020)

SUBJECT INDEX

ABEYANCE OF PROCEEDING

Commission has considered requests to suspend proceedings or hold them in abeyance in the exercise of its inherent supervisory powers over proceedings; CLI-20-17, 92 NRC 521 (2020)

ACCIDENTS

accidental canister breach during shipping or storage was not a credible scenario; CLI-20-15, 92 NRC 491 (2020)

appellant would have to show that ISFSI applicant's accident consequences analysis was unreasonable or that appellant's proposed methodology would be more appropriate; CLI-20-15, 92 NRC 491 (2020)

assertion that environmental report fails to address accident risks posed by aging reactor equipment during a second license renewal term in violation of the National Environmental Policy Act is addressed; CLI-20-11, 92 NRC 335 (2020)

contention that removal and replacement of Boraflex in spent fuel pool has potential for a significant increase in probability or consequences of an accident is inadmissible; LBP-20-7, 92 NRC 1 (2020)

facility need not be designed to withstand every conceivable accident, but it must be designed to withstand those found to be credible; CLI-20-14, 92 NRC 463 (2020)

ACCIDENTS, LOSS-OF-COOLANT

internal components of the containment structure must be able to accommodate calculated pressure and temperature conditions resulting from any loss-of-coolant accident; LBP-20-9, 92 NRC 58 (2020)

ADEQUATE EVIDENCE STANDARD

application of this standard to immediately effective orders strikes a reasonable balance between NRC's ability to protect public health, safety, or interest on the basis of reasonably trustworthy information while still providing affected parties with a measure of protection against arbitrary enforcement action by NRC; LBP-20-11, 92 NRC 409 (2020)

evidence of an intentional act or omission that causes a violation is insufficient to demonstrate adequate evidence of a violation if NRC Staff does not also show that the alleged wrongdoer knowingly engaged in deliberate misconduct; LBP-20-11, 92 NRC 409 (2020)

justification for immediate effectiveness of an enforcement order requires a showing that the order is based on more than mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 409 (2020)

standard is likened to probable cause; LBP-20-11, 92 NRC 409 (2020)

to establish evidence of a violation, NRC Staff need not show any evidence of intent, actual knowledge, or that the alleged wrongdoer knew his actions would cause a licensee to violate an NRC regulation; LBP-20-11, 92 NRC 409 (2020)

when facts and circumstances within NRC Staff's knowledge, of which it has reasonably trustworthy information, are sufficient to warrant a person of reasonable caution to believe that the charges specified in the order are true and that the order is necessary to protect the public health, safety or interest, adequate evidence exists; LBP-20-11, 92 NRC 409 (2020)

when immediate effectiveness of an enforcement order has been challenged, NRC Staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds for the order and immediate effectiveness is warranted; LBP-20-11, 92 NRC 409 (2020)

ADEQUATE PROTECTION STANDARD

NRC need not demand that nuclear power plants present no risk of harm to satisfy the adequate protection standard; LBP-20-9, 92 NRC 58 (2020)

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ADJUDICATORY PROCEEDINGS

adjudications are not the appropriate forum for resolving complaints about NRC Staff conduct; CLI-20-17, 92 NRC 521 (2020)

although adjudicatory hearings can provide for more rigorous public scrutiny of a NEPA environmental review than a public comment period, they are also much more restrictive; CLI-20-9, 92 NRC 295 (2020)

board has an inquisitorial role in the development of a complete record in NRC proceedings; CLI-20-9, 92 NRC 295 (2020)

every agency licensing action does not throw open an opportunity to engage in a free-ranging inquiry into licensee's character; LBP-20-7, 92 NRC 1 (2020)

examining NRC Staff's rationale for docketing an application is not within the scope of NRC adjudicatory proceedings; CLI-20-17, 92 NRC 521 (2020)

issue for decision is not whether NRC Staff performed well, but whether the license application raises health and safety concerns; CLI-20-17, 92 NRC 521 (2020)

purpose of NRC adjudicatory hearings is to consider claims of deficiencies in a license application; CLI-20-17, 92 NRC 521 (2020)

See also Abeyance of Proceeding; Combined License Amendment Proceedings; Combined License Proceedings; Evidentiary Hearings; Hearing Requests; Hearing Rights; Independent Spent Fuel Storage Installation Proceedings; License Amendment Proceedings; License Transfer Proceedings; Notice of Hearing; Subpart L Proceedings

ADMINISTRATIVE PROCEDURE ACT

agencies are prohibited from acting unlawfully; CLI-20-14, 92 NRC 463 (2020)

agency violates APA if it treats a guidance document as binding, either on itself or on the regulated community; LBP-20-12, 92 NRC 431 (2020)

immediately effective orders are expressly authorized; LBP-20-11, 92 NRC 409 (2020)

stay or revocation of a renewed license would only serve to reinstate the prior license; CLI-20-8, 92 NRC 255 (2020)

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

ACRS reviews and reports on safety studies and applications for construction permits and facility operating licenses; LBP-20-9, 92 NRC 58 (2020)

AFFIDAVITS

although witness's declaration was neither executed under oath nor drafted strictly in compliance, absent objection the board waived any technical deficiency; LBP-20-10, 92 NRC 235 (2020)

evidence in affidavit supporting motion to reopen must be of such quality as to be admissible into evidence at an evidentiary hearing; LBP-20-10, 92 NRC 235 (2020)

motion to reopen a closed evidentiary record must be accompanied by affidavits that set forth the factual and/or technical bases for movant's claim; LBP-20-12, 92 NRC 431 (2020)

motion to set aside immediate effectiveness of an enforcement order must state with particularity the reasons why the order is not based on adequate evidence and must be accompanied by affidavits or other evidence relied on; LBP-20-11, 92 NRC 409 (2020)

petitioner must attach an affidavit from experts in the disciplines appropriate to the issues raised or from competent individuals with knowledge of the facts alleged that separately addresses each of these criteria, explaining how each has been satisfied; LBP-20-10, 92 NRC 235 (2020)

petitioner's lawyer repeating allegations of undisclosed principals is not sufficient to reopen the record; LBP-20-10, 92 NRC 235 (2020)

AGING MANAGEMENT

adequacy of licensee's aging management program for buried pipes and tanks was the subject of an evidentiary hearing at the time the operating license was renewed; CLI-20-12, 92 NRC 351 (2020)

assertion that environmental report fails to address accident risks posed by aging reactor equipment during a second license renewal term in violation of the National Environmental Policy Act is addressed; CLI-20-11, 92 NRC 335 (2020)

inadmissibility of contention that impacts of storage containers used beyond their licensing period should be considered is upheld; CLI-20-15, 92 NRC 491 (2020)

need for subsequent license renewal applicant to address reactor aging phenomena and their effects during the subsequent renewal period is discussed; CLI-20-11, 92 NRC 335 (2020)

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risk of operating with aging equipment is a Category 1 issue that environmental report can address by relying on the environmental findings contained in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1; CLI-20-11, 92 NRC 335 (2020)

AIRCRAFT CRASHES

inadmissibility of contention that emergency response plan for ISFSI facility was deficient in failing to account for aircraft crashes and other hazards is upheld; CLI-20-14, 92 NRC 463 (2020)

probability of an aircraft crash into an ISFSI is addressed; CLI-20-14, 92 NRC 463 (2020)

ALKALI-SILICA REACTION

chemical prestressing is discussed; LBP-20-9, 92 NRC 58 (2020)

contention that test program for progression of ASR progression has yielded data that are not representative and proposed monitoring, acceptance criteria, and inspection intervals are not adequate is resolved; LBP-20-9, 92 NRC 58 (2020)

damage rating index is discussed; LBP-20-9, 92 NRC 58 (2020)

intervenor's testimony on prototype scaling supports its existing arguments on lack of representativeness and its implications for the large-scale ASR testing program; LBP-20-9, 92 NRC 58 (2020)

lack of any specific directive as to when additional inspections must be performed on seismic Category I structures creates a reasonable possibility of a violation of the maintenance rule; LBP-20-9, 92 NRC 58 (2020)

modulus of elasticity is discussed; LBP-20-9, 92 NRC 58 (2020)

monitoring interval for Tier 3 areas fails to provide reasonable assurance that operation of the nuclear power plant will not endanger the health and safety of the public; LBP-20-9, 92 NRC 58 (2020)

requirements are satisfied by demonstrating that the containment will continue to meet GDC 1 and 2 for all design-basis loads and load combinations including ASR under normal and accident conditions; LBP-20-9, 92 NRC 58 (2020)

requirements are satisfied where ASR-affected structures will continue to comply with General Design Criteria 1 and 2, and where design-basis loads and load combinations include the dynamic effects associated with missiles, pipe whipping, and discharging fluids; LBP-20-9, 92 NRC 58 (2020)

AMENDMENT OF CONTENTIONS

dispositive issue is not whether there are differences between applicant's environmental report and the draft EIS, but whether petitioner's amended contention is based on new facts not previously available; LBP-20-10, 92 NRC 235 (2020)

following the intervention petition deadline, participants may still file new or amended environmental contentions challenging NRC Staff's environmental review documents if timeliness requirements are met; CLI-20-8, 92 NRC 255 (2020)

good cause for filing new or amended contentions can be demonstrated if a contention is based on information that was not previously available, is materially different from information previously available, and has been submitted in a timely fashion based on the availability of the subsequent information; CLI-20-8, 92 NRC 255 (2020)

new or amended contentions must be based on information not previously available; LBP-20-8, 92 NRC 23 (2020)

new or amended contentions will not be entertained unless the presiding officer determines that there is good cause for the late filing; CLI-20-8, 92 NRC 255 (2020)

AMENDMENT OF HEARING REQUESTS

section 2.309(c)(1) does not provide for motions to supplement a hearing request; CLI-20-12, 92 NRC 351 (2020)

ANSWER BRIEF

party may file an answer in support of or in opposition to a motion for reconsideration; LBP-20-12, 92 NRC 431 (2020)

APPEALS

adequate evidence standard is likened to probable cause; LBP-20-11, 92 NRC 409 (2020)

appeal of a decision wholly denying a request for hearing is a matter of right; CLI-20-11, 92 NRC 335 (2020)

appellant would have to show that ISFSI applicant's accident consequences analysis was unreasonable or that appellant's proposed methodology would be more appropriate; CLI-20-15, 92 NRC 491 (2020)

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argument that license amendment application was incomplete is impermissibly raised for the first time on appeal; CLI-20-18, 92 NRC 530 (2020)

arguments raised for the first time on appeal will not be considered; CLI-20-11, 92 NRC 335 (2020)
because the board granted petition to intervene, its appeal comes under section 2.341 rather than section 2.311(c); CLI-20-15, 92 NRC 491 (2020)

Commission generally defers to the board on matters of contention admissibility and standing unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-11, 92 NRC 335 (2020); CLI-20-14, 92 NRC 463 (2020)

in consideration of petitioner's pro se status, Commission accepts board's referral and consider the pleading as an appeal; CLI-20-10, 92 NRC 327 (2020)

it is not enough for appellant to simply repeat the arguments it made before the board and hope for a different result from the Commission; CLI-20-15, 92 NRC 491 (2020)

new argument presented on appeal would be sufficient grounds for rejection; CLI-20-15, 92 NRC 491 (2020)

NRC generally does not allow entirely new arguments to be presented in a reply; CLI-20-12, 92 NRC 351 (2020)

petition claiming that the board's findings of fact are clearly erroneous requires that petitioner show that the board's findings are not even plausible in light of the record viewed in its entirety; CLI-20-9, 92 NRC 295 (2020)

petitioner whose hearing request has been wholly denied is allowed to appeal; CLI-20-13, 92 NRC 457 (2020); CLI-20-14, 92 NRC 463 (2020); CLI-20-18, 92 NRC 530 (2020)

purpose of appeals is not to attempt to cure deficient contentions by presenting arguments and evidence never provided to the board; CLI-20-11, 92 NRC 335 (2020)

APPEALS, INTERLOCUTORY

because petitioner was granted a hearing on one contention, any appeal of the board's rejection of its other contentions would be considered interlocutory; CLI-20-15, 92 NRC 491 (2020)

APPELLATE REVIEW

Commission considers the factors of 10 C.F.R. 2.341(b)(4)(i)-(v) in discretionary grant of a petition for review, giving due weight to the existence of a substantial question; CLI-20-8, 92 NRC 255 (2020)

Commission defers to the board in its procedural case management decisions; CLI-20-9, 92 NRC 295 (2020)

Commission generally defers to board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-8, 92 NRC 255 (2020); CLI-20-13, 92 NRC 457 (2020); CLI-20-15, 92 NRC 491 (2020); CLI-20-18, 92 NRC 530 (2020)

Commission gives the highest deference to findings of fact that turn on witness credibility; CLI-20-9, 92 NRC 295 (2020)

Commission is highly deferential to board conclusions, particularly where much of the evidence is subject to interpretation; CLI-20-8, 92 NRC 255 (2020); CLI-20-9, 92 NRC 295 (2020)

Commission may grant review, in its discretion, where petitioner raises a substantial question with respect to the considerations in 10 C.F.R. 2.341(b)(4); CLI-20-9, 92 NRC 295 (2020)

Commission reviews a board's legal rulings de novo, but only takes review where petitioner shows that the board's rulings on a substantial and important question of law is without precedent or contrary to precedent; CLI-20-9, 92 NRC 295 (2020)

petition for discretionary review must demonstrate that a necessary legal conclusion that the board made is without governing precedent, is a departure from or contrary to established law, or raises a substantial and important question of law, policy, or discretion; CLI-20-9, 92 NRC 295 (2020)
standard of clear error for overturning a board's factual findings following a merits hearing is high; CLI-20-8, 92 NRC 255 (2020)

whether NRC Staff's attempts to consult with a tribe adequately fulfilled its NHPA consultation duties is a question of fact subject to the clear error standard of review; CLI-20-9, 92 NRC 295 (2020)

APPLICANTS

applicant bears the burden of proof for all matters on which an intervenor has satisfied its burden of going forward, requiring applicant to show by a preponderance of the evidence that it is entitled to the applied-for license; LBP-20-9, 92 NRC 58 (2020)

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APPROVAL OF LICENSE

license amendment application will lack NRC's final approval until and unless the Commission concludes the adjudication in applicants' favor; CLI-20-12, 92 NRC 351 (2020)

NRC Staff is expected to promptly issue approval or denial of license transfer requests even if a hearing has been requested; CLI-20-7, 92 NRC 225 (2020)

NRC Staff may issue its approval or denial of a license transfer application, consistent with its findings in its Safety Evaluation Report, during a pending adjudicatory proceeding; CLI-20-12, 92 NRC 351 (2020)

ATOMIC ENERGY ACT

for the hearing opportunity afforded interested persons to remain meaningful, NRC Staff must turn square corners in ensuring hearing requestors have appropriate access to applicant information provided to NRC for use in the license application review process; LBP-20-8, 92 NRC 23 (2020)

license amendment may be issued on an immediately effective basis upon a determination that the amendment involves no significant hazards consideration, notwithstanding the pendency of a hearing request; CLI-20-12, 92 NRC 351 (2020)

NRC may issue and make immediately effective any amendment to an operating license; LBP-20-7, 92 NRC 1 (2020)

NRC must grant a hearing upon the request of any person whose interest may be affected by the proceeding; LBP-20-7, 92 NRC 1 (2020)

requested license amendment would preclude a finding that it provides reasonable assurance of adequate protection of public health and safety; LBP-20-9, 92 NRC 58 (2020)

to intervene in a license transfer proceeding, petitioner must demonstrate standing by showing that its interest may be affected by the proceeding; CLI-20-7, 92 NRC 225 (2020)

AUXILIARY BUILDING

combined license amendment applicant seeks to modify minimum seismic gap requirements between part of opposite-facing walls of the nuclear island-based auxiliary building and the annex building to accommodate as-built localized nonconformances; LBP-20-8, 92 NRC 23 (2020)

BRIEFS

absent extraordinary circumstances, argument raised in a footnote will not be considered; LBP-20-7, 92 NRC 1 (2020)

See also Answer Briefs; Reply Briefs

BRIEFS, APPELLATE

appellant must do more than recite its prior positions in a proceeding or state its general disagreement with a decision's result; CLI-20-11, 92 NRC 335 (2020)

participant may not raise new arguments on appeal; CLI-20-14, 92 NRC 463 (2020)

BURDEN OF PERSUASION

assertions of standing are construed in favor of petitioners, but petitioner has the burden of establishing each element of contention admissibility; CLI-20-15, 92 NRC 491 (2020)

intervention petitioner has the burden to demonstrate that standing requirements are met; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

to set aside immediate effectiveness of an enforcement order, alleged wrongdoer bears the burden of going forward with evidence that the order is not based on adequate evidence but on mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 409 (2020)

under contention-pleading rules, it is petitioner's burden to explain why a contention should be admitted; CLI-20-14, 92 NRC 463 (2020)

when an immediate effectiveness determination is challenged, NRC Staff must satisfy a two-part test; LBP-20-11, 92 NRC 409 (2020)

when immediate effectiveness of an enforcement order has been challenged, NRC Staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds for the order and immediate effectiveness is warranted; LBP-20-11, 92 NRC 409 (2020)

BURDEN OF PROOF

although petitioner need not prove its contention at the admission stage, mere notice pleading is insufficient; LBP-20-7, 92 NRC 1 (2020); LBP-20-10, 92 NRC 235 (2020)

SUBJECT INDEX

applicant bears the burden of proof for all matters on which an intervenor has satisfied its burden of going forward, requiring applicant to show by a preponderance of the evidence that it is entitled to the applied-for license; LBP-20-9, 92 NRC 58 (2020)

applicant carries the burden of proof on the issue whether there is reasonable assurance that operation of plant, as modified by the license amendment request, will not endanger the health and safety of the public; LBP-20-9, 92 NRC 58 (2020)

for safety-related matters, there is no burden on NRC Staff, but a board will consider Staff's safety evaluation in reaching its determination; LBP-20-9, 92 NRC 58 (2020)

intervenors are not required to prove their case at the contention admission stage, nor are they required to provide an exhaustive list of possible bases at that time; LBP-20-9, 92 NRC 58 (2020)

once intervenor has introduced sufficient evidence to establish a prima facie case, the burden shifts to applicant who, as part of his overall burden of proof, must provide a sufficient rebuttal to satisfy the board that it should reject the contention; LBP-20-9, 92 NRC 58 (2020)

standards do not permit reasonable inferences, but require actual knowledge, and there is no burden on the alleged wrongdoer to refute anything with clear and convincing evidence; LBP-20-11, 92 NRC 409 (2020)

ultimate burden of proof on whether a permit or license should be issued is on applicant, but intervenor has the burden of going forward with evidence to buttress its contention; LBP-20-9, 92 NRC 58 (2020)

BURIED STRUCTURES, SYSTEMS, AND COMPONENTS

adequacy of licensee's aging management program for buried pipes and tanks was the subject of an evidentiary hearing at the time the operating license was renewed; CLI-20-12, 92 NRC 351 (2020)

CASE MANAGEMENT

board may hold a prehearing conference to consider matters including simplification, clarification, and specification of issues; LBP-20-9, 92 NRC 58 (2020)

Commission defers to the board in its procedural case management decisions; CLI-20-9, 92 NRC 295 (2020)

court shall exercise reasonable control over the mode and order of interrogating witnesses and presenting evidence so as to make interrogation and presentation effective for ascertainment of truth; LBP-20-9, 92 NRC 58 (2020)

if truth and fairness are not to be sacrificed, the judge must exert substantial control over proceedings; LBP-20-9, 92 NRC 58 (2020)

initial scheduling order is designed to ensure proper case management of the proceeding; LBP-20-9, 92 NRC 58 (2020)

licensing boards have considerable discretion in their management of adjudicatory proceedings; CLI-20-8, 92 NRC 255 (2020)

licensing boards may exercise broad discretion to limit oral argument or to allow it at all; LBP-20-10, 92 NRC 235 (2020)

presiding officer has broad authority to regulate the conduct of proceedings; LBP-20-9, 92 NRC 58 (2020)

presiding officers may issue scheduling orders, delineating rules applicable to the proceeding at hand; LBP-20-9, 92 NRC 58 (2020)

ruling on motions, making findings of fact, and holding status conferences are within the scope of a board's core responsibilities; CLI-20-9, 92 NRC (2020); CLI-20-9, 92 NRC 295 (2020)

CATEGORICAL EXCLUSION

applicability in license transfer proceeding is discussed; CLI-20-12, 92 NRC 351 (2020)

deletions of administrative license conditions fall within the scope of the categorical exclusion; CLI-20-12, 92 NRC 351 (2020)

exclusion applies to approvals of direct or indirect transfers of any license issued by NRC and any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license; CLI-20-12, 92 NRC 351 (2020)

interested person may request that the Commission make the determination that special circumstances exist that warrant an exception to the categorical exclusion; CLI-20-12, 92 NRC 351 (2020)

licensing actions that do not individually or collectively have a significant effect on the environment are categorically excluded from the need to prepare an NRC analysis under NEPA; CLI-20-12, 92 NRC 351 (2020)

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no additional NEPA analysis was necessary where a license amendment request falls within categorical exclusions; CLI-20-10, 92 NRC 327 (2020)

NRC categorically excluded license transfer actions from the need to perform further environmental analysis; CLI-20-12, 92 NRC 351 (2020)

CERTIFICATE OF COMPLIANCE

licensee may apply to renew a certificate if the certificate holder does not seek renewal; CLI-20-15, 92 NRC 491 (2020)

COMBINED LICENSE AMENDMENT PROCEEDINGS

absent situations involving obvious potential for offsite consequences, petitioner must allege some specific injury in fact that will result from the action taken; LBP-20-8, 92 NRC 23 (2020)

applicant seeks to modify minimum seismic gap requirements between part of opposite-facing walls of the nuclear island-based auxiliary building and the annex building to accommodate as-built localized nonconformances; LBP-20-8, 92 NRC 23 (2020)

challenge to ITAAC in combined license amendment proceeding is outside the scope of the proceeding; LBP-20-8, 92 NRC 23 (2020)

challenges to current licensing basis of a plant, rather than to the requested facility modification, are not within the scope of a license amendment proceeding and are properly lodged as matters warranting enforcement action; LBP-20-8, 92 NRC 23 (2020)

decisions regarding standing in prior license amendment proceedings relating to a facility are not dispositive for a subsequent proceeding but standing was granted where both implicated Tier 1 information changes; LBP-20-8, 92 NRC 23 (2020)

intervention petitioner in a license amendment proceeding must assert an injury-in-fact associated with the challenged license amendment, not simply a general objection to the facility; LBP-20-8, 92 NRC 23 (2020)

intervention petitioner must establish a plausible nexus between challenged license amendments and petitioner's asserted harm; LBP-20-8, 92 NRC 23 (2020)

intervention petitioner must indicate how the license amendments at issue would increase risk of offsite release of radioactive fission products; LBP-20-8, 92 NRC 23 (2020)

no significant hazards consideration determination by NRC Staff associated with license amendment request is not subject to challenge in an adjudicatory proceeding; LBP-20-8, 92 NRC 23 (2020)

petitioner argues that because license application was incomplete, the standard for an admissible contention is lowered and contention should be admitted; CLI-20-18, 92 NRC 530 (2020)

COMBINED LICENSE AMENDMENTS

amendment is not required for departure from Tier 2 information unless that information change would have a negative effect on elements of the plant-specific DCD/FSAR per one of eight criteria or a plant-specific DCD/FSAR-identified ex-vessel severe accident design feature under either of two criteria; LBP-20-8, 92 NRC 23 (2020)

amendment is not required for departure from Tier 2 information unless there is a change/departure from Tier 1 or Tier 2* information or any license technical specification; LBP-20-8, 92 NRC 23 (2020)

applicant seeks exemption from elements of the AP1000 certified design; LBP-20-8, 92 NRC 23 (2020)

argument that license amendment application was incomplete is impermissibly raised for the first time on appeal; CLI-20-18, 92 NRC 530 (2020)

license amendment applicant must satisfy requirements of 10 C.F.R. 50.90 and demonstrate that a requested amendment meets all applicable regulatory requirements and acceptance criteria and does not otherwise harm public health and safety or common defense and security; LBP-20-8, 92 NRC 23 (2020)

NRC Staff has authority to issue combined license amendments and corresponding exemption following no significant hazards consideration determination and safety evaluation; LBP-20-8, 92 NRC 23 (2020)

Tier 2* information is that portion of Tier 2 information, in the generic DCD, for which any plant-specific change by a combined license applicant/licensee mandates a license amendment but not an exemption; LBP-20-8, 92 NRC 23 (2020)

COMBINED LICENSE PROCEEDINGS

fifty-mile proximity presumption applies to proceedings for issuance or renewal of a reactor construction permit/operating license under 10 C.F.R. Part 50 or an early site permit/COL under 10 C.F.R. Part 52; LBP-20-8, 92 NRC 23 (2020)

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COMBINED LICENSES

applicant/licensee that references a certified design must provide a plant-specific final safety analysis report consisting of information in the generic DCD for that certified design, as modified and supplemented by any plant-specific departures or exemptions; LBP-20-8, 92 NRC 23 (2020)
petitioner seeking to challenge acceptance criteria for a COL must establish a prima facie case that such criteria have not been, or will not be, met; LBP-20-8, 92 NRC 23 (2020)

COMPLIANCE

license condition must be precisely drawn so that the verification of compliance becomes a largely ministerial rather than an adjudicatory act; LBP-20-12, 92 NRC 431 (2020)

CONCRETE

board must determine, based on preponderance of the evidence, whether applicant has established its position that the possibility of delamination of concrete at the plant is sufficiently understood and monitored such that continued operation will not endanger public health and safety; LBP-20-9, 92 NRC 58 (2020)
composition, production, prestressing, in-plane expansion, reinforcement anchorage and bars, and petrographic evaluation are discussed; LBP-20-9, 92 NRC 58 (2020)
cracking indexes and width summation are discussed; LBP-20-9, 92 NRC 58 (2020)
physical and chemical properties of concrete are fairly encompassed by the description in the admissible contentions; LBP-20-9, 92 NRC 58 (2020)

CONFIRMATORY ORDER

applicant must address any adverse findings from confirmatory actions in the license condition in accordance with Corrective Action Program, which is subject to further NRC oversight; LBP-20-9, 92 NRC 58 (2020)

CONSENT

NRC must give written consent for a license transfer; CLI-20-12, 92 NRC 351 (2020)

CONSIDERATION OF ALTERNATIVES

alternative compliance methods can be reviewed by the board to determine reasonable assurance that structures, systems, and components are capable of fulfilling their intended functions; LBP-20-9, 92 NRC 58 (2020)
existence of reasonable but unexamined alternatives renders an environmental impact statement inadequate; CLI-20-14, 92 NRC 463 (2020)
NRC accords substantial weight to preferences of applicant and/or sponsor in siting and design of the project if the application is not so artificially narrow as to circumvent the requirement that reasonable alternatives be considered; CLI-20-15, 92 NRC 491 (2020)

CONSTRUCTION OF MEANING

intervention petitions are to be construed in favor of petitioner when determining standing; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

CONSTRUCTION OF TERMS

“adequate protection” is synonymous with no undue risk; LBP-20-9, 92 NRC 58 (2020)
reasonable assurance standard is not quantified as equivalent to a 95% (or any other percent) confidence level, but is based on sound technical judgment of the particulars of a case and on compliance with NRC regulations; LBP-20-9, 92 NRC 58 (2020)

CONSULTATION DUTY

NRC Staff is obliged under NHPA to provide an opportunity for Native American tribes to consult meaningfully on the license renewal action; CLI-20-8, 92 NRC 255 (2020); CLI-20-9, 92 NRC 295 (2020)
whether NRC Staff’s attempts to consult with a tribe adequately fulfilled its NHPA consultation duties is a question of fact subject to the clear error standard of review; CLI-20-9, 92 NRC 295 (2020)

CONTAINMENT DESIGN

internal components of the structure must be able to accommodate calculated pressure and temperature conditions resulting from any loss-of-coolant accident; LBP-20-9, 92 NRC 58 (2020)
requirements are satisfied by demonstrating that the containment will continue to meet GDC 1 and 2 for all design-basis loads and load combinations including alkali-silica reaction under normal and accident conditions; LBP-20-9, 92 NRC 58 (2020)

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structures must maintain a leak-tight barrier against uncontrolled release of radioactivity to the environment and to ensure that design conditions important to safety are not exceeded; LBP-20-9, 92 NRC 58 (2020)

CONTAINMENT SYSTEMS

licensee must adopt strategies that provide reasonable protection for the associated equipment from external events; LBP-20-12, 92 NRC 431 (2020)

CONTENTIONS

admission by itself does not satisfy the burden of going forward; LBP-20-9, 92 NRC 58 (2020)

adoption of a contention by petitioner who has not independently gained party status in a proceeding is addressed; CLI-20-12, 92 NRC 351 (2020)

as long as facts relied on by intervenor fall within the envelope of the contention, they are properly before the board; LBP-20-9, 92 NRC 58 (2020)

board did not identify an exhaustive list of possible bases when it admitted a reformulated contention; LBP-20-9, 92 NRC 58 (2020)

board may hold a prehearing conference to consider matters including simplification, clarification, and specification of issues; LBP-20-9, 92 NRC 58 (2020)

boards have authority to reformulate contentions; LBP-20-9, 92 NRC 58 (2020)

discovery on contention's subject matter can be obtained once the contention is admitted for litigation; LBP-20-8, 92 NRC 23 (2020)

environmental contentions submitted in an intervention petition are based on applicant's environmental report; CLI-20-8, 92 NRC 255 (2020); LBP-20-10, 92 NRC 235 (2020)

if petitioners believe that an application is incomplete in some way, they may file a contention to that effect; CLI-20-17, 92 NRC 521 (2020)

incorporation by reference of another petitioner's issues by petitioner who has not submitted at least one admissible issue of its own is not allowed; CLI-20-12, 92 NRC 351 (2020)

information offered in evidence, even if not specifically stated in the original contention and bases, may be relevant if it falls within the envelope, reach, or focus of the contention when read with the original bases offered for it; LBP-20-9, 92 NRC 58 (2020)

intervenor has the initial burden of going forward; LBP-20-9, 92 NRC 58 (2020)

intervenor may not freely change the focus of an admitted contention at will to add a host of new issues and objections that could have been raised at the outset; LBP-20-9, 92 NRC 58 (2020)

intervenor must provide probative evidence or expert testimony; LBP-20-9, 92 NRC 58 (2020)

intervenors must offer specific contentions on material issues, supported by alleged facts or expert opinion; CLI-20-11, 92 NRC 335 (2020)

issue that test program for progression of alkali-silica reaction has yielded data that are not representative and that proposed monitoring, acceptance criteria, and inspection intervals are not adequate is resolved; LBP-20-9, 92 NRC 58 (2020)

petitioners have an ironclad obligation to examine relevant application documents to uncover information that might prompt a contention; LBP-20-10, 92 NRC 235 (2020)

petitioners must examine the application and other publicly available documents and file contentions within the initial 60-day time frame to intervene; CLI-20-17, 92 NRC 521 (2020)

physical and chemical properties of concrete are fairly encompassed by the description in the admissible contentions; LBP-20-9, 92 NRC 58 (2020)

reach of a contention necessarily hinges on its terms coupled with its stated bases; LBP-20-9, 92 NRC 58 (2020)

supporting information for a contention should be submitted when the contention is filed; CLI-20-11, 92 NRC 335 (2020)

to show a genuine dispute with applicant, contention must include references to disputed portions of the application that and supporting reasons for each dispute; CLI-20-11, 92 NRC 335 (2020)

ultimate burden of proof on whether a permit or license should be issued is on applicant, but intervenor has the burden of going forward with evidence to buttress its contention; LBP-20-9, 92 NRC 58 (2020)

when intervenor's testimony or exhibits are alleged to fall outside the scope of an admitted contention, licensing boards must decide whether the proffered evidence is within the reasonably inferred bounds of the admitted contention; LBP-20-9, 92 NRC 58 (2020)

See also Amendment of Contentions

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CONTENTIONS, ADMISSIBILITY

absent strong support for a claim that difficulties at other plants run by a corporate parent will affect the plant at issue before the Commission, Commission is unwilling to use its hearing process as a forum for a wide-ranging inquiry into the corporate parent's general activities across the country; CLI-20-12, 92 NRC 351 (2020)

allegation of wrongdoing regarding timeliness of licensee's reporting to NRC on stability of the nuclear island basemat is inadmissible; LBP-20-8, 92 NRC 23 (2020)

allowing new claims in a reply would defeat the contention-filing deadline and unfairly deprive other participants an opportunity to rebut the new claims; LBP-20-10, 92 NRC 235 (2020)

although Commission has jurisdiction to reopen the proceeding and admit the contention, it refers the motion to the board for consideration of these matters initially; CLI-20-14, 92 NRC 463 (2020)

although contention was within the scope of the proceeding, it failed to factually support and dispute specific portions of the license amendment request concerning emergency response; CLI-20-10, 92 NRC 327 (2020)

although petitioner need not prove its contention at the admission stage, mere notice pleading is insufficient; LBP-20-7, 92 NRC 1 (2020); LBP-20-10, 92 NRC 235 (2020)

appellant would have to show that ISFSI applicant's accident consequences analysis was unreasonable or that appellant's proposed methodology would be more appropriate; CLI-20-15, 92 NRC 491 (2020)

argument that the license cannot be issued because NRC lacks the authority to approve a project that might be illegal is dismissed; CLI-20-15, 92 NRC 491 (2020)

assertion that environmental report fails to address accident risks posed by aging reactor equipment during a second license renewal term in violation of the National Environmental Policy Act is addressed; CLI-20-11, 92 NRC 335 (2020)

assertion that environmental report fails to address significance of the declining amount of external operating experience due to the early shutdown or retirement of a significant portion of currently operating fleet of reactors is speculative, incorrect, and thus inadmissible; CLI-20-11, 92 NRC 335 (2020)

assertions of standing are construed in favor of petitioners, but petitioner has the burden of establishing each element of contention admissibility; CLI-20-15, 92 NRC 491 (2020)

assertions that foundation settlement was not considered in the plant design are unsupported and do not show a genuine dispute; LBP-20-8, 92 NRC 23 (2020)

board admits a contention, not its bases; LBP-20-9, 92 NRC 58 (2020)

board may consider readily apparent legal implications of a pro se petitioner's arguments even if not expressly stated in the petition, but petitioner, not the board, must provide information required to satisfy admissibility standards; LBP-20-8, 92 NRC 23 (2020)

challenge to a license amendment must confine itself to health, safety, or environmental issues fairly raised by the amendment; LBP-20-7, 92 NRC 1 (2020)

challenge to Continued Storage Rule insofar as it would have applicant describe impacts of spent fuel repackaging in its environmental report is not allowed; CLI-20-14, 92 NRC 463 (2020)

challenge to ITAAC in combined license amendment proceeding is outside the scope of the proceeding; LBP-20-8, 92 NRC 23 (2020)

challenge to lack of a dry transfer system is an impermissible challenge to the Continued Storage Rule and the Continued Storage Generic Environmental Impact Statement; CLI-20-15, 92 NRC 491 (2020)

challenge to method for ensuring subcriticality in spent fuel pool as insufficiently conservative is inadmissible; LBP-20-7, 92 NRC 1 (2020)

challenges to current licensing basis of a plant are not within the scope of a license amendment proceeding, being challenged more properly through a request for enforcement action; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

challenges to generic findings codified in NRC rules are barred; CLI-20-11, 92 NRC 335 (2020)

challenges to NRC regulations in individual adjudications are precluded without a waiver; CLI-20-15, 92 NRC 491 (2020)

claim that applicant underestimated volume of low-level radioactive waste at proposed ISFSI is an impermissible attack on the rule; CLI-20-14, 92 NRC 463 (2020)

claims of deficient licensee character or integrity must have some direct and obvious relationship between the character issues and the licensing action in dispute; CLI-20-12, 92 NRC 351 (2020)

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claims of prior violations or events involving a company must be directly germane to the challenged licensing action; CLI-20-12, 92 NRC 351 (2020)

claims that high-burnup fuel could rupture licensed casks is an impermissible challenge to the certified design of the casks; CLI-20-15, 92 NRC 491 (2020)

Commission affords substantial deference to board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-8, 92 NRC 255 (2020); CLI-20-13, 92 NRC 457 (2020); CLI-20-18, 92 NRC 530 (2020)

contention must be rejected if it raises issues beyond the scope of the proceeding as dictated by the hearing notice; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

contention of omission must be supported by reasons for petitioner's belief that the omitted information is required by law; CLI-20-18, 92 NRC 530 (2020)

contention that certified storage systems would not be suitable to store fuel as allowed by their design certifications is barred; CLI-20-15, 92 NRC 491 (2020)

contention that environmental report and safety analysis report failed to consider adverse effect the independent spent fuel storage installation will have on groundwater is inadmissible; CLI-20-14, 92 NRC 463 (2020)

contention that foundation settlement issues and construction factors create unacceptable operational risk to public health and safety is inadmissible; LBP-20-8, 92 NRC 23 (2020)

contention that independent spent fuel storage installation application fails to adequately describe control of subsurface mineral rights and oil and gas and mineral extraction operations is inadmissible; LBP-20-10, 92 NRC 235 (2020)

decision on standing is not a ruling on either admissibility or merits of contentions; LBP-20-8, 92 NRC 23 (2020)

dispositive issue is not whether there are differences between applicant's environmental report and the draft environmental impact statement, but whether petitioner's amended contention is based on new facts not previously available; LBP-20-10, 92 NRC 235 (2020)

failure to comply with any contention pleading requirements is grounds for its rejection; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020); LBP-20-10, 92 NRC 235 (2020)

following application docketing, any additional applicant-submitted information received and docketed by NRC prior to completion of the adjudicatory proceeding generally would be eligible for consideration as a new or amended contention; LBP-20-8, 92 NRC 23 (2020)

if petitioners have not established standing to intervene the question of whether petitioners have submitted at least one admissible contention need not be reached; CLI-20-16, 92 NRC 511 (2020)

inadmissibility of contention that application failed to account for unstable geological characteristics and soil stability problems from abandoned and orphan oil and gas wells is upheld; CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that central premise of application is that the U.S. Department of Energy will take ownership of the waste and contract with applicant to store it until a permanent repository is available is upheld; CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that emergency response plan for ISFSI facility was deficient in failing to account for aircraft crashes and other hazards is upheld; CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that environmental justice compliance will not be possible because identification and analysis of potentially affected populations along the anticipated transportation routes will be improperly excluded from disclosure in the NEPA document is upheld; CLI-20-14, 92 NRC 463 (2020); CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that environmental report and SAR failed to account for effects of storing high-burnup fuel at proposed ISFSI is upheld; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that environmental report was insufficient because it did not account for potential waste transportation and packaging issues is upheld; CLI-20-13, 92 NRC 457 (2020)

inadmissibility of contention that impacts of storage containers used beyond their licensing period should be considered is upheld; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that ISFSI applicant had not provided reasonable assurance that it will have the necessary funds for decommissioning is upheld; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that ISFSI application does not accurately and adequately evaluate and consider impacts to groundwater is upheld; CLI-20-15, 92 NRC 491 (2020)

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inadmissibility of contention that ISFSI application's discussion of potential impacts from earthquakes induced by oil and gas activities is upheld; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that two wildlife species of concern may be present at the proposed ISFSI site is upheld; CLI-20-15, 92 NRC 491 (2020)

initial petitions to intervene must be based on documents or other information available at the time the petition is to be filed; CLI-20-8, 92 NRC 255 (2020)

inquiry into licensee character must point to some direct and obvious relationship between the licensing action and the potential character issues; LBP-20-7, 92 NRC 1 (2020)

intervenor are not required to prove their case at the contention admission stage, nor are they required to provide an exhaustive list of possible bases at that time; LBP-20-9, 92 NRC 58 (2020)

intervenor, pro se or otherwise, are expected to provide credible support for the contentions they proffer; LBP-20-8, 92 NRC 23 (2020)

issue that impact of damaged Boraflex racks on safe transfer of spent fuel out of the spent fuel pool is inadmissible; LBP-20-7, 92 NRC 1 (2020)

issue that more prudent action to ensure spent fuel pool subcriticality is reducing density by removal and placement in dry cask storage is inadmissible; LBP-20-7, 92 NRC 1 (2020)

issue that not physically removing the degraded Boraflex from spent fuel pool will result in unanticipated consequences and debris in the spent fuel pool is inadmissible; LBP-20-7, 92 NRC 1 (2020)

issue that potential use of experimental, higher enriched and longer burnup fuel has not undergone adequate evaluation as pertains to impact on criticality in spent fuel pool is inadmissible; LBP-20-7, 92 NRC 1 (2020)

issue that removal and replacement of Boraflex in the spent fuel pool has potential for a significant increase in probability or consequences of an accident is inadmissible; LBP-20-7, 92 NRC 1 (2020)

issue that specific analysis of the spent fuel pool as currently loaded is needed prior to consideration of license amendment is inadmissible; LBP-20-7, 92 NRC 1 (2020)

it is petitioners' responsibility, not the board's, to formulate contentions and provide the necessary information to satisfy the basis requirement; LBP-20-8, 92 NRC 23 (2020)

mere casting of doubt on some aspects of proposed funding plans is not by itself sufficient to defeat a finding of reasonable assurance; CLI-20-12, 92 NRC 351 (2020)

merely identifying a Staff request for additional information does not identify a genuine material dispute with an application; CLI-20-12, 92 NRC 351 (2020)

neither mere speculation nor bare conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow admission of a contention; LBP-20-8, 92 NRC 23 (2020)

new or amended contentions must be based on information not previously available; LBP-20-8, 92 NRC 23 (2020)

no NRC rule or regulation may be challenged in a contention unless petitioner seeks and obtains a waiver from the Commission; LBP-20-7, 92 NRC 1 (2020)

no significant hazards consideration determination by NRC Staff associated with license amendment request is not subject to challenge in an adjudicatory proceeding; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

NRC Staff's decision to docket an application is a decision committed to Staff's discretion and not typically reviewable in an adjudicatory proceeding; CLI-20-18, 92 NRC 530 (2020)

NRC's standards are not intended as a fortress to deny intervention; LBP-20-7, 92 NRC 1 (2020)

obvious potential for offsite consequences is not in itself sufficient to support an admissible contention; LBP-20-8, 92 NRC 23 (2020)

petitioner argues because license application was incomplete, the standard for an admissible contention is lowered and contention should be admitted; CLI-20-18, 92 NRC 530 (2020)

petitioner fails to raise an issue material to the findings NRC must make to support the action and fails to demonstrate a genuine dispute with the application; CLI-20-11, 92 NRC 335 (2020)

petitioner is expected to evaluate all available information at the earliest possible time to identify the potential basis for contentions and preserve their admissibility; LBP-20-10, 92 NRC 235 (2020)

petitioner may not challenge applicable statutory requirements as part of an administrative adjudication; LBP-20-7, 92 NRC 1 (2020)

petitioner must demonstrate that the issue raised is material to findings NRC must make to support the action involved; LBP-20-10, 92 NRC 235 (2020)

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petitioner must identify a deficiency in NRC Staff's environmental analysis and may not merely offer suggestions of other ways the analysis could have been done; LBP-20-10, 92 NRC 235 (2020)

petitioner must provide sufficient information to show that a genuine dispute exists with applicant or licensee on a material issue of law or fact; LBP-20-10, 92 NRC 235 (2020)

petitioner must satisfy six pleading requirements of 10 C.F.R. 2.309(f)(1)(i)-(vi); LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

petitioner seeking to challenge acceptance criteria for a combined license must establish a prima facie case that such criteria have not been, or will not be, met; LBP-20-8, 92 NRC 23 (2020)

petitioners must carefully review the application at issue and raise all their distinct challenges at the outset, avoiding piecemeal supplemental contentions unless they could not have been raised earlier; CLI-20-8, 92 NRC 255 (2020)

petitioners must do more than rest on the mere existence of requests for additional information as a basis for their contention; LBP-20-10, 92 NRC 235 (2020)

pleading requirements are not intended to be a fortress to deny intervention; LBP-20-10, 92 NRC 235 (2020)

pleading requirements are strict by design; CLI-20-12, 92 NRC 351 (2020); LBP-20-7, 92 NRC 1 (2020); LBP-20-10, 92 NRC 235 (2020)

references to regulatory requirements governing licensee programs for controlling access to nuclear power plants, including the use of background checks, are not relevant to license transfer proceeding; CLI-20-12, 92 NRC 351 (2020)

requirements for an admissible contention are specified in 10 C.F.R. 2.309(f)(1); CLI-20-12, 92 NRC 351 (2020)

simply presenting an alternative analysis is not enough to raise an admissible contention unless petitioner also shows that the application's analysis is inadequate or unreasonable; CLI-20-15, 92 NRC 491 (2020)

standard for admitting a new contention after the record is closed is higher than for an ordinary late-filed contention; LBP-20-10, 92 NRC 235 (2020)

standard that requires petitioner to show a genuine dispute on a material issue of law or fact specifically excludes proceedings under 10 C.F.R. 52.103; LBP-20-8, 92 NRC 23 (2020)

standards were strengthened to afford evidentiary hearings only to those who proffer at least some minimal factual and legal foundation in support of their contentions; LBP-20-7, 92 NRC 1 (2020); LBP-20-10, 92 NRC 235 (2020)

standing and contention admissibility are separate issues with distinct requirements; CLI-20-15, 92 NRC 491 (2020)

to avoid open-ended inquiries into matters ultimately unrelated to NRC-licensed activities, NRC has limited contentions raising claims of poor or improper management or character to claims that relate directly to the proposed licensing action; CLI-20-12, 92 NRC 351 (2020)

to challenge factual determinations on which a regulation rests in the context of NEPA, petitioner would have to present specific, fact-based claims to the contrary, not mere allegations; CLI-20-15, 92 NRC 491 (2020)

to merit an evidentiary hearing under the NRC's rules, merely expressing concerns is not sufficient; LBP-20-7, 92 NRC 1 (2020)

to the extent that petitioner challenges the adequacy or accuracy of applicant's decommissioning cost estimates because a site characterization has not yet been completed, it impermissibly challenges NRC regulations; CLI-20-12, 92 NRC 351 (2020)

under contention-pleading rules, it is petitioner's burden to explain why a contention should be admitted; CLI-20-14, 92 NRC 463 (2020)

under longstanding NRC practice, contentions must rest on the license application, not on NRC Staff reviews; CLI-20-17, 92 NRC 521 (2020)

unless an appeal demonstrates an error of law or abuse of discretion, Commission generally defers to the board on contention admissibility rulings; CLI-20-11, 92 NRC 335 (2020)

without supporting citations, claims are nothing more than mere speculation; LBP-20-8, 92 NRC 23 (2020)

CONTENTIONS, LATE-FILED

contentions may be filed after the initial deadline to intervene based on new and materially different information; CLI-20-17, 92 NRC 521 (2020)

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dispositive issue is not whether there are differences between applicant's environmental report and the draft environmental impact statement, but whether petitioner's amended contention is based on new facts not previously available; LBP-20-10, 92 NRC 235 (2020)

following application docketing, any additional applicant-submitted information received and docketed by the agency prior to completion of the adjudicatory proceeding generally would be eligible for consideration in the context of a new or amended contention; LBP-20-8, 92 NRC 23 (2020)

following the intervention petition deadline, participants may still file new or amended environmental contentions challenging NRC Staff's environmental review documents if timeliness requirements are met; CLI-20-8, 92 NRC 255 (2020)

good cause for filing new or amended contentions can be demonstrated if a contention is based on information that was not previously available, is materially different from information previously available, and has been submitted in a timely fashion based on the availability of the subsequent information; CLI-20-8, 92 NRC 255 (2020)

motions for leave to file a new contention after the applicable deadline for contentions will not be entertained unless the information on which the filing was based was not previously available and is based materially different information and the filing has been submitted in a timely fashion; CLI-20-12, 92 NRC 351 (2020)

new contentions based on a draft or final Staff NEPA document must be based on information that differs significantly from that previously available; CLI-20-8, 92 NRC 255 (2020)

new or amended contentions must be based on information not previously available; LBP-20-8, 92 NRC 23 (2020)

new or amended contentions will not be entertained unless the presiding officer determines that there is good cause for the filing; CLI-20-8, 92 NRC 255 (2020)

petitioners must carefully review the application at issue and raise all their distinct challenges at the outset, avoiding piecemeal supplemental contentions unless they could not have been raised earlier; CLI-20-8, 92 NRC 255 (2020)

standard for admitting a new contention after the record is closed is higher than for an ordinary late-filed contention; LBP-20-10, 92 NRC 235 (2020)

to demonstrate good cause for filing after the initial deadline for intervention petitions, petitioner must also submit contentions that meet the applicable contention admissibility requirements; CLI-20-17, 92 NRC 521 (2020)

CONTINUED STORAGE RULE

challenge to the lack of a dry transfer system is an impermissible challenge to the Continued Storage Rule and the Continued Storage Generic Environmental Impact Statement; CLI-20-15, 92 NRC 491 (2020)

contention impermissibly challenged rule insofar as it would have applicant describe impacts of spent fuel repackaging in its environmental report; CLI-20-14, 92 NRC 463 (2020)

environmental impacts resulting from disposal of concrete casks and storage pads from an ISFSI are generically described in the Continued Storage GEIS, which is incorporated into the Continued Storage Rule; CLI-20-14, 92 NRC 463 (2020)

NRC's Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel evaluates environmental impacts of construction and waste repackaging beyond the proposed license term; CLI-20-13, 92 NRC 457 (2020)

rule explicitly excuses applicant from providing a site-specific description of environmental impacts related to spent fuel storage that may occur after the initial 40-year license term; CLI-20-14, 92 NRC 463 (2020)

CONTRACTS

because an illegal contract is unenforceable, applicant plainly could not rely on such contracts to ensure its operating funds; CLI-20-14, 92 NRC 463 (2020)

whether ISFSI applicant finds the option of contracting directly with power plant owners commercially viable in the future is not an issue material to the license proceeding; CLI-20-15, 92 NRC 491 (2020)

CORRECTIVE ACTION PROGRAM

applicant must address any adverse findings from confirmatory actions in the license condition in accordance with the Corrective Action Program, which is subject to further NRC oversight; LBP-20-9, 92 NRC 58 (2020)

SUBJECT INDEX

COSTS

agencies are to include essential information in an environmental impact statement unless the overall costs of obtaining it are unreasonable or the means to obtain it are not known; CLI-20-8, 92 NRC 255 (2020)

annual report on status of spent fuel management funding must specify amount of funds available to cover cost of managing the spent fuel and projected cost of managing the fuel until DOE takes title to and possession of the fuel; CLI-20-12, 92 NRC 351 (2020)

claims that applicant must provide a probabilistic analysis of new seismic information or show that the cost of such analysis would be exorbitant are considered; CLI-20-9, 92 NRC 295 (2020)

Commission considered claim that applicant must provide a probabilistic analysis of new seismic information or show that the cost of such analysis would be exorbitant; CLI-20-8, 92 NRC 255 (2020)

if the available funds are not sufficient to cover projected cost of managing the spent fuel, annual report must include a plan to obtain additional funds; CLI-20-12, 92 NRC 351 (2020)

overall costs of obtaining incomplete or unavailable information in the environmental impact statement encompasses financial costs and other costs such as costs in terms of time (delay) and personnel; CLI-20-9, 92 NRC 295 (2020)

See also Decommissioning Costs

COUNCIL ON ENVIRONMENTAL QUALITY

CEQ regulations generally are not controlling on NRC, at least to the extent that they have not been incorporated by NRC into 10 C.F.R. Part 51; CLI-20-9, 92 NRC 295 (2020)

NRC, as an independent regulatory agency, is not bound by CEQ NEPA regulations unless the Commission chooses to follow them; CLI-20-11, 92 NRC 335 (2020)

COUNCIL ON ENVIRONMENTAL QUALITY GUIDELINES

CEQ regulation 40 C.F.R. 1502.22 is not binding on NRC Staff but can be a useful guide for determining what actions are reasonable under NEPA; CLI-20-9, 92 NRC 295 (2020)

CREDIBILITY

accidental canister breach during shipping or storage was not a credible scenario; CLI-20-15, 92 NRC 491 (2020)

Commission gives the highest deference to findings of fact that turn on witness credibility; CLI-20-9, 92 NRC 295 (2020)

threshold probability for a design basis event (whether an event is credible) should be one in one million for a spent fuel storage installation; CLI-20-14, 92 NRC 463 (2020)

CRITICALITY

contention that potential use of experimental, higher enriched and longer burnup fuel has not undergone adequate evaluation as pertains to being placed into spent fuel pool and subsequent impact on criticality is inadmissible; LBP-20-7, 92 NRC 1 (2020)

CRITICALITY ANALYSES

contention that specific analysis of the spent fuel pool as currently loaded is needed prior to consideration of license amendment is inadmissible; LBP-20-7, 92 NRC 1 (2020)

CRITICALITY CONTROL

contention challenging method for ensuring subcriticality in spent fuel pool as insufficiently conservative is inadmissible; LBP-20-7, 92 NRC 1 (2020)

contention that more prudent action to ensure spent fuel pool subcriticality is reducing density by removal and placement in dry cask storage is inadmissible; LBP-20-7, 92 NRC 1 (2020)

CULTURAL RESOURCES

agency undertook reasonable identification efforts even when it resisted a tribe's requests for a formal study of cultural properties and given a more thorough exploration, the agency might have discovered more eligible sites; CLI-20-8, 92 NRC 255 (2020)

court was unable to conclude that government agency failed to make a reasonable and good faith effort to identify historic properties, but it ultimately reversed the agency's decision on other grounds; CLI-20-8, 92 NRC 255 (2020)

National Historic Preservation Act review should proceed as a partnership between federal agencies and affected stakeholders; CLI-20-8, 92 NRC 255 (2020)

new field investigation appears to be the only reasonable and good faith effort for identifying tribe cultural resources within the license area; CLI-20-8, 92 NRC 255 (2020)

SUBJECT INDEX

NRC Staff has a responsibility under NEPA to preserve important historic, cultural, and natural aspects of our national heritage regardless of whether a federally recognized tribe appears to assert and prosecute a claim; CLI-20-9, 92 NRC 295 (2020)

NRC Staff must consult with Native American tribes on cultural resources; CLI-20-9, 92 NRC 295 (2020)

NRC Staff must make a reasonable and good faith effort to identify historic properties, their significance, the potential effects of the license renewal on them, and potential mitigation measures; CLI-20-8, 92 NRC 255 (2020)

NRC Staff's unsuccessful four-year effort to obtain missing information on cultural resources following a ruling that Staff's initial four-year effort to obtain missing information on cultural resources did not satisfy NEPA or NHPA is described; CLI-20-8, 92 NRC 255 (2020)

reasonable and good faith effort to obtain missing information on cultural resources is described; CLI-20-8, 92 NRC 255 (2020)

where NRC Staff had not adequately identified Native American cultural resources on the site, Staff has to show that the information was not reasonably available; CLI-20-9, 92 NRC 295 (2020)

CURRENT LICENSING BASIS

challenge to ongoing operation of a facility should be as a petition seeking enforcement action; LBP-20-8, 92 NRC 23 (2020)

challenges to CLB of a plant are not within the scope of a license amendment proceeding, being challenged more properly through a request for enforcement action; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

DEADLINES

license termination plan must be submitted at least 2 years before date of license termination and include a site characterization and an updated site-specific decommissioning cost estimate for the remaining decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

motion for a stay must be filed within 10 days of board's ruling; CLI-20-10, 92 NRC 327 (2020)

motion for reconsideration must be filed within 10 days; CLI-20-10, 92 NRC 327 (2020)

motion was timely based on an order by the Secretary extending the deadline for filing new contentions based on the draft environmental impact statement; CLI-20-14, 92 NRC 463 (2020)

petitioners must examine the application and other publicly available documents and file contentions within the initial 60-day time frame to intervene; CLI-20-17, 92 NRC 521 (2020)

preliminary decommissioning cost estimate must be provided at or about 5 years prior to the projected end of operations; CLI-20-12, 92 NRC 351 (2020)

site-specific decommissioning cost estimate must be provided within 2 years following permanent cessation of operations; CLI-20-12, 92 NRC 351 (2020)

updated decommissioning cost estimate of remaining costs must be provided in a license termination plan; CLI-20-12, 92 NRC 351 (2020)

DECISION ON THE MERITS

boards may not base their rulings on documents that are not part of the evidentiary record; LBP-20-9, 92 NRC 58 (2020)

Commission is highly deferential to board conclusions, particularly where much of the evidence is subject to interpretation; CLI-20-8, 92 NRC 255 (2020)

decision on standing is not a ruling on either admissibility or merits of contentions; LBP-20-8, 92 NRC 23 (2020)

standard of clear error for overturning a board's factual findings following a merits hearing is high; CLI-20-8, 92 NRC 255 (2020)

DECOMMISSIONING

facility or site is safely removed from service and residual radioactivity is reduced to a level that permits release of the property for unrestricted or restricted use and termination of the license; CLI-20-12, 92 NRC 351 (2020)

generic environmental impact statement reflects NRC's determination that decommissioning is not itself a major federal action and serves to establish an envelope of environmental impacts associated with decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

if licensee contemplates performing a decommissioning activity with impacts not enveloped by previous environmental analyses, licensee must submit a license amendment request, together with a supplemental environmental report evaluating the additional impacts; CLI-20-12, 92 NRC 351 (2020)

SUBJECT INDEX

if petitioner has grounds to believe that impacts of planned decommissioning, site restoration, and spent fuel management activities exceed those previously reviewed, its recourse is a petition for enforcement action; CLI-20-12, 92 NRC 351 (2020)

licensee is prohibited from performing any activities that foreclose release of the site for unrestricted use or result in a loss of reasonable assurance that adequate funds will be available for decommissioning; CLI-20-12, 92 NRC 351 (2020)

licensee may begin to perform major decommissioning activities consistent with its PSDAR 90 days after NRC has received the PSDAR; CLI-20-12, 92 NRC 351 (2020)

NRC requires a licensee that specifies a delayed completion of decommissioning by including a storage or surveillance period to provide a means of adjusting cost estimates over the storage or surveillance period; CLI-20-12, 92 NRC 351 (2020)

section 51.53(d) applies to applicants for a license amendment authorizing decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

DECOMMISSIONING COSTS

estimate for independent spent fuel storage installation must contain an adequate contingency factor; CLI-20-12, 92 NRC 351 (2020)

estimates derived from minimum formula also include site restoration and spent fuel management; CLI-20-12, 92 NRC 351 (2020)

initial decommissioning cost estimates at the operating license stage may be based on the NRC's generic minimum formula and must be adjusted annually; CLI-20-12, 92 NRC 351 (2020)

license termination plan must be submitted at least 2 years before date of license termination and include a site characterization and an updated site-specific decommissioning cost estimate for the remaining decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

licensee must provide every year in the financial assurance status report an estimate of the cost to complete decommissioning and the decommissioning criteria on which the estimate is based; CLI-20-12, 92 NRC 351 (2020)

licensee that has submitted its site-specific decommissioning cost estimate must submit to NRC a financial assurance status report every year containing specific information; CLI-20-12, 92 NRC 351 (2020)

NRC does not require estimates to be confirmed by a site characterization; CLI-20-12, 92 NRC 351 (2020)

NRC requires a licensee that specifies a delayed completion of decommissioning by including a storage or surveillance period to provide a means of adjusting cost estimates over the storage or surveillance period; CLI-20-12, 92 NRC 351 (2020)

preliminary estimate must be provided at or about 5 years prior to the projected end of operations; CLI-20-12, 92 NRC 351 (2020)

site-specific decommissioning cost estimate must be provided within 2 years following permanent cessation of operations; CLI-20-12, 92 NRC 351 (2020)

to the extent that petitioner challenges the adequacy or accuracy of applicant's decommissioning cost estimates because a site characterization has not yet been completed, it impermissibly challenges NRC regulations; CLI-20-12, 92 NRC 351 (2020)

updated decommissioning cost estimate of remaining costs must be provided in a license termination plan; CLI-20-12, 92 NRC 351 (2020)

DECOMMISSIONING FUND DISBURSEMENTS

exemption is sought to use decommissioning trust fund to pay not only for decommissioning costs but also for; CLI-20-12, 92 NRC 351 (2020)

licensee must notify NRC and the affected state in writing before performing any decommissioning activity that would significantly increase estimated site-specific decommissioning cost beyond that provided to NRC; CLI-20-12, 92 NRC 351 (2020)

licensees may not use a decommissioning trust fund to pay for activities that do not fall under NRC's definition of decommissioning; CLI-20-12, 92 NRC 351 (2020)

NRC will monitor increased withdrawals from the decommissioning trust fund and increased projected costs as reported in the annual decommissioning financial assurance status reports; CLI-20-12, 92 NRC 351 (2020)

SUBJECT INDEX

DECOMMISSIONING FUNDING

additional financial assurance might be in the form of a deposit to the trust fund or other prepayment, a parent guarantee, or other method that NRC Staff may approve; CLI-20-12, 92 NRC 351 (2020)

adequacy of decommissioning funding and ensuring safe and timely decontamination of site have been linked; CLI-20-12, 92 NRC 351 (2020)

if annual decommissioning financial assurance status report predicts a shortfall in funding, licensee must provide additional financial assurance; CLI-20-12, 92 NRC 351 (2020)

if remaining decommissioning funds together with projected earnings on those funds are not sufficient to cover estimated cost to complete decommissioning, licensee must include in the status report additional financial assurance to cover remaining estimated costs; CLI-20-12, 92 NRC 351 (2020)

in context of standing, inadequate decommissioning funding could lead to uncompleted decommissioning, and in turn that inadequate cleanup of the reactor site may result in adverse health effects, loss of aesthetic enjoyment, and diminished property values for those who live, work or play in the immediate vicinity; CLI-20-12, 92 NRC 351 (2020)

inadmissibility of contention that ISFSI applicant had not provided reasonable assurance that it will have the necessary funds for decommissioning is upheld; CLI-20-15, 92 NRC 491 (2020)

license application must provide financial assurance for decommissioning through prepayment, a surety, insurance, or other guarantee method, or an external sinking fund; CLI-20-15, 92 NRC 491 (2020)

license transfer applicants involved with operating reactors generally show reasonable assurance of decommissioning funding by using NRC's generic, formula-derived estimate; CLI-20-12, 92 NRC 351 (2020)

license transfer application for independent spent fuel storage installation must provide reasonable assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 351 (2020)

license transfer application must provide reasonable assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 351 (2020)

license transferee remains responsible for funding assurance associated with its 15.8% ownership interest and to continue to provide that funding; CLI-20-7, 92 NRC 225 (2020)

licensee must annually continue to show adequate funding until the license has been terminated and all spent fuel has been removed from the site; CLI-20-12, 92 NRC 351 (2020)

licensee that has set aside prepaid decommissioning funds based on a site-specific decommissioning cost estimate may take credit for projected earnings on the account's funds, up to a 2% annual real rate of return, through the projected decommissioning period; CLI-20-12, 92 NRC 351 (2020)

licensee who is relying on the decommissioning trust fund to pay for ISFSI decommissioning costs will need to provide this information in an annual financial status report on decommissioning; CLI-20-12, 92 NRC 351 (2020)

mere casting of doubt on some aspects of proposed funding plans is not by itself sufficient to defeat a finding of reasonable assurance; CLI-20-12, 92 NRC 351 (2020)

prepayment is an acceptable method of demonstrating financial assurance of decommissioning funding; CLI-20-12, 92 NRC 351 (2020)

prepayment refers to prepaid funds deposited in an account segregated from licensee's assets and outside of licensee's administrative control in an amount that would be sufficient to pay decommissioning costs at the time permanent termination of operations is expected; CLI-20-12, 92 NRC 351 (2020)

DECOMMISSIONING FUNDING PLANS

licensee must submit to NRC an independent spent fuel storage installation decommissioning funding plan at least every 3 years with adjustments as necessary to account for changes in costs; CLI-20-12, 92 NRC 351 (2020)

DECOMMISSIONING PLANS

environmental report requirement applies to applicant seeking a license amendment approving a license termination plan or decommissioning plan under 10 C.F.R. 50.82; CLI-20-12, 92 NRC 351 (2020)

power reactor licensees are no longer required to have an approved decommissioning plan before undertaking major decommissioning activities but must provide a PSDAR; CLI-20-12, 92 NRC 351 (2020)

DECONTAMINATION

adequacy of decommissioning funding and ensuring safe and timely decontamination of site have been linked; CLI-20-12, 92 NRC 351 (2020)

SUBJECT INDEX

DEFICIENCIES

if petitioners believe that an application is incomplete in some way, they may file a contention to that effect; CLI-20-17, 92 NRC 521 (2020)
issuance of requests for additional information alone does not establish deficiencies in an application or that NRC Staff will find any applicant responses unsatisfactory; LBP-20-10, 92 NRC 235 (2020)
missing information in an environmental impact statement may be cured using the hearing record; CLI-20-9, 92 NRC 295 (2020)
that NRC Staff is asking for more information does not make an application incomplete; CLI-20-17, 92 NRC 521 (2020)

DEFINITIONS

“decommission” means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted or restricted use and termination of the license; CLI-20-12, 92 NRC 351 (2020)
prepayment refers to prepaid funds deposited in an account segregated from licensee’s assets and outside of licensee’s administrative control in an amount that would be sufficient to pay decommissioning costs at the time permanent termination of operations is expected; CLI-20-12, 92 NRC 351 (2020)

DEFUELED REACTORS

emergency planning exemption request that would be implemented by a requested license amendment to reflect reactor facility’s permanently shut down and defueled status is within the scope of the proceeding; LBP-20-7, 92 NRC 1 (2020)

DELAY

NRC requires a licensee that specifies a delayed completion of decommissioning by including a storage or surveillance period to provide a means of adjusting cost estimates over the storage or surveillance period; CLI-20-12, 92 NRC 351 (2020)
petitioner is barred from requesting a delay of issuance of a license amendment by NRC until the Commission reviews Staff’s no significant hazards consideration determination; LBP-20-9, 92 NRC 58 (2020)

DELIBERATE MISCONDUCT

adequate evidence of an intentional act or omission that causes a violation is insufficient to demonstrate adequate evidence of a violation if NRC Staff does not also show that the alleged wrongdoer knowingly engaged in deliberate misconduct; LBP-20-11, 92 NRC 409 (2020)
deliberate misconduct is more than careless disregard or deliberate ignorance; LBP-20-11, 92 NRC 409 (2020)
determining state of mind and intent of the individual for a deliberate misconduct violation may be difficult to prove; LBP-20-11, 92 NRC 409 (2020)
intentional act or omission that the person knows would cause a licensee to be in violation of any rule is required; LBP-20-11, 92 NRC 409 (2020)
knowledge of a rule is not the same as knowledge that one is engaging in conduct contrary to that rule; LBP-20-11, 92 NRC 409 (2020)
licensee willfully violated an NRC requirement when it knew what was required of it under the NRC’s regulations and the terms and conditions of its license, and failed to comply therewith; LBP-20-11, 92 NRC 409 (2020)
not only must the element of actual knowledge be present, but a 10 C.F.R. 50.5 violation requires a showing that it was deliberate; LBP-20-11, 92 NRC 409 (2020)
NRC considers deliberate violations significant because of the potential that it may make others hesitant to raise safety issues for fear of retaliation; LBP-20-11, 92 NRC 409 (2020)
showing of deliberate misconduct requires reliable, probative, and substantial evidence; LBP-20-11, 92 NRC 409 (2020)
such misconduct generally must be inferred from the objective evidence; LBP-20-11, 92 NRC 409 (2020)

DEMAND FOR HEARING

licensee or any other person adversely affected by an immediately effective enforcement order may demand a hearing on the merits of the order; LBP-20-11, 92 NRC 409 (2020)

SUBJECT INDEX

DENIAL OF LICENSE

NRC Staff may issue its approval or denial of a license transfer application, consistent with its findings in its Safety Evaluation Report, during a pending adjudicatory proceeding; CLI-20-12, 92 NRC 351 (2020)

DEPARTMENT OF ENERGY

DOE cannot take title to spent nuclear fuel until after it has commenced operations at a permanent repository and that the ISFSI license, until granted, would not authorize DOE to do so; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that central premise of application is that the U.S. Department of Energy will take ownership of the waste and contract with applicant to store it until a permanent repository is available is upheld; CLI-20-14, 92 NRC 463 (2020)

DESIGN

applicant's preferences in siting and design of the project must not be so artificially narrow as to circumvent the requirement that reasonable alternatives be considered; CLI-20-15, 92 NRC 491 (2020)
facility need not be designed to withstand every conceivable accident, but it must be designed to withstand those found to be credible; CLI-20-14, 92 NRC 463 (2020)

NRC accords substantial weight to preferences of applicant and/or sponsor in siting and design of the project; CLI-20-14, 92 NRC 463 (2020); CLI-20-15, 92 NRC 491 (2020)

See also Containment Design; General Design Criteria; Reactor Design; Seismic Design

DESIGN BASIS

applicable regulatory requirements and section 50.2 defined design basis for structures, systems, and components covered by Appendix B must be correctly translated into specifications, drawings, procedures, and instructions; LBP-20-9, 92 NRC 58 (2020)

where analytical methodology is an essential part of the conclusion that the facility meets the required design bases, the updated final safety analysis report must describe the specific analytical methods; LBP-20-9, 92 NRC 58 (2020)

DESIGN BASIS EVENTS

threshold probability for a design basis event (whether an event is credible) should be one in one million for a spent fuel storage installation; CLI-20-14, 92 NRC 463 (2020)

DESIGN CERTIFICATION

API1000 certified design is incorporated by reference into NRC regulations; CLI-20-18, 92 NRC 530 (2020)

certified design appendix incorporates by reference a generic design certification document submitted by the certified design applicant and contains information that is subject to NRC review and approval as part of the rulemaking process; LBP-20-8, 92 NRC 23 (2020)

claims that high-burnup fuel could rupture licensed casks is an impermissible challenge to the certified design of the casks; CLI-20-15, 92 NRC 491 (2020)

contention that certified storage systems would not be suitable to store fuel as allowed by their design certifications is barred; CLI-20-15, 92 NRC 491 (2020)

design information is allocated to one of three categories, Tier 1, Tier 2, and Tier 2*; LBP-20-8, 92 NRC 23 (2020)

exemption from certified reactor design must be based on a finding of the need to ensure adequate protection of public health and safety and existence of special circumstance; LBP-20-8, 92 NRC 23 (2020)

Tier 2 information is design-related information contained in the generic design control document that is approved but not certified by the design certification rule; LBP-20-8, 92 NRC 23 (2020)

DISCLOSURE

for the hearing opportunity afforded interested persons by the Atomic Energy Act to remain meaningful, NRC Staff must turn square corners in ensuring hearing requestors have appropriate access to applicant information provided to NRC for use in the license application review process; LBP-20-8, 92 NRC 23 (2020)

it is no less good morals and good law that government should turn square corners in dealing with the people than that the people should turn square corners in dealing with their government; LBP-20-8, 92 NRC 23 (2020)

SUBJECT INDEX

DISCOVERY

discovery on contention's subject matter can be obtained once the contention is admitted for litigation; LBP-20-8, 92 NRC 23 (2020)

DISQUALIFICATION

unwarranted and inflexible barriers, such as too great an insistence on specific knowledge in selected aspects of a subject, should not disqualify an expert witness who possesses a strong general background and specialized knowledge in the relevant field; LBP-20-9, 92 NRC 58 (2020)

DOCKETING

examining NRC Staff's rationale for docketing an application is not within the scope of NRC adjudicatory proceedings; CLI-20-17, 92 NRC 521 (2020)

NRC Staff docketing decisions, which presumably include its conclusions about how much applicant information Staff requires to reach that determination, is one for which Staff is afforded considerable discretion; LBP-20-8, 92 NRC 23 (2020)

NRC Staff's decision to docket an application is not challengeable in an adjudicatory proceeding; CLI-20-17, 92 NRC 521 (2020); CLI-20-18, 92 NRC 530 (2020)

petitioners' view that NRC Staff should not have docketed the application when it planned to seek additional information to complete its safety review is incompatible with the dynamic licensing process followed in Commission licensing proceedings; CLI-20-17, 92 NRC 521 (2020)

upon receipt, application for a licensing action is subject to initial Staff review to ensure that it is complete and acceptable for docketing; LBP-20-8, 92 NRC 23 (2020)

DOCUMENTATION

license amendment request must provide sufficient documentation and analysis to show that licensee has complied with the relevant requirements; LBP-20-9, 92 NRC 58 (2020)

where analytical methodology is an essential part of the conclusion that the facility meets the required design bases, the updated final safety analysis report must describe the specific analytical methods; LBP-20-9, 92 NRC 58 (2020)

DRAFT ENVIRONMENTAL IMPACT STATEMENT

appropriate NRC Staff director may make a determination to prepare and issue a draft finding of no significant impact for public review and comment before making a final determination; CLI-20-8, 92 NRC 255 (2020)

NRC Staff is required to submit a request for comments on draft environmental impact statements; CLI-20-8, 92 NRC 255 (2020)

DRY CASK STORAGE

contention that more prudent action to ensure spent fuel pool subcriticality is reducing density by removal and placement in dry cask storage is inadmissible; LBP-20-7, 92 NRC 1 (2020)

DRY STORAGE CASKS

challenge to the lack of a dry transfer system is an impermissible challenge to the Continued Storage Rule and the Continued Storage Generic Environmental Impact Statement; CLI-20-15, 92 NRC 491 (2020)

ECONOMIC INTERESTS

effect of change in ownership on members' monthly utility bills is an economic interest that falls outside the zone of interests protected by the Atomic Energy Act; CLI-20-7, 92 NRC 225 (2020)

NRC may legitimately consider the economic goals of the project's sponsor; CLI-20-14, 92 NRC 463 (2020)

ratepayer interests do not confer standing in NRC proceedings; CLI-20-7, 92 NRC 225 (2020)

to support standing in an NRC proceeding, an economic harm must be directly related to environmental or radiological harm; CLI-20-7, 92 NRC 225 (2020)

ECONOMIC ISSUES

whether ISFSI applicant finds the option of contracting directly with power plant owners commercially viable in the future is not an issue material to the license proceeding; CLI-20-15, 92 NRC 491 (2020)

EFFECTIVENESS

See Immediate Effectiveness

EMBRITTLEMENT

licensees must determine if surveillance data show a significantly different trend than predicted in a reactor pressure vessel embrittlement model; LBP-20-12, 92 NRC 431 (2020)

SUBJECT INDEX

licensees must notify the NRC within 8 hours of a plant being in an unanalyzed condition that significantly degrades plant safety; LBP-20-12, 92 NRC 431 (2020)

EMERGENCY CORE COOLING SYSTEM
licensee must adopt strategies that provide reasonable protection for the associated equipment from external events and such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and spent fuel pool cooling capabilities; LBP-20-12, 92 NRC 431 (2020)

EMERGENCY PLANNING
exemption request that would be implemented by a requested license amendment to reflect reactor facility's permanently shut down and defueled status is within the scope of the proceeding; LBP-20-7, 92 NRC 1 (2020)

EMERGENCY PLANNING ZONES
presumed zone of potential harm corresponds roughly to ingestion pathway emergency planning zone applicable to the currently licensed fleet of commercial power reactors; LBP-20-8, 92 NRC 23 (2020)

EMERGENCY PLANS
section 72.122(c) is a design requirement, compliance with which is addressed in the safety analysis report rather than in the emergency plan; CLI-20-14, 92 NRC 463 (2020)

EMERGENCY RESPONSE
although contention was within the scope of the proceeding, it failed to factually support and dispute specific portions of the license amendment request with regard to emergency response; CLI-20-10, 92 NRC 327 (2020)

EMERGENCY RESPONSE PLANS
inadmissibility of contention that emergency response plan for ISFSI facility was deficient in failing to account for aircraft crashes and other hazards is upheld; CLI-20-14, 92 NRC 463 (2020)

EMPLOYEE PROTECTION
Commission has rejected proximity standing for certain changes to worker-protection requirements; LBP-20-8, 92 NRC 23 (2020)
raising concerns about a chilled work environment is a protected activity; LBP-20-11, 92 NRC 409 (2020)

EMPLOYMENT
immediately effective enforcement order may cause a person to suffer loss of employment while the order is being adjudicated but the effects of health and safety violations are paramount over an individual's right of employment; LBP-20-11, 92 NRC 409 (2020)

ENDANGERED SPECIES
inadmissibility of contention that two wildlife species of concern may be present at the proposed ISFSI site is upheld; CLI-20-15, 92 NRC 491 (2020)

ENERGY REORGANIZATION ACT
prima facie showing of a violation of the ERA must show that the individual engaged in protected activity, an adverse employment action was taken, and the individual's protected activity was a contributing factor in the adverse employment action; LBP-20-11, 92 NRC 409 (2020)

ENFORCEMENT ORDERS
adequate evidence to justify immediate effectiveness of an enforcement order requires a showing that the order is based on more than mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 409 (2020)
application of adequate evidence standard to immediately effective orders strikes a reasonable balance between NRC's ability to protect public health, safety, or interest on the basis of reasonably trustworthy information while still providing affected parties with a measure of protection against arbitrary enforcement action by NRC; LBP-20-11, 92 NRC 409 (2020)
immediately effective enforcement order may cause a person to suffer loss of employment while the order is being adjudicated but the effects of health and safety violations are paramount over an individual's right of employment; LBP-20-11, 92 NRC 409 (2020)
immediately effective orders are expressly authorized; LBP-20-11, 92 NRC 409 (2020)
"knowingly" requirement needed to support an immediately effective order is to be distinguished from mere willfulness, which can be established by showing merely an act of careless disregard; LBP-20-11, 92 NRC 409 (2020)

SUBJECT INDEX

licensee or any other person adversely affected by an immediately effective enforcement order may demand a hearing on the merits of the order; LBP-20-11, 92 NRC 409 (2020)

licensee or any other person adversely affected by an immediately effective enforcement order may move the presiding officer to set aside the immediate effectiveness of the order; LBP-20-11, 92 NRC 409 (2020)

motion to set aside immediate effectiveness of an enforcement order must state with particularity the reasons why the order is not based on adequate evidence and must be accompanied by affidavits or other evidence relied on; LBP-20-11, 92 NRC 409 (2020)

NRC is authorized to issue immediately effective enforcement orders if it finds that public health, safety, or interest so requires or that the violation or conduct causing the violation is willful; LBP-20-11, 92 NRC 409 (2020)

NRC may issue an enforcement order to a licensee or to an individual subject to NRC jurisdiction; LBP-20-11, 92 NRC 409 (2020)

NRC Staff may rely on additional evidence not cited in an enforcement order, but it may not issue the order based merely on the hope that it will thereafter find the necessary quantum of evidence to sustain the order's immediate effectiveness; LBP-20-11, 92 NRC 409 (2020)

to set aside immediate effectiveness of an enforcement order, alleged wrongdoer bears the burden of going forward with evidence that the order is not based on adequate evidence but on mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 409 (2020)

when immediate effectiveness of an enforcement order has been challenged, NRC Staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds for the order and immediate effectiveness is warranted; LBP-20-11, 92 NRC 409 (2020)

ENVIRONMENTAL ANALYSIS

contentions must identify a deficiency in NRC Staff's environmental analysis and may not merely offer suggestions of other ways the analysis could have been done; LBP-20-10, 92 NRC 235 (2020)

extent to which missing information constitutes a fatal flaw to a NEPA analysis is discussed; CLI-20-8, 92 NRC 255 (2020)

licensing actions that do not individually or collectively have a significant effect on the environment are categorically excluded from the need to prepare an NRC analysis under NEPA; CLI-20-12, 92 NRC 351 (2020)

NRC categorically excluded license transfer actions from the need to perform further environmental analysis; CLI-20-12, 92 NRC 351 (2020)

unless special circumstances are present, an environmental assessment or environmental impact statement is not required for approvals of direct or indirect transfers of any license issued by the NRC and for any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license; CLI-20-12, 92 NRC 351 (2020)

ENVIRONMENTAL IMPACT STATEMENT

agencies are to include essential information in an EIS unless the overall costs of obtaining it are unreasonable or the means to obtain it are not known; CLI-20-8, 92 NRC 255 (2020)

agency shall always make clear that there is incomplete or unavailable information in the EIS; CLI-20-9, 92 NRC 295 (2020)

analysis of impacts in the face of unavailable information must be grounded in the rule of reason; CLI-20-9, 92 NRC 295 (2020)

contentions must identify a deficiency in NRC Staff's EIS and may not merely offer suggestions of other ways the analysis could have been done; LBP-20-10, 92 NRC 235 (2020)

deficiency in an EIS may be cured using the hearing record; CLI-20-9, 92 NRC 295 (2020)

EIS is not a research document; CLI-20-9, 92 NRC 295 (2020)

EIS is required in proceedings for away-from-reactor ISFSIs licensed pursuant to 10 C.F.R. Part 72; CLI-20-12, 92 NRC 351 (2020)

environmental impacts described in NUREG-2157 are deemed incorporated into the EIS for an independent spent fuel storage installation; CLI-20-13, 92 NRC 457 (2020)

existence of reasonable but unexamined alternatives renders an EIS inadequate; CLI-20-14, 92 NRC 463 (2020)

NEPA is governed by a rule of reason that requires an agency to include only in NEPA documentation information that is reasonably available; CLI-20-8, 92 NRC 255 (2020)

SUBJECT INDEX

NRC Staff is not prevented from using only some of the information in applicant's environmental report; LBP-20-10, 92 NRC 235 (2020)

overall costs of obtaining incomplete or unavailable information in the EIS encompasses financial costs and other costs such as costs in terms of time (delay) and personnel; CLI-20-9, 92 NRC 295 (2020)

purpose of the EIS is to ensure that the agency in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts and to guarantee that the relevant information will be made available to the larger audience; CLI-20-9, 92 NRC 295 (2020)

review was not deficient under 40 C.F.R. § 1502.22 despite lacking information because that information was not essential to selecting between alternatives; CLI-20-8, 92 NRC 255 (2020)

rule of reason is applied in deciding whether claimed deficiencies in NEPA document are significant or merely flyspecks; CLI-20-9, 92 NRC 295 (2020)

rule of reason should govern the decision to prepare an EIS, where the EIS would serve no purpose because the agency was required by law to undertake the action in question; CLI-20-9, 92 NRC 295 (2020)

terrorist attacks are too far removed from the natural or expected consequences of agency action to require environmental analysis in an NRC licensing proceeding; CLI-20-14, 92 NRC 463 (2020)

"unavailable" information includes information the cost of which to gather would be unreasonable in terms of both money and time; CLI-20-9, 92 NRC 295 (2020)

when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking; CLI-20-11, 92 NRC 335 (2020)

where NRC Staff had not adequately identified Native American cultural resources on the site, staff has to show that the information was not reasonably available; CLI-20-9, 92 NRC 295 (2020)

See also Draft Environmental Impact Statement; Final Environmental Impact Statement; Generic Environmental Impact Statement; Supplemental Environmental Impact Statement

ENVIRONMENTAL ISSUES

environmental contentions submitted in an intervention petition are based on applicant's environmental report; CLI-20-8, 92 NRC 255 (2020)

new contentions based on a draft or final Staff NEPA document must be based on information that differs significantly from that previously available; CLI-20-8, 92 NRC 255 (2020)

NRC's findings on NEPA issues for license renewal of nuclear power reactors are addressed and each issue is assigned to a category; CLI-20-11, 92 NRC 335 (2020)

ENVIRONMENTAL REPORT

applicant may incorporate by reference into its ER any information from a prior ER that relates to the facility or site, or any information in a final environmental document previously prepared by the Staff relating to the facility; CLI-20-11, 92 NRC 335 (2020)

applicant must address the environmental implications of a lack of information; CLI-20-11, 92 NRC 335 (2020)

assertion that ER fails to address accident risks posed by aging reactor equipment during a second license renewal term in violation of the National Environmental Policy Act is addressed; CLI-20-11, 92 NRC 335 (2020)

contention impermissibly challenged Continued Storage Rule insofar as it would have applicant describe impacts of spent fuel repackaging in its ER; CLI-20-14, 92 NRC 463 (2020)

contention that ER and safety analysis report failed to consider adverse effect the independent spent fuel storage installation will have on groundwater is inadmissible; CLI-20-14, 92 NRC 463 (2020)

contention that ER fails to address significance of the declining amount of external operating experience due to the early shutdown or retirement of a significant portion of currently operating fleet of reactors is speculative, incorrect, and thus inadmissible; CLI-20-11, 92 NRC 335 (2020)

contention that independent spent fuel storage installation application fails to adequately describe control of subsurface mineral rights and oil and gas and mineral extraction operations is inadmissible; LBP-20-10, 92 NRC 235 (2020)

Continued Storage Rule explicitly excuses applicant from providing a site-specific description of environmental impacts related to spent fuel storage that may occur after the initial 40-year license term; CLI-20-14, 92 NRC 463 (2020)

SUBJECT INDEX

environmental contentions submitted in an intervention petition are based on applicant's ER; CLI-20-8, 92 NRC 255 (2020)

ER requirement applies to applicant seeking a license amendment approving a license termination plan or decommissioning plan under 10 C.F.R. 50.82; CLI-20-12, 92 NRC 351 (2020)

if licensee contemplates performing a decommissioning activity with impacts not enveloped by previous environmental analyses, licensee must submit a license amendment request, together with a supplemental ER evaluating the additional impacts; CLI-20-12, 92 NRC 351 (2020)

inadmissibility of contention that ER and SAR failed to account for effects of storing high-burnup fuel at the proposed ISFSI is upheld; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that ER was insufficient because it did not account for potential waste transportation and packaging issues is upheld; CLI-20-13, 92 NRC 457 (2020)

NRC Staff is not prevented from using only some of the information in applicant's ER; LBP-20-10, 92 NRC 235 (2020)

on issues arising under the National Environmental Policy Act, participants shall file contentions based on applicant's ER; LBP-20-10, 92 NRC 235 (2020)

requirements that must be submitted by any operating license renewal applicant are stated in 10 C.F.R. 51.53(c)(2); CLI-20-11, 92 NRC 335 (2020)

ENVIRONMENTAL REVIEW

agencies are to include essential information in an environmental impact statement unless the overall costs of obtaining it are unreasonable or the means to obtain it are not known; CLI-20-8, 92 NRC 255 (2020)

although adjudicatory hearings can provide for more rigorous public scrutiny of a NEPA environmental review than a public comment period, they are also much more restrictive; CLI-20-9, 92 NRC 295 (2020)

analysis of impacts in the face of unavailable information must be grounded in the rule of reason; CLI-20-9, 92 NRC 295 (2020)

board did not commit legal error by not considering whether NRC Staff made reasonable efforts to acquire missing information because the fundamental issue is inherently factual; CLI-20-8, 92 NRC 255 (2020)

Category 2 issues in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 require additional plant-specific review; CLI-20-11, 92 NRC 335 (2020)

Commission considered claim that applicant must provide a probabilistic analysis of new seismic information or show that the cost of such analysis would be exorbitant; CLI-20-8, 92 NRC 255 (2020)

core requirement of NEPA is that an agency decisionmaker must consider an adequate environmental review before making a decision on a licensing action; CLI-20-9, 92 NRC 295 (2020)

generic analysis of Category 1 issues as specified in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 may be adopted in each plant-specific environmental review; CLI-20-11, 92 NRC 335 (2020)

license amendments that directly affect the actual operation of a facility remain subject to review requirements; CLI-20-12, 92 NRC 351 (2020)

National Environmental Policy Act gives agencies broad discretion to agencies to keep their inquiries within appropriate and manageable boundaries; LBP-20-10, 92 NRC 235 (2020)

NRC Staff has a responsibility under NEPA to preserve important historic, cultural, and natural aspects of our national heritage regardless of whether a federally recognized tribe appears to assert and prosecute a claim; CLI-20-9, 92 NRC 295 (2020)

NRC Staff's review under NEPA is at issue in NRC proceedings because NEPA places legal duties on the NRC, not on license applicants; CLI-20-17, 92 NRC 521 (2020)

overall costs of obtaining incomplete or unavailable information in the environmental impact statement encompasses financial costs and other costs such as costs in terms of time (delay) and personnel; CLI-20-9, 92 NRC 295 (2020)

scope of agency's inquiries must remain manageable if NEPA's goal of ensuring a fully informed and well considered decision is to be accomplished; CLI-20-8, 92 NRC 255 (2020); CLI-20-9, 92 NRC 295 (2020)

some information needed for a NEPA review may prove to be unavailable, unreliable, inapplicable, or simply not adaptable and NRC Staff has been directed to provide a reasonable analysis of available information in such cases; CLI-20-8, 92 NRC 255 (2020)

SUBJECT INDEX

with limited exceptions such as NRC Staff's environmental review, it is the license application, not the Staff review that is at issue in NRC adjudications; CLI-20-17, 92 NRC 521 (2020)

ERROR

allowing the use of engineering judgment is not a legal error, much less one that justifies reconsideration; LBP-20-12, 92 NRC 431 (2020)

board did not commit legal error by not considering whether NRC Staff made reasonable efforts to acquire missing information because the fundamental issue is inherently factual; CLI-20-8, 92 NRC 255 (2020)

even where the record evidence may be understood to support a view sharply different from that of the board does not mean that the board's own view of the evidence was clearly erroneous; CLI-20-8, 92 NRC 255 (2020)

petition claiming that the board's findings of fact are clearly erroneous requires the petitioner to show that the board's findings are not even plausible in light of the record viewed in its entirety; CLI-20-9, 92 NRC 295 (2020)

prejudicial procedural error did not occur in board's admission and reliance on its own exhibits; CLI-20-9, 92 NRC 295 (2020)

standard of clear error for overturning a board's factual findings following a merits hearing is high; CLI-20-8, 92 NRC 255 (2020)

standard of clear error for overturning a board's factual findings means that its findings were not even plausible in light of the full record; CLI-20-8, 92 NRC 255 (2020)

whether NRC Staff's attempts to consult with a tribe adequately fulfilled its NHPA consultation duties is a question of fact subject to the clear error standard of review; CLI-20-9, 92 NRC 295 (2020)

EVIDENCE

admission of a contention, by itself, does not satisfy the burden of going forward; LBP-20-9, 92 NRC 58 (2020)

admission of settlement negotiations into evidence in order to prove or disprove the validity or amount of a disputed claim is prohibited; CLI-20-9, 92 NRC 295 (2020)

affidavit supporting motion to reopen must provide evidence of such quality as to be admissible at an evidentiary hearing; LBP-20-10, 92 NRC 235 (2020)

"another purpose" exception in Fed. R. Evid. 408(b) has been interpreted to include showing that a party acted in bad faith during the negotiations and establishing the intent of the settlement reached; CLI-20-9, 92 NRC 295 (2020)

boards may not base their rulings on documents that are not part of the evidentiary record; LBP-20-9, 92 NRC 58 (2020)

deliberate misconduct generally must be inferred from the objective evidence; LBP-20-11, 92 NRC 409 (2020)

information offered in evidence, even if not specifically stated in the original contention and bases, may be relevant if it falls within the envelope, reach, or focus of the contention when read with the original bases offered for it; LBP-20-9, 92 NRC 58 (2020)

intervenor must provide probative evidence or expert testimony; LBP-20-9, 92 NRC 58 (2020)

licensing board has power to restrict irrelevant, immaterial, unreliable, duplicative, or cumulative evidence and/or arguments; LBP-20-9, 92 NRC 58 (2020)

motion to set aside immediate effectiveness of an enforcement order must state with particularity the reasons why the order is not based on adequate evidence and must be accompanied by affidavits or other evidence relied on; LBP-20-11, 92 NRC 409 (2020)

movant to reopen a record must seek to submit evidence sufficiently compelling to suggest a likelihood of materially affecting the ultimate results in the proceeding; LBP-20-12, 92 NRC 431 (2020)

NRC Staff may rely on additional evidence not cited in an enforcement order, but it may not issue the order based merely on the hope that it will thereafter find the necessary quantum of evidence to sustain the order's immediate effectiveness; LBP-20-11, 92 NRC 409 (2020)

NRC Staff's request to modify license condition relies on internal guidance document that is not part of the evidentiary record for the proceeding, not the subject of a motion for judicial notice, and not cited in Staff's previous filings; LBP-20-12, 92 NRC 431 (2020)

prejudicial procedural error did not occur in board's admission and reliance on its own exhibits; CLI-20-9, 92 NRC 295 (2020)

SUBJECT INDEX

prima facie evidence must be legally sufficient to establish a fact or case unless disproved; LBP-20-9, 92 NRC 58 (2020)

probable cause deals with probabilities and depends on the totality of the circumstances; LBP-20-11, 92 NRC 409 (2020)

probable cause is a fluid concept that is not readily, or even usefully, reduced to a neat set of legal rules; LBP-20-11, 92 NRC 409 (2020)

probable cause is not a high bar; LBP-20-11, 92 NRC 409 (2020)

probable cause of a specific intent crime requires evidence of intent; LBP-20-11, 92 NRC 409 (2020)

probable cause requires only a probability or substantial chance of criminal activity, not an actual showing of such activity; LBP-20-11, 92 NRC 409 (2020)

reasonable assurance standard is equated with a clear preponderance of the evidence; LBP-20-9, 92 NRC 58 (2020)

showing of deliberate misconduct requires reliable, probative, and substantial evidence; LBP-20-11, 92 NRC 409 (2020)

standards do not permit reasonable inferences, but require actual knowledge, and there is no burden on the alleged wrongdoer to refute anything with clear and convincing evidence; LBP-20-11, 92 NRC 409 (2020)

statements made during negotiations may be admitted for another purpose, such as proving bias or prejudice; CLI-20-9, 92 NRC 295 (2020)

supporting information for a contention should be submitted when the contention is filed; CLI-20-11, 92 NRC 335 (2020)

ultimate burden of proof on whether a permit or license should be issued is on applicant, but intervenor has the burden of going forward with evidence to buttress its contention; LBP-20-9, 92 NRC 58 (2020)

See also Adequate Evidence Standard

EVIDENTIARY HEARINGS

although licensing board may refer to the Federal Rules of Evidence for guidance, it is not bound by them; LBP-20-9, 92 NRC 58 (2020)

Commission is highly deferential to board conclusions, particularly where much of the evidence is subject to interpretation; CLI-20-8, 92 NRC 255 (2020)

licensing board normally has considerable discretion in making evidentiary rulings; LBP-20-9, 92 NRC 58 (2020)

licensing boards are expected to review testimony, exhibits, and other evidence carefully to resolve factual disputes; CLI-20-8, 92 NRC 255 (2020)

merely expressing concerns is not sufficient to merit a hearing; LBP-20-7, 92 NRC 1 (2020)

when immediate effectiveness of an enforcement order has been challenged, NRC Staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds for the order and immediate effectiveness is warranted; LBP-20-11, 92 NRC 409 (2020)

EXCEPTIONS

“another purpose” exception in Fed. R. Evid. 408(b) has been interpreted to include showing that a party acted in bad faith during the negotiations and establishing the intent of the settlement reached; CLI-20-9, 92 NRC 295 (2020)

combined license amendment applicant seeks exemption from elements of the AP1000 certified design; LBP-20-8, 92 NRC 23 (2020)

combined license applicant/licensee that references a certified design must provide a plant-specific final safety analysis report consisting of information in the generic design control document for that certified design, as modified and supplemented by any plant-specific departures or exemptions; LBP-20-8, 92 NRC 23 (2020)

emergency planning exemption request that would be implemented by a requested license amendment to reflect reactor facility’s permanently shut down and defueled status is within the scope of the proceeding; LBP-20-7, 92 NRC 1 (2020)

exceptionally grave issue exception warranting discretionary reopening of a record is a narrow one, to be granted rarely and only in truly exceptional circumstances; LBP-20-10, 92 NRC 235 (2020)

exemption from certified reactor design must be based on a finding of the need to ensure adequate protection of the public health and safety and the existence of special circumstance; LBP-20-8, 92 NRC 23 (2020)

SUBJECT INDEX

interested person may request that the Commission make the determination that special circumstances exist that warrant an exception to the categorical exclusion; CLI-20-12, 92 NRC 351 (2020)
NRC has authority to grant regulatory exemptions; LBP-20-7, 92 NRC 1 (2020)
Tier 2* information is that portion of Tier 2 information, in the generic DCD, for which any plant-specific change by a COL applicant/licensee mandates a license amendment but not an exemption; LBP-20-8, 92 NRC 23 (2020)

EXEMPTIONS

applicant seeks exemption to use decommissioning trust fund to pay not only for decommissioning costs but also for spent fuel management and nonradiological site restoration costs; CLI-20-12, 92 NRC 351 (2020)

EXPRESSIO UNIUS EST EXCLUSIO ALTERIUS

basic canon of statutory construction is that the express mention of one thing excludes all others; CLI-20-11, 92 NRC 335 (2020)

EXTENSION OF TIME

when licensee applies to renew its license at least 30 days prior to expiration, the license is effectively extended until a final decision is made on the application; CLI-20-8, 92 NRC 255 (2020)

FAIRNESS

board applies appropriate evidentiary weight to testimony to ensure that the hearing is fair and produces an adequate record; LBP-20-9, 92 NRC 58 (2020)

FAULTS

consideration of information regarding a nearby seismic fault for a site in which seismic hazards were acknowledged to be disproportionately dominant risk hazards in a severe accident mitigation alternatives analysis is material to the analysis of environmental impacts; CLI-20-11, 92 NRC 335 (2020)

FEDERAL RULES OF EVIDENCE

admission of settlement negotiations into evidence in order to prove or disprove the validity or amount of a disputed claim is prohibited; CLI-20-9, 92 NRC 295 (2020)

although Federal Rules of Evidence do not apply directly to NRC proceedings, boards look to them as guidance; CLI-20-9, 92 NRC 295 (2020)

although licensing board may refer to the Federal Rules of Evidence for guidance, it is not bound by them; LBP-20-9, 92 NRC 58 (2020)

“another purpose” exception in Rule 408(b) has been interpreted to include showing that a party acted in bad faith during the negotiations and establishing the intent of the settlement reached; CLI-20-9, 92 NRC 295 (2020)

licensing boards do not require strict rules of evidence to prevent presentation of unfair and prejudicial evidence to a jury; LBP-20-9, 92 NRC 58 (2020)

statements made during negotiations may be admitted for another purpose, such as proving bias or prejudice; CLI-20-9, 92 NRC 295 (2020)

FINAL ENVIRONMENTAL IMPACT STATEMENT

it would be preferable for the FEIS to contain all relevant information and the record of decision to be complete and adequate before the license is issued; CLI-20-9, 92 NRC 295 (2020)

FINAL SAFETY ANALYSIS REPORT

circumstances under which licensee may make changes to its facility as described in its updated FSAR are set forth in 10 C.F.R. 50.59; LBP-20-9, 92 NRC 58 (2020)

COL applicant/licensee that references a certified design must provide a plant-specific FSAR consisting of information in the generic design control document, as modified and supplemented by any plant-specific departures or exemptions; LBP-20-8, 92 NRC 23 (2020)

licensee must obtain a license amendment pursuant to section 50.90 before implementing a proposed change if the change would result in a departure from a method of evaluation described in the updated FSAR used in establishing the design bases or in the safety analyses; LBP-20-9, 92 NRC 58 (2020)

where analytical methodology is an essential part of the conclusion that the facility meets the required design bases, the updated FSAR must describe the specific analytical methods; LBP-20-9, 92 NRC 58 (2020)

FINALITY

NRC Staff's significant hazards consideration determination is final, subject only to the Commission's discretion, on its own initiative, to review the determination; LBP-20-7, 92 NRC 1 (2020)

SUBJECT INDEX

FINANCIAL ASSURANCE

additional financial assurance might be in the form of a deposit to the trust fund or other prepayment, a parent guarantee, or other method that NRC Staff may approve; CLI-20-12, 92 NRC 351 (2020)

annual report on status of spent fuel management funding must specify amount of funds available to cover cost of managing the spent fuel and projected cost of managing the fuel until DOE takes title to and possession of the fuel; CLI-20-12, 92 NRC 351 (2020)

because an illegal contract is unenforceable, applicant plainly could not rely on such contracts to ensure its operating funds; CLI-20-14, 92 NRC 463 (2020)

if annual decommissioning financial assurance status report predicts a shortfall in funding, licensee must provide additional financial assurance; CLI-20-12, 92 NRC 351 (2020)

if available funds are not sufficient to cover projected cost of managing the spent fuel, annual report must include a plan to obtain additional funds; CLI-20-12, 92 NRC 351 (2020)

if remaining decommissioning funds together with projected earnings on those funds are not sufficient to cover estimated cost to complete decommissioning, licensee must include in the status report additional financial assurance to cover remaining estimated costs; CLI-20-12, 92 NRC 351 (2020)

if spent fuel management funding does not cover projected costs, licensee would need to provide a funding plan in the annual status report to cover the costs; CLI-20-12, 92 NRC 351 (2020)

in license transfer adjudications, financial assurance is deemed to be acceptable if it is based on plausible assumptions and forecasts, even if the possibility is not insignificant that things will turn out less favorably than expected; CLI-20-12, 92 NRC 351 (2020)

license application must provide financial assurance for decommissioning through prepayment, a surety, insurance, or other guarantee method, or an external sinking fund; CLI-20-15, 92 NRC 491 (2020)

licensee must annually continue to show adequate funding until the license has been terminated and all spent fuel has been removed from the site; CLI-20-12, 92 NRC 351 (2020)

licensee must provide every year in the financial assurance status report an estimate of the cost to complete decommissioning and the decommissioning criteria on which the estimate is based; CLI-20-12, 92 NRC 351 (2020)

licensee must provide to NRC, for its review and preliminary approval, a program to manage and to provide funding for managing all spent fuel at the reactor; CLI-20-12, 92 NRC 351 (2020)

licensee that has submitted its site-specific decommissioning cost estimate must submit to NRC a financial assurance status report every year containing specific information; CLI-20-12, 92 NRC 351 (2020)

mere casting of doubt on some aspects of proposed funding plans is not by itself sufficient to defeat a finding of reasonable assurance; CLI-20-12, 92 NRC 351 (2020)

potential safety impacts, if any, from a shortfall in financial funding for decommissioning would not be so direct or immediate as the safety impacts of significant technical deficiencies; CLI-20-12, 92 NRC 351 (2020)

status report must include an estimate of costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year, and decommissioning criteria upon which the estimate is based; CLI-20-12, 92 NRC 351 (2020)

FINANCIAL QUALIFICATIONS

demonstration of reasonable assurance of financial qualification is flexible; CLI-20-12, 92 NRC 351 (2020)

license transfer applicant for a reactor that has permanently ceased operating must demonstrate that it has the financial qualifications to pay for managing the spent fuel on the site; CLI-20-12, 92 NRC 351 (2020)

license transfer applicant must demonstrate its qualifications; CLI-20-12, 92 NRC 351 (2020)

license transfer applicants need not demonstrate financial qualification to cover power reactor operating costs if reactor operations have permanently ceased; CLI-20-12, 92 NRC 351 (2020)

licensee who would remain an electric utility is not required to demonstrate its financial qualifications in a license transfer application; CLI-20-7, 92 NRC 225 (2020)

NRC oversight of financial ability to decommission a facility and to manage the spent fuel on the site does not end after the financial qualification review; CLI-20-12, 92 NRC 351 (2020)

prepayment is an acceptable method of demonstrating financial assurance of decommissioning funding; CLI-20-12, 92 NRC 351 (2020)

SUBJECT INDEX

FINANCIAL QUALIFICATIONS REVIEW

license transfer application must provide reasonable assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 351 (2020)
license transfer review is limited to specific matters, including technical and financial qualifications of proposed transferee; CLI-20-12, 92 NRC 351 (2020)
to determine financial qualifications, NRC will require the minimum amount of information necessary for that purpose; CLI-20-12, 92 NRC 351 (2020)

FINDING OF NO SIGNIFICANT IMPACT

appropriate NRC Staff director may make a determination to prepare and issue a draft finding of no significant impact for public review and comment before making a final determination; CLI-20-8, 92 NRC 255 (2020)

FINDINGS OF FACT

Commission gives the highest deference to findings of fact that turn on witness credibility; CLI-20-9, 92 NRC 295 (2020)
Commission is highly deferential to licensing board findings, particularly where much of the evidence is subject to interpretation; CLI-20-9, 92 NRC 295 (2020)
motion to respond to applicant's proposed findings of fact and conclusions of law was denied because such an additional round of filings would go well beyond the submissions authorized; LBP-20-9, 92 NRC 58 (2020)
petition claiming that the board's findings of fact are clearly erroneous requires the petitioner to show that the board's findings are not even plausible in light of the record viewed in its entirety; CLI-20-9, 92 NRC 295 (2020)

FIRES

structures, systems, and components important to safety must be designed and located so that they can continue to perform their safety functions effectively under credible fire and explosion exposure conditions; CLI-20-14, 92 NRC 463 (2020)

FLOODS

evaluation of impacts of the proposed facility being in the 100-year floodplain is discussed; CLI-20-15, 92 NRC 491 (2020)
use of a 500-year floodplain in siting a facility is discussed; CLI-20-15, 92 NRC 491 (2020)

FUEL

See High-Burnup Fuel; Spent Fuel Management; Spent Fuel Pools

GENERAL DESIGN CRITERIA

all structures, systems, and components important to safety must be designed to accommodate effects of and to be compatible with environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents and be appropriately protected against dynamic effects; LBP-20-9, 92 NRC 58 (2020)
all structures, systems, and components important to safety must be designed to withstand effects of natural phenomena without loss of capability to perform their safety functions; LBP-20-9, 92 NRC 58 (2020)
generally recognized codes and standards must be identified and evaluated to determine their applicability, adequacy, and sufficiency and supplemented or modified as necessary to ensure a quality product; LBP-20-9, 92 NRC 58 (2020)
in addition to satisfying the reasonable assurance standard, licensee must comply with GDC; LBP-20-9, 92 NRC 58 (2020)
requirements are satisfied by demonstrating that the containment will continue to meet GDC 1 and 2 for all design-basis loads and load combinations including alkali-silica reaction under normal and accident conditions; LBP-20-9, 92 NRC 58 (2020)
requirements are satisfied where design-basis loads and load combinations include dynamic effects associated with missiles, pipe whipping, and discharging fluids; LBP-20-9, 92 NRC 58 (2020)

GENERIC ENVIRONMENTAL IMPACT STATEMENT

challenges to generic findings codified in NRC rules are barred; CLI-20-11, 92 NRC 335 (2020)
decommissioning generic environmental impact statement reflects NRC's determination that decommissioning is not itself a major federal action and serves to establish an envelope of environmental impacts associated with decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

SUBJECT INDEX

environmental impacts described in NUREG-2157 are deemed incorporated into the environmental impact statement for an independent spent fuel storage installation; CLI-20-13, 92 NRC 457 (2020)

environmental impacts resulting from disposal of concrete casks and storage pads from an ISFSI are generically described in the Continued Storage GEIS, which is incorporated into the Continued Storage Rule; CLI-20-14, 92 NRC 463 (2020)

generic analysis of Category 1 issues as specified in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 may be adopted in each plant-specific environmental review; CLI-20-11, 92 NRC 335 (2020)

generic effects of transportation of fuel waste for one power reactor is based on a survey of then-existing power plants; CLI-20-14, 92 NRC 463 (2020)

in PSDAR, licensee must provide its reasons for concluding that environmental impacts associated with planned decommissioning activities are bounded by previously issued, relevant site-specific or GEIS; CLI-20-12, 92 NRC 351 (2020)

GENERIC ISSUES

NRC has generically determined that any amendment to a power reactor or ISFSI license that does not more than conform the license to reflect the transfer action involves no significant hazards consideration; CLI-20-12, 92 NRC 351 (2020)

GEOLOGIC CONDITIONS

acceptable investigative methods to ensure site stability are onsite foundation and geological investigation, literature review, and regional geological reconnaissance; CLI-20-14, 92 NRC 463 (2020)

applicant must analyze the entire region in which the proposed site is located for unstable geological characteristics; CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that application failed to account for unstable geological characteristics and soil stability problems attributable to abandoned and orphan oil and gas wells in the region is upheld; CLI-20-14, 92 NRC 463 (2020)

GOOD CAUSE

new or amended contentions can be justified if a contention is based on information that was not previously available, is materially different from information previously available, and has been submitted in a timely fashion based on the availability of the subsequent information; CLI-20-8, 92 NRC 255 (2020)

new or amended contentions will not be entertained unless the presiding officer determines that there is good cause for the filing; CLI-20-8, 92 NRC 255 (2020)

to demonstrate good cause for filing after the initial deadline for intervention petitions, petitioner must also submit contentions that meet the applicable contention admissibility requirements; CLI-20-17, 92 NRC 521 (2020)

GROUNDWATER CONTAMINATION

contention that environmental report and safety analysis report failed to consider adverse effect the independent spent fuel storage installation will have on groundwater is inadmissible; CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that ISFSI application does not accurately and adequately evaluate and consider impacts to groundwater is upheld; CLI-20-15, 92 NRC 491 (2020)

HEALTH AND SAFETY

immediately effective enforcement order may cause a person to suffer loss of employment while the order is being adjudicated but the effects of health and safety violations are paramount over an individual's right of employment; LBP-20-11, 92 NRC 409 (2020)

requested license amendment would preclude a finding that it provides reasonable assurance of adequate protection of public health and safety; LBP-20-9, 92 NRC 58 (2020)

HEARING REQUESTS

reply cannot expand the scope of the arguments set forth in the original hearing request; LBP-20-10, 92 NRC 235 (2020)

See also Amendment of Hearing Requests; Demand for Hearing

HEARING REQUIREMENTS

operation of reactor requires a separate operating license application and review by NRC, which would also give rise to a hearing opportunity; CLI-20-16, 92 NRC 511 (2020)

SUBJECT INDEX

HEARING RIGHTS

for the hearing opportunity afforded interested persons by the Atomic Energy Act to remain meaningful, NRC Staff must turn square corners in ensuring hearing requestors have appropriate access to applicant information provided to NRC for use in the license application review process; LBP-20-8, 92 NRC 23 (2020)

HIGH-BURNUP FUEL

claims that high-burnup fuel could rupture licensed casks is an impermissible challenge to the certified design of the casks; CLI-20-15, 92 NRC 491 (2020)
contention that potential use of experimental, higher enriched and longer burnup fuel has not undergone adequate evaluation as pertains to being placed into spent fuel pool and subsequent impact on criticality is inadmissible; LBP-20-7, 92 NRC 1 (2020)
inadmissibility of contention that environmental report and SAR failed to account for effects of storing high-burnup fuel at the proposed ISFSI is upheld; CLI-20-15, 92 NRC 491 (2020)

IMMEDIATE EFFECTIVENESS

adequate evidence to justify immediate effectiveness of an enforcement order requires a showing that the order is based on more than mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 409 (2020)
application of adequate evidence standard to immediately effective orders strikes a reasonable balance between NRC's ability to protect public health, safety, or interest on the basis of reasonably trustworthy information while still providing affected parties with a measure of protection against arbitrary enforcement action by NRC; LBP-20-11, 92 NRC 409 (2020)
"knowingly" requirement needed to support an immediately effective order is to be distinguished from mere willfulness, which can be established by showing merely an act of careless disregard; LBP-20-11, 92 NRC 409 (2020)
license amendment may be issued on an immediately effective basis upon a determination that the amendment involves no significant hazards consideration, notwithstanding the pendency of a hearing request; CLI-20-12, 92 NRC 351 (2020)
licensee or any other person adversely affected by an immediately effective enforcement order may demand a hearing on the merits of the order; LBP-20-11, 92 NRC 409 (2020)
licensee or any other person adversely affected by an immediately effective enforcement order may move the presiding officer to set aside the immediate effectiveness of the order; LBP-20-11, 92 NRC 409 (2020)
motion to set aside immediate effectiveness of an enforcement order must state with particularity the reasons why the order is not based on adequate evidence and must be accompanied by affidavits or other evidence relied on; LBP-20-11, 92 NRC 409 (2020)
NRC is authorized to issue immediately effective enforcement orders if it finds that public health, safety, or interest so requires or that the violation or conduct causing the violation is willful; LBP-20-11, 92 NRC 409 (2020)
NRC may issue and make immediately effective any amendment to an operating license; LBP-20-7, 92 NRC 1 (2020)
NRC may make a license amendment immediately effective upon a determination by the Commission that such amendment involves no significant hazards consideration; LBP-20-7, 92 NRC 1 (2020)
NRC Staff may rely on additional evidence not cited in an enforcement order, but it may not issue the order based merely on the hope that it will thereafter find the necessary quantum of evidence to sustain the order's immediate effectiveness; LBP-20-11, 92 NRC 409 (2020)
to set aside immediate effectiveness of an enforcement order, alleged wrongdoer bears the burden of going forward with evidence that the order is not based on adequate evidence but on mere suspicion, unfounded allegations, or error; LBP-20-11, 92 NRC 409 (2020)
when immediate effectiveness of an enforcement order has been challenged, NRC Staff bears the burden of persuading the presiding officer that adequate evidence supports the grounds for the order and immediate effectiveness is warranted; LBP-20-11, 92 NRC 409 (2020)

IMMEDIATE EFFECTIVENESS REVIEW

when an immediate effectiveness determination is challenged, NRC Staff must satisfy a two-part test; LBP-20-11, 92 NRC 409 (2020)

SUBJECT INDEX

INCORPORATION BY REFERENCE

applicant may incorporate by reference into its environmental report any information from a prior environmental report that relates to the facility or site, or any information in a final environmental document previously prepared by the Staff relating to the facility; CLI-20-11, 92 NRC 335 (2020)
petitioner who has not independently established compliance with admission requirements by submitting at least one admissible issue of its own is not allowed to incorporate another's issues by reference; CLI-20-12, 92 NRC 351 (2020)

INDEPENDENT SPENT FUEL STORAGE INSTALLATION

applicant is not required to address impacts of spent nuclear fuel storage beyond the license term; CLI-20-13, 92 NRC 457 (2020)
applicant must analyze the entire region in which the proposed site is located for unstable geological characteristics; CLI-20-14, 92 NRC 463 (2020)
application must evaluate structures, systems, and components designed to prevent and mitigate accidents; CLI-20-14, 92 NRC 463 (2020)
contention that environmental report and safety analysis report failed to consider adverse effect the ISFSI will have on groundwater is inadmissible; CLI-20-14, 92 NRC 463 (2020)
decommissioning cost estimate for ISFSI must contain an adequate contingency factor; CLI-20-12, 92 NRC 351 (2020)
difference in potential risk between a reactor and an ISFSI justified a determination that proximity-based standing was not available in ISFSI direct license transfer proceeding; CLI-20-16, 92 NRC 511 (2020)
environmental impact statement is required in proceedings for away-from-reactor ISFSIs licensed pursuant to 10 C.F.R. Part 72; CLI-20-12, 92 NRC 351 (2020)
environmental impacts described in NUREG-2157 are deemed incorporated into the environmental impact statement for an ISFSI; CLI-20-13, 92 NRC 457 (2020)
environmental impacts resulting from disposal of concrete casks and storage pads from an ISFSI are generically described in the Continued Storage GEIS, which is incorporated into the Continued Storage Rule; CLI-20-14, 92 NRC 463 (2020)
evaluation of impacts of the proposed facility being in the 100-year floodplain is discussed; CLI-20-15, 92 NRC 491 (2020)
inadmissibility of contention that application failed to account for unstable geological characteristics and soil stability problems attributable to abandoned and orphan oil and gas wells in the region is upheld; CLI-20-14, 92 NRC 463 (2020)
license application must include information about site geology and seismology, including induced seismicity related to petroleum recovery; CLI-20-14, 92 NRC 463 (2020)
license application must provide financial assurance for decommissioning through prepayment, a surety, insurance, or other guarantee method, or an external sinking fund; CLI-20-15, 92 NRC 491 (2020)
license transfer application for ISFSI must provide reasonable assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 351 (2020)
licensee must submit to NRC an ISFSI decommissioning funding plan at least every 3 years with adjustments as necessary to account for changes in costs; CLI-20-12, 92 NRC 351 (2020)
licensee who is relying on the decommissioning trust fund to pay for ISFSI decommissioning costs will need to provide this information in an annual financial status report on decommissioning; CLI-20-12, 92 NRC 351 (2020)
probability of an aircraft crash into an ISFSI is addressed; CLI-20-14, 92 NRC 463 (2020)
threshold probability for a design basis event (whether an event is credible) should be one in one million for a spent fuel storage installation; CLI-20-14, 92 NRC 463 (2020)
use of a 500-year floodplain in siting a facility is discussed; CLI-20-15, 92 NRC 491 (2020)
whether ISFSI applicant finds the option of contracting directly with power plant owners commercially viable in the future is not an issue material to the license proceeding; CLI-20-15, 92 NRC 491 (2020)

INDEPENDENT SPENT FUEL STORAGE INSTALLATION PROCEEDINGS

appellant would have to show that ISFSI applicant's accident consequences analysis was unreasonable or that appellant's proposed methodology would be more appropriate; CLI-20-15, 92 NRC 491 (2020)
board found standing on the basis of members who lived several miles away from ISFSI; LBP-20-7, 92 NRC 1 (2020)

SUBJECT INDEX

board rejected ISFSI applicant's claim that petitioners must first demonstrate with specificity how radiation might reach them; LBP-20-7, 92 NRC 1 (2020)

claim that applicant underestimated volume of low-level radioactive waste at proposed ISFSI is an impermissible attack on that rule; CLI-20-14, 92 NRC 463 (2020)

contention that ISFSI application fails to adequately, accurately, completely, and consistently describe control of subsurface mineral rights and oil and gas and mineral extraction operations is inadmissible; LBP-20-10, 92 NRC 235 (2020)

inadmissibility of contention that emergency response plan for ISFSI was deficient in failing to account for aircraft crashes and other hazards is upheld; CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that environmental report was insufficient because it did not account for potential waste transportation and packaging issues is upheld; CLI-20-13, 92 NRC 457 (2020)

inadmissibility of contention that ISFSI applicant had not provided reasonable assurance that it will have the necessary funds for decommissioning is upheld; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that ISFSI application does not accurately and adequately evaluate and consider impacts to groundwater is upheld; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that ISFSI application's discussion of the potential impacts from earthquakes induced by oil and gas activities is upheld; CLI-20-15, 92 NRC 491 (2020)

ISFSI is a passive structure and the distance it takes to be realistically threatened is less than that for a power reactor; CLI-20-15, 92 NRC 491 (2020)

residence six miles from proposed ISFSI site is well within the distance for which standing has been found at similar and much smaller materials facilities; CLI-20-15, 92 NRC 491 (2020)

standing was granted based on petitioner's member's residence within 10 miles and significant activities within approximately 3 miles of proposed large consolidated ISFSI; CLI-20-16, 92 NRC 511 (2020)

INFERENCE

NRC Staff is permitted to draw inferences based on the "reasonable person" standard; LBP-20-11, 92 NRC 409 (2020)

NRC Staff may infer whether a protected activity is a contributing factor to an adverse personnel action if it shows a reasonable person could infer that protected activities influenced the unfavorable personnel action to some degree; LBP-20-11, 92 NRC 409 (2020)

standards do not permit reasonable inferences, but require actual knowledge, and there is no burden on the alleged wrongdoer to refute anything with clear and convincing evidence; LBP-20-11, 92 NRC 409 (2020)

INITIAL DECISIONS

any argument asserting a license condition renders a decision invalid because it permits some degree of engineering judgment is incorrect; LBP-20-12, 92 NRC 431 (2020)

boards publish no new information, but rather its analysis of the extensive evidentiary record created by the parties through their exhibits and witness responses to board questions; LBP-20-12, 92 NRC 431 (2020)

INJURY IN FACT

concern that reactors are inherently dangerous presents an undefined potential for radiological harm from the ultimate construction and operation of the reactors; CLI-20-16, 92 NRC 511 (2020)

injury that established standing must be both concrete and particularized, not conjectural, or hypothetical; CLI-20-16, 92 NRC 511 (2020)

intervenor's injury must be both concrete and particularized, not conjectural, or hypothetical; CLI-20-7, 92 NRC 225 (2020)

petitioner must specify the facts pertaining to its interest; CLI-20-16, 92 NRC 511 (2020)

petitioner's asserted injury must be arguably within the zone of interests protected by the governing statute; CLI-20-12, 92 NRC 351 (2020)

to address the injury requirement, an organization must show that the licensing action would constitute a threat to its organizational interests; CLI-20-7, 92 NRC 225 (2020)

to demonstrate injury in fact, petitioners must show that they will in fact be perceptibly harmed by the challenged agency action, not that they can imagine circumstances in which they could be affected by the agency's action; CLI-20-16, 92 NRC 511 (2020)

SUBJECT INDEX

to establish standing, petitioner must identify an actual or threatened injury that is fairly traceable to the challenged action, is likely to be redressed by a favorable decision, and arguably falls within the zone of interests protected by the AEA or other relevant statute; CLI-20-16, 92 NRC 511 (2020)

INSPECTION

lack of any specific directive as to when additional inspections for alkali-silica reaction must be performed on seismic Category I structures creates a reasonable possibility of a violation of the maintenance rule; LBP-20-9, 92 NRC 58 (2020)

INTENT

probable cause of a specific intent crime requires evidence of intent; LBP-20-11, 92 NRC 409 (2020)

INTEREST

NRC does not recognize standing for an organization that seeks to raise environmental or safety matters that are of general concern but do not directly affect the organization's own interests; CLI-20-7, 92 NRC 225 (2020)

organizational interests must be germane to its own purpose, and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-20-7, 92 NRC 225 (2020)

petitioner must identify an interest in the proceeding by claiming an actual or threatened injury that is fairly traceable to the challenged action, is likely to be redressed by a favorable decision, and arguably falls within the zone of interests protected by the AEA; CLI-20-7, 92 NRC 225 (2020)

petitioner must specify the facts pertaining to its interest; CLI-20-7, 92 NRC 225 (2020); CLI-20-16, 92 NRC 511 (2020)

to determine whether petitioner has sufficient interest, contemporaneous judicial concepts of standing are applied; LBP-20-7, 92 NRC 1 (2020)

See also Economic Interests; Property Interests

INTERVENTION

to intervene in NRC licensing proceedings, petitioner must show standing to intervene and submit at least one admissible contention for hearing; CLI-20-12, 92 NRC 351 (2020); LBP-20-8, 92 NRC 23 (2020)

INTERVENTION PETITIONERS

petitioner has the burden to demonstrate that standing requirements are met; LBP-20-7, 92 NRC 1 (2020)

INTERVENTION PETITIONS

in addition to demonstrating standing, petitioner must proffer at least one admissible contention; LBP-20-7, 92 NRC 1 (2020)

information that petitioner should include in its petition to establish standing is set out in 10 C.F.R. 2.309(d) but the standard the board must apply when deciding whether that information is sufficient is not; LBP-20-7, 92 NRC 1 (2020)

petition generally will be construed in petitioner's favor as it seeks to demonstrate standing; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

requirements for standing are not strict by design, in contrast to NRC's contention admissibility requirements; LBP-20-7, 92 NRC 1 (2020)

to establish standing, petition must include name, address and telephone number of petitioner, nature of petitioner's right to be made a party, nature and extent of petitioner's interest, and possible effect of any resulting decision or order on petitioner's interest; LBP-20-8, 92 NRC 23 (2020)

INTERVENTION RULINGS

appeal of a decision wholly denying a request for hearing is a matter of right; CLI-20-11, 92 NRC 335 (2020)

Commission affords substantial deference to board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-8, 92 NRC 255 (2020); CLI-20-11, 92 NRC 335 (2020); CLI-20-13, 92 NRC 457 (2020); CLI-20-14, 92 NRC 463 (2020); CLI-20-15, 92 NRC 491 (2020)

decision on standing is not a ruling on either admissibility or merits of contentions; LBP-20-8, 92 NRC 23 (2020)

information that petitioner should include in its petition to establish standing is set out in 10 C.F.R. 2.309(d) but the standard the board must apply when deciding whether that information is sufficient is not; LBP-20-7, 92 NRC 1 (2020)

SUBJECT INDEX

ITAAC

challenge to ITAAC in combined license amendment proceeding is outside the scope of the proceeding; LBP-20-8, 92 NRC 23 (2020)

petitioner seeking to challenge acceptance criteria for a combined license must establish a prima facie case that such criteria have not been, or will not be, met; LBP-20-8, 92 NRC 23 (2020)

LEGAL AUTHORITIES

unreviewed board decisions are not binding on future boards but may be cited by future litigants as persuasive authority; LBP-20-9, 92 NRC 58 (2020)

LEGAL ISSUES

Commission reviews a board's legal rulings de novo, but only takes review where petitioner shows that the board's rulings on a substantial and important question of law is without precedent or contrary to precedent; CLI-20-9, 92 NRC 295 (2020)

petition for discretionary review must demonstrate that a necessary legal conclusion that the board made is without governing precedent, is a departure from or contrary to established law, or raises a substantial and important question of law, policy, or discretion; CLI-20-9, 92 NRC 295 (2020)

LICENSE AMENDMENT PROCEEDINGS

although contention was within the scope of the proceeding, it failed to factually support and dispute specific portions of the license amendment request with regard to emergency response; CLI-20-10, 92 NRC 327 (2020)

applicant carries the burden of proof on the issue whether there is reasonable assurance that operation of a plant, as modified by the license amendment request, will not endanger the health and safety of the public; LBP-20-9, 92 NRC 58 (2020)

burden falls on petitioner to demonstrate plausibility of offsite consequences; LBP-20-7, 92 NRC 1 (2020)

challenges to current licensing basis of a plant are not within the scope of the proceeding, being challenged more properly through a request for enforcement action; LBP-20-7, 92 NRC 1 (2020)

Commission has rejected proximity standing for license amendments associated with shut down and defueled reactors; LBP-20-8, 92 NRC 23 (2020)

contention questioning licensee's character is inadmissible; LBP-20-7, 92 NRC 1 (2020)

contention that challenges a license amendment must confine itself to health, safety, or environmental issues fairly raised by the license amendment; LBP-20-7, 92 NRC 1 (2020)

emergency planning exemption request that would be implemented by a requested license amendment to reflect reactor facility's permanently shut down and defueled status is within the scope of the proceeding; LBP-20-7, 92 NRC 1 (2020)

in making a case-by-case determination of reasonable assurance, board must weigh expert testimony and give an expert due weight proportionate to his/her expertise; LBP-20-9, 92 NRC 58 (2020)

license amendment application will lack NRC's final approval until and unless the Commission concludes the adjudication in applicants' favor; CLI-20-12, 92 NRC 351 (2020)

NRC must grant a hearing upon the request of any person whose interest may be affected by the proceeding; LBP-20-7, 92 NRC 1 (2020)

proximity plus standard is applied on a case-by-case basis, taking into account nature of the proposed action and significance of the radioactive source; LBP-20-7, 92 NRC 1 (2020)

proximity presumption applies only if the challenged license amendments present an obvious potential for offsite radiological consequences; LBP-20-8, 92 NRC 23 (2020)

See also Combined License Amendment Proceedings

LICENSE AMENDMENTS

amendment may be issued on an immediately effective basis upon a determination that the amendment involves no significant hazards consideration, notwithstanding the pendency of a hearing request; CLI-20-12, 92 NRC 351 (2020)

amendment request must provide sufficient documentation and analysis to show that licensee has complied with the relevant requirements; LBP-20-9, 92 NRC 58 (2020)

application for amendment, including in technical specifications, must fully describe changes desired in the license; LBP-20-9, 92 NRC 58 (2020)

board has authority to revoke or place conditions on a license amendment if it determines that NRC Staff should not have granted it; LBP-20-9, 92 NRC 58 (2020)

SUBJECT INDEX

circumstances under which licensee may make changes to its facility as described in its updated FSAR are set forth in 10 C.F.R. 50.59; LBP-20-9, 92 NRC 58 (2020)

consideration of alternative structural monitoring techniques is beyond the scope of NRC Staff review of license amendment request; LBP-20-9, 92 NRC 58 (2020)

contention that specific analysis of the spent fuel pool as currently loaded is needed prior to consideration of license amendment is inadmissible; LBP-20-7, 92 NRC 1 (2020)

environmental report requirement applies to applicant seeking a license amendment approving a license termination plan or decommissioning plan under 10 C.F.R. 50.82; CLI-20-12, 92 NRC 351 (2020)

if licensee contemplates performing a decommissioning activity with impacts not enveloped by previous environmental analyses, licensee must submit a license amendment request, together with a supplemental environmental report evaluating the additional impacts; CLI-20-12, 92 NRC 351 (2020)

in determining whether a license or permit amendment will be issued to applicant, Commission is guided by considerations governing issuance of initial licenses or permits to the extent applicable and appropriate; LBP-20-8, 92 NRC 23 (2020); LBP-20-9, 92 NRC 58 (2020)

information that a license amendment request must provide is described in 10 C.F.R. 50.57(a)(3) and (a)(6); LBP-20-9, 92 NRC 58 (2020)

issuance of an amendment during pendency of a hearing on the amendment is allowed as long as NRC has first determined that the amendment involves no significant hazards consideration; LBP-20-9, 92 NRC 58 (2020)

license amendments that directly affect the actual operation of a facility remain subject to the environmental review requirements; CLI-20-12, 92 NRC 351 (2020)

licensee may take action without obtaining an amendment if there is no change to the facility's technical specifications; LBP-20-9, 92 NRC 58 (2020)

licensee must obtain an amendment pursuant to section 50.90 before implementing a proposed change if the change would result in a departure from a method of evaluation described in the updated final safety analysis report used in establishing the design bases or in the safety analyses; LBP-20-9, 92 NRC 58 (2020)

no additional NEPA analysis was necessary where a license amendment request falls within categorical exclusions; CLI-20-10, 92 NRC 327 (2020)

NRC has generically determined that any amendment to a power reactor or ISFSI license that does not more than conform the license to reflect the transfer action involves no significant hazards consideration; CLI-20-12, 92 NRC 351 (2020)

NRC may make an amendment immediately effective upon a determination that such amendment involves no significant hazards consideration; LBP-20-7, 92 NRC 1 (2020)

petitioner is barred from requesting a delay of issuance of an amendment by NRC until the Commission reviews NRC Staff's no significant hazards consideration determination; LBP-20-9, 92 NRC 58 (2020)

requested amendment would preclude a finding that it provides reasonable assurance of adequate protection of public health and safety; LBP-20-9, 92 NRC 58 (2020)

requests to modify conditions imposed in renewed licenses must be fully justified and approved by NRC Staff using the same considerations that originally governed issuance of the renewed license; LBP-20-7, 92 NRC 1 (2020)

section 51.53(d) applies to applicants for a license amendment authorizing decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

to support a no significant hazards consideration determination, a proposed amendment must not significantly increase probability or consequences of an accident previously evaluated, or create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a significant reduction in a margin of safety; LBP-20-7, 92 NRC 1 (2020)

See also Combined License Amendments

LICENSE APPLICATIONS

application is only noticed for a possible hearing once it has been accepted, or docketed, by NRC Staff; CLI-20-17, 92 NRC 521 (2020)

applications are neither accepted for full review by NRC Staff nor automatically noticed for a possible hearing when it is submitted; CLI-20-17, 92 NRC 521 (2020)

SUBJECT INDEX

Commission does not encourage defective applications, but also does not take intervenors' absolutist position that an application, however minimally flawed, must be rejected altogether, and may not be modified or improved as NRC review goes forward; CLI-20-17, 92 NRC 521 (2020)

if petitioners believe that an application is incomplete in some way, they may file a contention to that effect; CLI-20-17, 92 NRC 521 (2020)

in conducting the preliminary acceptance review, NRC Staff reviews the application to ensure it contains information and analyses required in a proper application to allow Staff's full review of the proposed licensing action; CLI-20-17, 92 NRC 521 (2020)

in deciding whether to accept an application for docketing, NRC Staff does not consider technical or legal merits of the application but rather simply screens it to determine whether it contains sufficient information for NRC to begin its safety review; CLI-20-17, 92 NRC 521 (2020)

issuance of requests for additional information alone does not establish deficiencies in an application or that the NRC Staff will find any applicant responses unsatisfactory; LBP-20-10, 92 NRC 235 (2020)

issue for decision is not whether NRC Staff performed well, but whether the license application raises health and safety concerns; CLI-20-17, 92 NRC 521 (2020)

that NRC Staff is asking for more information does not make an application incomplete; CLI-20-17, 92 NRC 521 (2020)

upon receipt, application for a licensing action is subject to initial Staff review to ensure that it is complete and acceptable for docketing; LBP-20-8, 92 NRC 23 (2020)

See also License Renewal Applications; License Transfer Applications; Operating License Applications

LICENSE CONDITIONS

any argument asserting a license condition renders a decision invalid because it permits some degree of engineering judgment is incorrect; LBP-20-12, 92 NRC 431 (2020)

applicant must address any adverse findings from confirmatory actions in the license condition in accordance with a Corrective Action Program, which is subject to further NRC oversight; LBP-20-9, 92 NRC 58 (2020)

board decided not to mandate use of particular technologies because they may become outmoded in the future; LBP-20-12, 92 NRC 431 (2020)

board has authority to revoke or place conditions on a license amendment if it determines that NRC Staff should not have granted it; LBP-20-9, 92 NRC 58 (2020)

board has identified significant uncertainties that preclude a reasonable assurance finding absent conditions imposed by the board; LBP-20-9, 92 NRC 58 (2020)

conditions must be precisely drawn so that the verification of compliance becomes a largely ministerial rather than an adjudicatory act; LBP-20-12, 92 NRC 431 (2020)

deletions of administrative conditions fall within the scope of the categorical exclusion; CLI-20-12, 92 NRC 351 (2020)

licensee must notify NRC if implementation of the license condition would adversely impact safe and secure operation of the facility; LBP-20-12, 92 NRC 431 (2020)

no statute or regulation mandates an explicit level of detail or a limit on licensee discretion in license conditions; LBP-20-12, 92 NRC 431 (2020)

NRC may impose license conditions as it deems appropriate and necessary; LBP-20-12, 92 NRC 431 (2020)

NRC Staff's proposed modification of license condition is in substance a cross-motion for partial reconsideration based on evidence that has not previously been filed in the proceeding and thus fails to satisfy the criteria; LBP-20-12, 92 NRC 431 (2020)

NRC Staff's request to modify license condition relies on internal guidance document that is not part of the evidentiary record for the proceeding, not the subject of a motion for judicial notice, and not cited in Staff's previous filings; LBP-20-12, 92 NRC 431 (2020)

NUREGs and Regulatory Guides serve merely as guidance and cannot prescribe requirements whereas only statutes, regulations, orders, and license conditions can impose requirements on applicants and licensees; LBP-20-12, 92 NRC 431 (2020)

proposed revisions rely entirely on information that has been apparent from the outset of the proceeding; LBP-20-12, 92 NRC 431 (2020)

SUBJECT INDEX

requests to modify conditions imposed in renewed licenses must be fully justified and approved by NRC Staff using the same considerations that originally governed issuance of the renewed license; LBP-20-7, 92 NRC 1 (2020)

LICENSE EXPIRATION

when licensee applies to renew its license at least 30 days prior to expiration, the license is effectively extended until a final decision is made on the application; CLI-20-8, 92 NRC 255 (2020)

LICENSE RENEWAL APPLICATIONS

safety analysis report that includes design basis information, description of aging management program, and time-limited aging analysis must be included; CLI-20-15, 92 NRC 491 (2020)

when licensee applies to renew its license at least 30 days prior to expiration, the license is effectively extended until a final decision is made on the application; CLI-20-8, 92 NRC 255 (2020)

LICENSE RENEWALS

requests to modify conditions imposed in renewed licenses must be fully justified and approved by NRC Staff using the same considerations that originally governed issuance of the renewed license; LBP-20-7, 92 NRC 1 (2020)

stay or revocation of a renewed license would only serve to reinstate the prior license; CLI-20-8, 92 NRC 255 (2020)

See also Operating License Renewal; Subsequent Operating License Renewal

LICENSE TERMINATION PLANS

environmental report requirement applies to applicant seeking a license amendment approving a license termination plan or decommissioning plan under 10 C.F.R. 50.82; CLI-20-12, 92 NRC 351 (2020)

plan must be submitted at least 2 years before date of license termination and include a site characterization and an updated site-specific decommissioning cost estimate for the remaining decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

updated decommissioning cost estimate of remaining costs must be provided in a license termination plan; CLI-20-12, 92 NRC 351 (2020)

LICENSE TRANSFER APPLICATIONS

applicant for a reactor that has permanently ceased operating must demonstrate that it has the financial qualifications to pay for managing the spent fuel on the site; CLI-20-12, 92 NRC 351 (2020)

applicants involved with operating reactors generally show reasonable assurance of decommissioning funding by using NRC's generic, formula-derived estimate; CLI-20-12, 92 NRC 351 (2020)

application must provide reasonable assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 351 (2020)

independent spent fuel storage installation applicant must provide reasonable assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 351 (2020)

licensee who would remain an electric utility is not required to demonstrate its financial qualifications in a license transfer application; CLI-20-7, 92 NRC 225 (2020)

NRC Staff may issue its approval or denial of a license transfer application, consistent with its findings in its Safety Evaluation Report, during a pending adjudicatory proceeding; CLI-20-12, 92 NRC 351 (2020)

LICENSE TRANSFER PROCEEDINGS

applicability of categorical exclusion in license transfer proceeding is discussed; CLI-20-12, 92 NRC 351 (2020)

application of the proximity presumption is determined on a case-by-case basis, considering the potential for offsite radiological consequences; CLI-20-7, 92 NRC 225 (2020)

Commission has never granted proximity-based standing to a petitioner in an indirect license transfer adjudication; CLI-20-16, 92 NRC 511 (2020)

Commission has rejected proximity standing for these proceedings; LBP-20-8, 92 NRC 23 (2020)

concerns of nearby residents over a licensee's financial ability to properly carry out and complete decommissioning is sufficient to establish standing; CLI-20-12, 92 NRC 351 (2020)

difference in potential risk between a reactor and an independent spent fuel storage installation justified a determination that proximity-based standing was not available in ISFSI direct license transfer proceeding; CLI-20-16, 92 NRC 511 (2020)

direct transfer of a 50% non-operating interest did not warrant proximity standing; CLI-20-7, 92 NRC 225 (2020)

SUBJECT INDEX

in cases involving license transfers or non-power reactors, proximity-based standing is determined on a case-by-case basis, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue; CLI-20-16, 92 NRC 511 (2020)

in license transfer adjudications, financial assurance is deemed to be acceptable if it is based on plausible assumptions and forecasts, even if the possibility is not insignificant that things will turn out less favorably than expected; CLI-20-12, 92 NRC 351 (2020)

indirect license transfers involving no change in operator, direct owner, and physical plant create no obvious source of actual or potential harm; CLI-20-7, 92 NRC 225 (2020)

license transfers even for operating nuclear power plants typically involve little if any radiological risk, as there are generally no changes to the physical plant, its operating procedures, or its design basis accident analysis; CLI-20-16, 92 NRC 511 (2020)

license transfers present a low potential for offsite radiological consequences; CLI-20-16, 92 NRC 511 (2020)

organization's interest in license transferee's corporate structure, in and of itself, does not demonstrate injury that demonstrates standing; CLI-20-7, 92 NRC 225 (2020)

petitioner must demonstrate standing by showing that its interest may be affected by the proceeding; CLI-20-7, 92 NRC 225 (2020)

references to regulatory requirements governing licensee programs for controlling access to nuclear power plants, including the use of background checks, are not relevant; CLI-20-12, 92 NRC 351 (2020)

to obtain presumptive standing based on proximity, petitioners must show that the instant proceeding presents an obvious potential for offsite radiological consequences; CLI-20-16, 92 NRC 511 (2020)

LICENSE TRANSFERS

applicant must demonstrate its financial and technical qualifications; CLI-20-12, 92 NRC 351 (2020)

applicants may close a transaction despite lack of final agency approval of the application, but do so at their own risk in case the Commission later determines that intervenors have raised valid objections to the application; CLI-20-12, 92 NRC 351 (2020)

categorical exclusion applies to approvals of direct or indirect transfers of any license issued by NRC and any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license; CLI-20-12, 92 NRC 351 (2020)

in direct transfer of a non-operating interest, but no change in operator or physical plant, procedures, management, or personnel, risks are considered to be de minimis; CLI-20-7, 92 NRC 225 (2020)

license amendment that does no more than conform the license to reflect the transfer action involves no significant hazards consideration; CLI-20-12, 92 NRC 351 (2020)

NRC categorically excluded license transfer actions from the need to perform further environmental analysis; CLI-20-12, 92 NRC 351 (2020)

NRC has generically determined that any amendment to a power reactor or ISFSI license that does no more than conform the license to reflect the transfer action involves no significant hazards consideration; CLI-20-12, 92 NRC 351 (2020)

NRC must give written consent for a license transfer; CLI-20-12, 92 NRC 351 (2020)

NRC Staff is expected to promptly issue approval or denial of transfer requests even if a hearing has been requested; CLI-20-7, 92 NRC 225 (2020)

NRC will approve a license transfer application if it determines that the proposed transferee is qualified to hold the license and that the proposed transfer is consistent with applicable law, regulations, and orders; CLI-20-12, 92 NRC 351 (2020)

review is limited to specific matters, including technical and financial qualifications of proposed transferee; CLI-20-12, 92 NRC 351 (2020)

transferee remains responsible for decommissioning funding assurance associated with its 15.8% ownership interest and to continue to provide decommissioning funding; CLI-20-7, 92 NRC 225 (2020)

unless special circumstances are present, an environmental assessment or environmental impact statement is not required for approvals of direct or indirect transfers of any license issued by the NRC and for any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license; CLI-20-12, 92 NRC 351 (2020)

LICENSEE CHARACTER

claims of deficient licensee character or integrity must have some direct and obvious relationship between the character issues and the licensing action in dispute; CLI-20-12, 92 NRC 351 (2020)

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contention must point to some direct and obvious relationship between the licensing action and potential character issues; LBP-20-7, 92 NRC 1 (2020)
every agency licensing action does not throw open an opportunity to engage in a free-ranging inquiry into licensee's character; LBP-20-7, 92 NRC 1 (2020)

LICENSEE EMPLOYEES

contention that environmental report fails to address significance of the declining amount of external operating experience due to the early shutdown or retirement of a significant portion of currently operating fleet of reactors is speculative, incorrect, and thus inadmissible; CLI-20-11, 92 NRC 335 (2020)
individuals working for NRC licensees are protected from retaliation for reporting potential violations of the Energy Reorganization Act or the Atomic Energy Act; LBP-20-11, 92 NRC 409 (2020)

LICENSING

NRC's current regulatory approach of relying on licensees to submit complete and accurate information and of auditing that information as appropriate is entirely consistent with sound regulatory practice; CLI-20-17, 92 NRC 521 (2020)

LICENSING BOARD DECISIONS

Commission is highly deferential to licensing board findings, particularly where much of the evidence is subject to interpretation; CLI-20-9, 92 NRC 295 (2020)
petition for discretionary review must demonstrate that a necessary legal conclusion that the board made is without governing precedent, is a departure from or contrary to established law, or raises a substantial and important question of law, policy, or discretion; CLI-20-9, 92 NRC 295 (2020)
See also Initial Decisions

LICENSING BOARDS, AUTHORITY

board determines propriety of rebuttal testimony within limits imposed by 10 C.F.R. 2.1207(a)(2); LBP-20-9, 92 NRC 58 (2020)
board exercises its discretion to deny request to reopen; LBP-20-10, 92 NRC 235 (2020)
board has an inquisitorial role in the development of a complete record in NRC proceedings; CLI-20-9, 92 NRC 295 (2020)
board has authority to receive evidence, examine witnesses, strike irrelevant, immaterial, unreliable, duplicative, or cumulative evidence, and take any other action consistent with applicable law in its conduct of proceedings; CLI-20-9, 92 NRC 295 (2020)
board has authority to revoke or place conditions on a license amendment if it determines that NRC Staff should not have granted it; LBP-20-9, 92 NRC 58 (2020)
board has power to restrict irrelevant, immaterial, unreliable, duplicative or cumulative evidence and/or arguments; LBP-20-9, 92 NRC 58 (2020)
boards have authority to reformulate contentions; LBP-20-9, 92 NRC 58 (2020)
boards may exercise broad discretion to limit oral argument or to allow it at all; LBP-20-10, 92 NRC 235 (2020)
exceptionally grave issue may be considered in discretion of the presiding officer even if untimely presented; LBP-20-10, 92 NRC 235 (2020)
if truth and fairness are not to be sacrificed, the judge must exert substantial control over the proceedings; LBP-20-9, 92 NRC 58 (2020)
licensing board normally has considerable discretion in making evidentiary rulings; LBP-20-9, 92 NRC 58 (2020)
licensing boards are expected to review testimony, exhibits, and other evidence carefully to resolve factual disputes; CLI-20-8, 92 NRC 255 (2020)
licensing boards have considerable discretion in their management of adjudicatory proceedings; CLI-20-8, 92 NRC 255 (2020)
NRC Staff reviews, which frequently proceed in parallel to adjudicatory proceedings, fall under the direction of Staff management and the Commission itself, not the licensing boards; CLI-20-8, 92 NRC 255 (2020)
prejudicial procedural error did not occur in board's admission and reliance on its own exhibits; CLI-20-9, 92 NRC 295 (2020)
presiding officer has broad authority to regulate the conduct of proceedings; LBP-20-9, 92 NRC 58 (2020)

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presiding officers may issue scheduling orders, delineating rules applicable to the proceeding at hand; LBP-20-9, 92 NRC 58 (2020)

ruling on motions, making findings of fact, and holding status conferences are within the scope of a board's core responsibilities; CLI-20-9, 92 NRC (2020); CLI-20-9, 92 NRC 295 (2020)

trial judges have authority to determine the scope of rebuttal testimony within limits; LBP-20-9, 92 NRC 58 (2020)

LICENSING BOARDS, JURISDICTION

because board lacks jurisdiction to suspend previously issued construction permit, intervenor seeking such relief must file 10 C.F.R. 2.206 petition; LBP-20-8, 92 NRC 23 (2020)

LICENSING PROCEEDINGS

standing and contention admissibility are separate issues with distinct requirements; CLI-20-15, 92 NRC 491 (2020)

MAINTENANCE PROGRAMS

lack of any specific directive as to when additional inspections for alkali-silica reaction must be performed on seismic Category I structures creates a reasonable possibility of a violation of the maintenance rule; LBP-20-9, 92 NRC 58 (2020)

MANAGEMENT CHARACTER AND COMPETENCE

absent strong support for a claim that difficulties at other plants run by a corporate parent will affect the plant(s) at issue before the Commission, Commission is unwilling to use its hearing process as a forum for a wide-ranging inquiry into the corporate parent's general activities across the country; CLI-20-12, 92 NRC 351 (2020)

to avoid open-ended inquiries into matters ultimately unrelated to NRC-licensed activities, NRC has limited contentions raising claims of poor or improper management or character to claims that relate directly to the proposed licensing action; CLI-20-12, 92 NRC 351 (2020)

MATERIAL MISREPRESENTATIONS

contention that independent spent fuel storage installation application fails to adequately describe control of subsurface mineral rights and extraction operations is inadmissible; LBP-20-10, 92 NRC 235 (2020)

MATERIALITY

admissible contention must demonstrate that the issue raised is material to findings NRC must make to support the action involved; LBP-20-10, 92 NRC 235 (2020)

admissible contention must provide sufficient information to show that a genuine dispute exists with applicant or licensee on a material issue of law or fact; LBP-20-10, 92 NRC 235 (2020)

consideration of information regarding a nearby seismic fault for a site in which seismic hazards were acknowledged to be disproportionately dominant risk hazards in a severe accident mitigation alternatives analysis is material to the analysis of environmental impacts; CLI-20-11, 92 NRC 335 (2020)

MODELS/MODELING

finite element analysis is discussed; LBP-20-9, 92 NRC 58 (2020)

MONITORING

alkali-silica reaction monitoring interval for Tier 3 areas fails to provide reasonable assurance that operation of the nuclear power plant will not endanger public health and safety; LBP-20-9, 92 NRC 58 (2020)

contention challenging method for ensuring subcriticality in spent fuel pool as insufficiently conservative is inadmissible; LBP-20-7, 92 NRC 1 (2020)

licensees must monitor condition of structures, systems, or components against licensee-established goals in a manner sufficient to provide reasonable assurance that these SSCs are capable of fulfilling their intended functions; LBP-20-9, 92 NRC 58 (2020)

NRC will monitor increased withdrawals from the decommissioning trust fund and increased projected costs as reported in the annual decommissioning financial assurance status reports; CLI-20-12, 92 NRC 351 (2020)

MONITORS

stating that lack of acoustic sensors is a matter of concern but identifying no legal or factual error is insufficient to satisfy the high bar of reconsideration, which requires demonstration of compelling circumstances that render the decision invalid; LBP-20-12, 92 NRC 431 (2020)

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MOTIONS

licensee or any other person adversely affected by an immediately effective enforcement order may move the presiding officer to set aside the immediate effectiveness of the order; LBP-20-11, 92 NRC 409 (2020)

stay motion must be filed within 10 days of board's ruling; CLI-20-10, 92 NRC 327 (2020)

See also Referral of Motion

MOTIONS FOR RECONSIDERATION

Commission does not grant lightly motions for reconsideration and strictly applies the reconsideration standard; LBP-20-12, 92 NRC 431 (2020)

compelling circumstances standard is a higher standard than existing case law that permitted motions for reconsideration to reexamine existing evidence that may have been misunderstood or overlooked, or to clarify a ruling on a matter; LBP-20-12, 92 NRC 431 (2020)

filing a reply requires the party to demonstrate compelling circumstances and that it could not reasonably have anticipated the arguments to which it seeks leave to reply; LBP-20-12, 92 NRC 431 (2020)

leave of the presiding officer is required to file motions for reconsideration; LBP-20-12, 92 NRC 431 (2020)

more is required than a request that a presiding officer reexamine existing evidence that may have been misunderstood or overlooked, or to clarify a ruling on a matter; LBP-20-12, 92 NRC 431 (2020)

movant must establish an error in a decision, based upon an elaboration or refinement of an argument already made, an overlooked controlling decision or principle of law, or a factual clarification; LBP-20-12, 92 NRC 431 (2020)

party may file an answer in support of or in opposition to a motion for reconsideration; LBP-20-12, 92 NRC 431 (2020)

reconsideration motion may not be filed except upon a showing of compelling circumstances, such as the existence of a clear and material error in a decision, which could not have reasonably been anticipated, that renders the decision invalid; LBP-20-12, 92 NRC 431 (2020)

reconsideration motion must be filed within 10 days; CLI-20-10, 92 NRC 327 (2020)

MOTIONS TO REOPEN

affidavit of petitioner's lawyer repeating allegations of undisclosed principals is not sufficient to reopen the record; LBP-20-10, 92 NRC 235 (2020)

affidavits that set forth the factual and/or technical bases for movant's claim must accompany motion; LBP-20-12, 92 NRC 431 (2020)

board exercises its discretion to deny request to reopen; LBP-20-10, 92 NRC 235 (2020)

documents merely summarizing earlier documents or compiling preexisting, publicly available information into a single source do not render new the summarized or compiled information; LBP-20-12, 92 NRC 431 (2020)

evidence in affidavit supporting motion to reopen must be of such quality as to be admissible into evidence at an evidentiary hearing; LBP-20-10, 92 NRC 235 (2020)

exceptionally grave issue may be considered in discretion of the presiding officer even if untimely presented; LBP-20-10, 92 NRC 235 (2020)

if information offered with a motion to reopen had been apparent from the outset of the proceeding or is not an unexpected revelation, the motion must be denied as untimely; LBP-20-12, 92 NRC 431 (2020)

most important criterion is identification of a significant safety or environmental issue; LBP-20-12, 92 NRC 431 (2020)

motion is timely if it seeks to admit information that could not have been submitted at an earlier time in the proceeding; LBP-20-12, 92 NRC 431 (2020)

motion must be timely, address a significant safety or environmental issue, and demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially; LBP-20-12, 92 NRC 431 (2020)

motion was timely based on an order by the Secretary extending the deadline for filing new contentions based on the draft environmental impact statement; CLI-20-14, 92 NRC 463 (2020)

movant bears the burden to satisfy each requirement of 10 C.F.R. 2.326(a)(1)-(3); LBP-20-12, 92 NRC 431 (2020)

movant must identify uncorrected errors that endanger safe plant operation; LBP-20-12, 92 NRC 431 (2020)

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movant must seek to submit evidence sufficiently compelling to suggest a likelihood of materially affecting the ultimate results in the proceeding; LBP-20-12, 92 NRC 431 (2020)
petitioner must attach an affidavit from experts in the disciplines appropriate to the issues raised or from competent individuals with knowledge of the facts alleged that separately addresses each of these criteria, explaining how each has been satisfied; LBP-20-10, 92 NRC 235 (2020)
petitioner must demonstrate that its new contention is timely, addresses a significant safety or environmental issue, and a materially different result would be or would have been likely had the newly proffered evidence been considered initially; LBP-20-10, 92 NRC 235 (2020)
timeliness analysis questions when these issues should have been identified and asserted and if they are based on new information or on information that has been available for a significant time; LBP-20-12, 92 NRC 431 (2020)

See also Reopening a Record

NATIONAL ENVIRONMENTAL POLICY ACT

agencies are given broad discretion to keep their inquiries within appropriate and manageable boundaries; LBP-20-10, 92 NRC 235 (2020)

although adjudicatory hearings can provide for more rigorous public scrutiny of a NEPA environmental review than a public comment period, they are also much more restrictive; CLI-20-9, 92 NRC 295 (2020)

core requirement of NEPA is that an agency decisionmaker must consider an adequate environmental review before making a decision on a licensing action; CLI-20-9, 92 NRC 295 (2020)

NEPA is a procedural statute that does not mandate particular results, but simply prescribes the necessary process; CLI-20-9, 92 NRC 295 (2020)

NEPA is governed by a rule of reason that requires an agency to include only in NEPA documentation information that is reasonably available; CLI-20-8, 92 NRC 255 (2020)

scope of the agency's inquiries must remain manageable if NEPA's goal of ensuring a fully informed and well considered decision is to be accomplished; CLI-20-8, 92 NRC 255 (2020)

some information needed for a NEPA review, may prove to be unavailable, unreliable, inapplicable, or simply not adaptable; CLI-20-8, 92 NRC 255 (2020)

NATIONAL HISTORIC PRESERVATION ACT

cultural resources review should proceed as a partnership between federal agencies and affected stakeholders; CLI-20-8, 92 NRC 255 (2020)

NRC Staff is obliged under the NHPA to provide an opportunity for Indian tribes to consult meaningfully on the license renewal action; CLI-20-8, 92 NRC 255 (2020); CLI-20-9, 92 NRC 295 (2020)

NRC Staff must make a reasonable and good faith effort to identify historic properties, their significance, the potential effects of the license renewal on them, and potential mitigation measures; CLI-20-8, 92 NRC 255 (2020)

whether NRC Staff's attempts to consult with a tribe adequately fulfilled its NHPA consultation duties is a question of fact subject to the clear error standard of review; CLI-20-9, 92 NRC 295 (2020)

NATIVE AMERICANS

agency undertook reasonable identification efforts even when it resisted a tribe's requests for a formal study of cultural properties and given a more thorough exploration, the agency might have discovered more eligible sites; CLI-20-8, 92 NRC 255 (2020)

NRC Staff is obliged under the NHPA to provide an opportunity for Indian tribes to consult meaningfully on the license renewal action; CLI-20-8, 92 NRC 255 (2020)

NRC Staff must consult with Native American tribes on cultural resources; CLI-20-9, 92 NRC 295 (2020)

whether NRC Staff's attempts to consult with a tribe adequately fulfilled its NHPA consultation duties is a question of fact subject to the clear error standard of review; CLI-20-9, 92 NRC 295 (2020)

NO SIGNIFICANT HAZARDS DETERMINATION

issuance of an amendment to a reactor license during pendency of a hearing on the amendment is allowed as long as NRC has first determined that the amendment involves a no significant hazards determination; LBP-20-9, 92 NRC 58 (2020)

license amendment may be issued on an immediately effective basis upon a determination that the amendment involves no significant hazards consideration, notwithstanding the pendency of a hearing request; CLI-20-12, 92 NRC 351 (2020)

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license amendment that does no more than conform the license to reflect the transfer action involves no significant hazards consideration; CLI-20-12, 92 NRC 351 (2020)

NRC may make a license amendment immediately effective upon a determination by the Commission that such amendment involves a no significant hazards determination; LBP-20-7, 92 NRC 1 (2020)

NRC Staff determination associated with license amendment request is not subject to challenge in an adjudicatory proceeding; LBP-20-8, 92 NRC 23 (2020)

NRC Staff has authority to issue combined license amendments and corresponding exemption following no significant hazards consideration determination and safety evaluation; LBP-20-8, 92 NRC 23 (2020)

NRC Staff's determination is a procedural one that can only be made by NRC Staff or the Commission; LBP-20-7, 92 NRC 1 (2020)

NRC Staff's determination is final, subject only to the Commission's discretion, on its own initiative, to review the determination; LBP-20-7, 92 NRC 1 (2020)

petitioner is barred from requesting a delay of issuance of a license amendment by NRC until the Commission reviews Staff's no significant hazards determination; LBP-20-9, 92 NRC 58 (2020)

proposed license amendment must not significantly increase probability or consequences of an accident previously evaluated, or create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a significant reduction in a margin of safety; LBP-20-7, 92 NRC 1 (2020)

NONCONFORMANCE

combined license amendment applicant seeks to modify minimum seismic gap requirements between part of opposite-facing walls of the nuclear island-based auxiliary building and the annex building to accommodate as-built localized nonconformances; LBP-20-8, 92 NRC 23 (2020)

NONPARTIES

adoption of a contention by petitioner who has not independently gained party status in a proceeding is addressed; CLI-20-12, 92 NRC 351 (2020)

NOTICE AND COMMENT

NRC Staff is required to submit a request for comments on draft environmental impact statements; CLI-20-8, 92 NRC 255 (2020)

NRC will provide notice of a post-shutdown decommissioning activities report and an opportunity for public comment as well as hold a public meeting on the PSDAR; CLI-20-12, 92 NRC 351 (2020)

NOTICE OF HEARING

application is only noticed for a possible hearing once it has been accepted, or docketed, by NRC Staff; CLI-20-17, 92 NRC 521 (2020)

applications are neither accepted for full review by NRC Staff nor automatically noticed for a possible hearing when it is submitted; CLI-20-17, 92 NRC 521 (2020)

NOTICE PLEADING

although petitioner need not prove its contention at the admission stage, mere notice pleading is insufficient; LBP-20-7, 92 NRC 1 (2020); LBP-20-10, 92 NRC 235 (2020)

NOTIFICATION

license condition required licensee to notify NRC if implementation of the license condition would adversely impact safe and secure operation of the facility; LBP-20-12, 92 NRC 431 (2020)

licensee must notify NRC and the affected state in writing before performing any decommissioning activity that would significantly increase estimated site-specific decommissioning cost beyond that provided to NRC; CLI-20-12, 92 NRC 351 (2020)

licensees must notify the NRC within 8 hours of a plant being in an unanalyzed condition that significantly degrades plant safety; LBP-20-12, 92 NRC 431 (2020)

NRC GUIDANCE DOCUMENTS

agency violates the Administrative Procedure Act if it treats a guidance document as binding, either on itself or on the regulated community; LBP-20-12, 92 NRC 431 (2020)

NRC Staff's request to modify license condition relies on internal guidance document that is not part of the evidentiary record for the proceeding, not the subject of a motion for judicial notice, and not cited in Staff's previous filings; LBP-20-12, 92 NRC 431 (2020)

NUREGs and Regulatory Guides serve merely as guidance and cannot prescribe requirements whereas only statutes, regulations, orders, and license conditions can impose requirements on applicants and licensees; LBP-20-12, 92 NRC 431 (2020)

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regulatory guides describe approaches to compliance that have been deemed acceptable by NRC Staff in the past, but do not create new regulatory requirements; CLI-20-14, 92 NRC 463 (2020)

NRC REVIEW

license transfer review is limited to specific matters, including technical and financial qualifications of proposed transferee; CLI-20-12, 92 NRC 351 (2020)
petitioner is barred from requesting a delay of issuance of a license amendment by NRC until the Commission reviews Staff's no significant hazards consideration determination; LBP-20-9, 92 NRC 58 (2020)

NRC STAFF

for safety-related matters, there is no burden on NRC Staff, but a board will consider Staff's safety evaluation in reaching its determination; LBP-20-9, 92 NRC 58 (2020)
Staff is obliged under the NHPA to provide an opportunity for Indian tribes to consult meaningfully on the license renewal action; CLI-20-8, 92 NRC 255 (2020)
when an immediate effectiveness determination is challenged, NRC Staff must satisfy a two-part test; LBP-20-11, 92 NRC 409 (2020)

NRC STAFF REVIEW

adjudications are not the appropriate forum for resolving complaints about NRC Staff conduct; CLI-20-17, 92 NRC 521 (2020)
board did not commit legal error by not considering whether NRC Staff made reasonable efforts to acquire missing information because the fundamental issue is inherently factual; CLI-20-8, 92 NRC 255 (2020)
consideration of alternative structural monitoring techniques is beyond the scope of NRC Staff review of license amendment request; LBP-20-9, 92 NRC 58 (2020)
docketing decisions, which presumably include Staff's conclusions about how much applicant information Staff requires to reach that determination, is one for which Staff is afforded considerable discretion; LBP-20-8, 92 NRC 23 (2020)
in conducting the preliminary acceptance review, NRC Staff reviews the application to ensure it contains information and analyses required in a proper application to allow Staff's full review of the proposed licensing action; CLI-20-17, 92 NRC 521 (2020)
in deciding whether to accept an application for docketing, NRC Staff does not consider technical or legal merits of the application but rather simply screens it to determine whether it contains sufficient information for NRC to begin its safety review; CLI-20-17, 92 NRC 521 (2020)
no significant hazards consideration determination is a procedural one that can only be made by NRC Staff or the Commission; LBP-20-7, 92 NRC 1 (2020)
NRC has not, and will not, litigate claims about adequacy of NRC Staff's safety review in licensing adjudications; CLI-20-17, 92 NRC 521 (2020)
NRC Staff audits are a sound regulatory practice reflected in the Staff's internal licensing guidance and are routinely used as part of the Staff's independent technical review; CLI-20-18, 92 NRC 530 (2020)
NRC Staff has a responsibility under NEPA to preserve important historic, cultural, and natural aspects of our national heritage regardless of whether a federally recognized tribe appears to assert and prosecute a claim; CLI-20-9, 92 NRC 295 (2020)
NRC Staff must make a reasonable and good faith effort to identify historic properties, their significance, the potential effects of the license renewal on them, and potential mitigation measures; CLI-20-8, 92 NRC 255 (2020)
NRC Staff's review under NEPA is at issue in NRC proceedings because NEPA places legal duties on the NRC, not on license applicants; CLI-20-17, 92 NRC 521 (2020)
NRC Staff's unsuccessful four-year effort to obtain missing information on cultural resources following a ruling that Staff's initial four-year effort to obtain missing information on cultural resources did not satisfy NEPA or NHPA is described; CLI-20-8, 92 NRC 255 (2020)
requests for additional information and regulatory audits are a routine part of NRC licensing reviews; CLI-20-17, 92 NRC 521 (2020)
reviews, which frequently proceed in parallel to adjudicatory proceedings, fall under the direction of Staff management and the Commission itself, not the licensing boards; CLI-20-8, 92 NRC 255 (2020)
scope of an agency's inquiries must remain manageable if NEPA's goal of ensuring a fully informed and well considered decision is to be accomplished; CLI-20-9, 92 NRC 295 (2020)

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some information needed for a NEPA review may prove to be unavailable, unreliable, inapplicable, or simply not adaptable and NRC Staff has been directed to provide a reasonable analysis of available information in such cases; CLI-20-8, 92 NRC 255 (2020)

Staff must make a reasonable and good faith effort to carry out appropriate efforts to identify historic sites; CLI-20-8, 92 NRC 255 (2020)

upon docketing, NRC Staff's detailed technical review of the application begins along with the application's receipt and availability, and any appropriate hearing opportunity, being noticed in the Federal Register; LBP-20-8, 92 NRC 23 (2020)

upon receipt, application for a licensing action is subject to initial Staff review to ensure that it is complete and acceptable for docketing; LBP-20-8, 92 NRC 23 (2020)

where NRC Staff had not adequately identified Native American cultural resources on the site, staff has to show that the information was not reasonably available; CLI-20-9, 92 NRC 295 (2020)

whether NRC Staff's attempts to consult with a tribe adequately fulfilled its NHPA consultation duties is a question of fact subject to the clear error standard of review; CLI-20-9, 92 NRC 295 (2020)

with limited exceptions such as NRC Staff's environmental review, it is the license application, not the Staff review that is at issue in NRC adjudications; CLI-20-17, 92 NRC 521 (2020)

NUCLEAR ISLAND BASEMAT

contention alleging wrongdoing regarding timeliness of licensee's reporting to NRC on stability of the Nuclear Island basemat is inadmissible; LBP-20-8, 92 NRC 23 (2020)

NUCLEAR REGULATORY COMMISSION, AUTHORITY

argument that the license cannot be issued because NRC lacks the authority to approve a project that might be illegal is dismissed; CLI-20-15, 92 NRC 491 (2020)

Commission considered a series of petitions to suspend adjudicatory, licensing, and rulemaking activities in multiple proceedings under its inherent supervisory authority and declined to address procedural issues that would merit further discussion in a traditional adjudication; CLI-20-17, 92 NRC 521 (2020)

Commission considers petition under its inherent supervisory authority, and thus need not address the propriety of petitioners' motion for leave to reply; CLI-20-17, 92 NRC 521 (2020)

Commission considers petition under its inherent supervisory authority, and thus need not address the procedural issue of whether the requirements of 10 C.F.R. 2.323 apply; CLI-20-17, 92 NRC 521 (2020)

Commission has considered requests to suspend proceedings or hold them in abeyance in the exercise of its inherent supervisory powers over proceedings; CLI-20-17, 92 NRC 521 (2020)

NRC has authority to grant regulatory exemptions; LBP-20-7, 92 NRC 1 (2020)

NRC is authorized to issue immediately effective enforcement orders if it finds that public health, safety, or interest so requires or that the violation or conduct causing the violation is willful; LBP-20-11, 92 NRC 409 (2020)

NRC may impose license conditions as it deems appropriate and necessary; LBP-20-12, 92 NRC 431 (2020)

NRC may issue and make immediately effective any amendment to an operating license; LBP-20-7, 92 NRC 1 (2020)

NRC Staff's no significant hazards consideration determination is a procedural one that can only be made by NRC Staff or the Commission; LBP-20-7, 92 NRC 1 (2020)

NUCLEAR REGULATORY COMMISSION, JURISDICTION

although Commission has jurisdiction to consider whether to reopen this proceeding and admit the contention, it refers motion to the board for consideration of these matters initially; CLI-20-14, 92 NRC 463 (2020)

NRC may issue an enforcement order to a licensee or to an individual subject to NRC jurisdiction; LBP-20-11, 92 NRC 409 (2020)

OPERATING LICENSE APPLICATIONS

operation of reactor requires a separate operating license application and review by NRC, which would also give rise to a hearing opportunity; CLI-20-16, 92 NRC 511 (2020)

OPERATING LICENSE RENEWAL

requirements for the environmental report that must be submitted by any operating license renewal applicant are stated in 10 C.F.R. 51.53(c)(2); CLI-20-11, 92 NRC 335 (2020)

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ORAL ARGUMENT

boards generally do not hear from petitioner's experts at oral argument on whether petitioner's written pleadings are sufficient to merit an evidentiary hearing at which experts would then testify; LBP-20-10, 92 NRC 235 (2020)

in Subpart L proceedings, written prefiled testimony and exhibits are typically submitted well in advance of the evidentiary hearing, and in NRC's most common types of hearings, licensing boards themselves, not the parties, orally examine witnesses; LBP-20-9, 92 NRC 58 (2020)

licensing boards may exercise broad discretion to limit oral argument or to allow it at all; LBP-20-10, 92 NRC 235 (2020)

ORDERS

See Confirmatory Order; Enforcement Orders

PENDENCY OF PROCEEDINGS

issuance of an amendment to a reactor license during pendency of a hearing on the amendment is allowed as long as NRC has first determined that the amendment involves no significant hazards; LBP-20-9, 92 NRC 58 (2020)

license amendment may be issued on an immediately effective basis upon a determination that the amendment involves no significant hazards consideration, notwithstanding the pendency of a hearing request; CLI-20-12, 92 NRC 351 (2020)

NRC Staff may issue its approval or denial of a license transfer application, consistent with its findings in its Safety Evaluation Report, during a pending adjudicatory proceeding; CLI-20-12, 92 NRC 351 (2020)

PLEADINGS

absent extraordinary circumstances, argument raised in a footnote will not be considered; LBP-20-7, 92 NRC 1 (2020)

Commission affords greater latitude to a hearing request submitted by a pro se petitioner, but it is ultimately petitioner's burden to provide sufficient facts to establish standing; CLI-20-16, 92 NRC 511 (2020)

filings not otherwise authorized by NRC rules are permitted only where necessity or fairness dictates; CLI-20-11, 92 NRC 335 (2020)

in consideration of petitioner's pro se status, Commission accepts board's referral and consider the pleading as an appeal; CLI-20-10, 92 NRC 327 (2020)

information that petitioner should include in its petition to establish standing is set out in 10 C.F.R. 2.309(d) but the standard the board must apply when deciding whether that information is sufficient is not; LBP-20-7, 92 NRC 1 (2020)

pro se petitioner may be granted some leeway in pleading and minor procedural matters where the opposing party is not prejudiced thereby; CLI-20-10, 92 NRC 327 (2020)

pro se petitioner will not be held to the same standards of clarity and precision to which a lawyer might reasonably be expected to adhere; LBP-20-8, 92 NRC 23 (2020)

POSSESSION-ONLY LICENSES

petitioner showed no obvious potential for offsite consequences or plausible means by which he could be harmed by possession-only license; CLI-20-15, 92 NRC 491 (2020)

POST-SHUTDOWN DECOMMISSIONING ACTIVITIES REPORT

licensee must provide its reasons for concluding that environmental impacts associated with planned decommissioning activities are bounded by previously issued, relevant site-specific or generic environmental impact statements; CLI-20-12, 92 NRC 351 (2020)

NRC will provide notice of a PSDAR and an opportunity for public comment as well as hold a public meeting on the PSDAR; CLI-20-12, 92 NRC 351 (2020)

power reactor licensees are no longer required to have an approved decommissioning plan before undertaking major decommissioning activities but must provide a PSDAR; CLI-20-12, 92 NRC 351 (2020)

PSDAR addresses environmental impacts associated with site-specific decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

PSDAR does not authorize a licensee to perform any decommissioning activity that is not already permitted under the license or would result in significant environmental impacts not already reviewed; CLI-20-12, 92 NRC 351 (2020)

SUBJECT INDEX

POWER UPRATE

representational standing was granted on a power uprate application to an organization with members who lived within 15 miles of the plant; LBP-20-8, 92 NRC 23 (2020)

PREHEARING CONFERENCES

board may hold a prehearing conference to consider matters including simplification, clarification, and specification of issues; LBP-20-9, 92 NRC 58 (2020)

PREJUDICE

prejudicial procedural error did not occur in board's admission and reliance on its own exhibits; CLI-20-9, 92 NRC 295 (2020)

PRESSURIZED THERMAL SHOCK

event or transient in pressurized water reactor causes severe overcooling (thermal shock) concurrent with or followed by significant pressure in the reactor vessel; LBP-20-12, 92 NRC 431 (2020)

PRIMA FACIE SHOWING

evidence must be legally sufficient to establish a fact or case unless disproved; LBP-20-9, 92 NRC 58 (2020)

once intervenor has introduced sufficient evidence to establish a prima facie case, the burden shifts to applicant who, as part of his overall burden of proof, must provide a sufficient rebuttal to satisfy the board that it should reject the contention; LBP-20-9, 92 NRC 58 (2020)

showing of a violation of the ERA must show that the individual engaged in protected activity, an adverse employment action was taken, and the individual's protected activity was a contributing factor in the adverse employment action; LBP-20-11, 92 NRC 409 (2020)

PRO SE LITIGANTS

although pro se petitioners may not ignore NRC rules, they are allowed some degree of leeway; LBP-20-7, 92 NRC 1 (2020)

board may consider readily apparent legal implications of a pro se petitioner's arguments, even if not expressly stated in the petition, but petitioner, not the board, must provide information required to satisfy contention admissibility standards; LBP-20-8, 92 NRC 23 (2020)

Commission affords greater latitude to a hearing request submitted by a pro se petitioner, but it is ultimately petitioner's burden to provide sufficient facts to establish standing; CLI-20-16, 92 NRC 511 (2020)

in consideration of petitioner's pro se status, Commission accepts board's referral and consider the pleading as an appeal; CLI-20-10, 92 NRC 327 (2020)

petitioner may be granted some leeway in pleading and minor procedural matters where the opposing party is not prejudiced thereby; CLI-20-10, 92 NRC 327 (2020)

petitioners without attorney representation will not be held to the same standards of clarity and precision to which a lawyer might reasonably be expected to adhere; LBP-20-8, 92 NRC 23 (2020)

PROBABILISTIC RISK ASSESSMENT

claims that applicant must provide a probabilistic analysis of new seismic information or show that the cost of such analysis would be exorbitant are considered; CLI-20-9, 92 NRC 295 (2020)

probability of an aircraft crash into an IFSFI is addressed; CLI-20-14, 92 NRC 463 (2020)

threshold probability for a design basis event (whether an event is credible) should be one in one million for a spent fuel storage installation; CLI-20-14, 92 NRC 463 (2020)

PROCEDURE COMPLIANCE

alternative compliance methods can be reviewed by the board to determine reasonable assurance that structures, systems, and components are capable of fulfilling their intended functions; LBP-20-9, 92 NRC 58 (2020)

PROOF

determining state of mind and intent of the individual for a deliberate misconduct violation may be difficult to prove; LBP-20-11, 92 NRC 409 (2020)

See also Burden of Proof; Standard of Proof

PROPERTY INTERESTS

petitioner may use the proximity presumption if the petitioner has a significant property interest within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 23 (2020)

SUBJECT INDEX

PROTECTED ACTIVITY

activities include notifying an employer of an alleged violation of the ERA or the AEA, testifying, assisting, or participating in any other actions to carry out the purposes of the ERA or the AEA; LBP-20-11, 92 NRC 409 (2020)

individuals working for NRC licensees are protected from retaliation for reporting potential violations of the Energy Reorganization Act or the Atomic Energy Act; LBP-20-11, 92 NRC 409 (2020)

NRC Staff may infer whether a protected activity is a contributing factor to an adverse personnel action if it shows a reasonable person could infer that protected activities influenced the unfavorable personnel action to some degree; LBP-20-11, 92 NRC 409 (2020)

prima facie showing of a violation of the ERA must show that the individual engaged in protected activity, an adverse employment action was taken, and the individual's protected activity was a contributing factor in the adverse employment action; LBP-20-11, 92 NRC 409 (2020)

PROXIMITY PRESUMPTION

although the 50-mile proximity presumption does not apply in spent fuel pool cases, persons living little more than a stone's throw from the facility meet the proximity test; LBP-20-7, 92 NRC 1 (2020)

Commission has never granted proximity-based standing to a petitioner in an indirect license transfer adjudication; CLI-20-16, 92 NRC 511 (2020)

Commission has not applied proximity-based standing where the radiological source presented a low potential for radiological consequences or where the facility in question was essentially a passive structure rather than an operating facility; CLI-20-16, 92 NRC 511 (2020)

Commission has rejected proximity standing for certain changes to worker-protection requirements; LBP-20-8, 92 NRC 23 (2020)

Commission has rejected proximity standing for license amendments associated with shut down and defueled reactors; LBP-20-8, 92 NRC 23 (2020)

Commission has rejected proximity standing for license transfers; LBP-20-8, 92 NRC 23 (2020)

difference in potential risk between a reactor and an independent spent fuel storage installation justified a determination that proximity-based standing was not available in ISFSI direct license transfer proceeding; CLI-20-16, 92 NRC 511 (2020)

direct transfer of a 50% non-operating interest did not warrant proximity standing; CLI-20-7, 92 NRC 225 (2020)

expansion of a spent fuel pool is an example of a significant license amendment for which the 50-mile proximity presumption would apply; CLI-20-16, 92 NRC 511 (2020)

fact-specific standing allegations, not conclusory assertions, such as general assertions of proximity, are required to establish the proximity presumption; LBP-20-8, 92 NRC 23 (2020)

fifty-mile proximity presumption applies to proceedings for issuance or renewal of a reactor construction permit/operating license under 10 C.F.R. Part 50 or an early site permit/COL under 10 C.F.R. Part 52; LBP-20-8, 92 NRC 23 (2020)

fifty-mile proximity presumption for construction permit and operating license proceedings rests on a finding that persons living within the roughly 50-mile radius of the facility face a realistic threat of harm if a release from the facility of radioactive material were to occur; CLI-20-16, 92 NRC 511 (2020)

general statements that a member lives in the same zip code and in close proximity to a facility, without more, are insufficient to demonstrate interest; CLI-20-7, 92 NRC 225 (2020)

in cases involving license transfers or non-power reactors, proximity-based standing is determined on a case-by-case basis, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue; CLI-20-16, 92 NRC 511 (2020)

in certain licensing proceedings NRC recognizes a proximity presumption under which petitioner is presumed to have standing to intervene if the petitioner lives within, or otherwise has frequent contacts with, the zone of possible harm from the nuclear reactor; CLI-20-16, 92 NRC 511 (2020)

in construction permit and operating license cases, persons living within the roughly 50-mile radius of the facility face a realistic threat of harm if a release from the facility of radioactive material were to occur; CLI-20-7, 92 NRC 225 (2020)

in license amendment cases, proximity presumption applies only if the challenged license amendments present an obvious potential for offsite radiological consequences; LBP-20-8, 92 NRC 23 (2020)

SUBJECT INDEX

in license amendment proceeding, a proximity plus standard is applied on a case-by-case basis, taking into account nature of the proposed action and significance of the radioactive source; LBP-20-7, 92 NRC 1 (2020)

in license transfer proceedings, application of the proximity presumption is determined on a case-by-case basis, considering the potential for offsite radiological consequences; CLI-20-7, 92 NRC 225 (2020)

in proceedings involving construction or operation of a nuclear power plant, the geographic zone of potential harm is the area within a 50-mile radius of the site; LBP-20-7, 92 NRC 1 (2020)

in proceedings other than reactor construction permit/operating license issuance or renewal or early site permit/COL, proximity presumption is determined on a case-by-case basis considering petitioner's location and nature of proposed action and significance of the radioactive source; LBP-20-8, 92 NRC 23 (2020)

independent spent fuel storage installation is a passive structure and the distance it takes to be realistically threatened is less than that for a power reactor; CLI-20-15, 92 NRC 491 (2020)

license transfers even for operating nuclear power plants typically involve little if any radiological risk, as there are generally no changes to the physical plant, its operating procedures, or its design basis accident analysis; CLI-20-16, 92 NRC 511 (2020)

member declarations, when considered along with pro se petition, show that there are sufficient allegations of increased risk of harm associated with the amendment to demonstrate the basis for representational standing; LBP-20-8, 92 NRC 23 (2020)

petitioner may take advantage of proximity presumptions the Commission has created to simplify standing requirements for individuals who reside within, or have frequent contacts with, a geographic zone of potential harm; LBP-20-7, 92 NRC 1 (2020)

petitioner may use the presumption if petitioner has a significant property interest within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 23 (2020)

petitioner may use the presumption if petitioner has frequent contacts within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 23 (2020)

petitioner may use the presumption if petitioner lives within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 23 (2020)

petitioner must specify contacts with the affected area in its intervention petition; LBP-20-8, 92 NRC 23 (2020)

petitioner residing within 50 miles of nuclear power plant site is entitled to presumptive proximity standing; CLI-20-15, 92 NRC 491 (2020); CLI-20-16, 92 NRC 511 (2020)

petitioner showed no obvious potential for offsite consequences or plausible means by which he could be harmed by possession-only license; CLI-20-15, 92 NRC 491 (2020)

petitioner who lives within, or otherwise has frequent contacts with, the zone of possible harm from the nuclear reactor is presumed to have standing in certain types of proceedings; CLI-20-7, 92 NRC 225 (2020)

petitioners living up to 17 miles away have been granted standing in spent fuel pool cases; LBP-20-7, 92 NRC 1 (2020)

presumed zone of potential harm corresponds roughly to the ingestion pathway emergency planning zone applicable to the currently licensed fleet of commercial power reactors; LBP-20-8, 92 NRC 23 (2020)

presumption relieves petitioner of the need to satisfy traditional elements of standing; LBP-20-8, 92 NRC 23 (2020)

proximity-based standing determined on a case-by-case basis considers whether the proposed action involves a significant source of radioactivity producing an obvious potential for offsite consequences and the geographic extent appropriate for the danger posed by the source at issue; CLI-20-16, 92 NRC 511 (2020)

proximity-based standing is unavailable where the proposed action does not involve changes to the operation, personnel, or financing of the facility; CLI-20-16, 92 NRC 511 (2020)

representational standing was granted on a power uprate application to an organization with members who lived within 15 miles of the plant; LBP-20-8, 92 NRC 23 (2020)

residence 6 miles from proposed independent spent fuel storage installation site is well within the distance for which standing has been found at similar and much smaller materials facilities; CLI-20-15, 92 NRC 491 (2020)

SUBJECT INDEX

standing based on geographic proximity is not confined solely to Part 50 reactor licenses, but is also applicable to materials cases where the potential for offsite consequences is obvious; LBP-20-7, 92 NRC 1 (2020)

standing is limited when there are no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel; LBP-20-8, 92 NRC 23 (2020)

standing was granted based on petitioner's member's residence within 10 miles and significant activities within approximately 3 miles of proposed large consolidated ISFSI; CLI-20-16, 92 NRC 511 (2020)

to obtain presumptive standing based on proximity, petitioners must show that the instant license transfer proceeding presents an obvious potential for offsite radiological consequences; CLI-20-16, 92 NRC 511 (2020)

where an application concerns facilities other than nuclear power plants, a proximity plus standard is applied on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source; CLI-20-15, 92 NRC 491 (2020)

PUBLIC COMMENT

although adjudicatory hearings can provide for more rigorous public scrutiny of a NEPA environmental review than a public comment period, they are also much more restrictive; CLI-20-9, 92 NRC 295 (2020)

appropriate NRC Staff director may make a determination to prepare and issue a draft finding of no significant impact for public review and comment before making a final determination; CLI-20-8, 92 NRC 255 (2020)

QUALIFICATIONS

NRC will approve a license transfer application if it determines that the proposed transferee is qualified to hold the license and that the proposed transfer is consistent with applicable law, regulations, and orders; CLI-20-12, 92 NRC 351 (2020)

See also Financial Qualifications; Financial Qualifications Review; Technical Qualifications

QUALITY ASSURANCE

generally recognized codes and standards must be identified and evaluated to determine their applicability, adequacy, and sufficiency and supplemented or modified as necessary to ensure a quality product; LBP-20-9, 92 NRC 58 (2020)

QA requirements apply to all activities that affect safety-related functions of seismic Category I structures, systems, and components; LBP-20-9, 92 NRC 58 (2020)

structures, systems, and components important to safety must be designed, fabricated, erected, and tested to quality standards commensurate with importance of their safety functions; LBP-20-9, 92 NRC 58 (2020)

RADIOACTIVE RELEASES

intervention petitioner must indicate how the license amendments at issue would increase risk of offsite release of radioactive fission products; LBP-20-8, 92 NRC 23 (2020)

potential for offsite radiological consequences depends on kind of action at issue, when considered in light of the radioactive sources at the plant; LBP-20-8, 92 NRC 23 (2020)

RADIOACTIVE WASTE SHIPMENTS

inadmissibility of contention that environmental report was insufficient because it did not account for potential waste transportation and packaging issues is upheld; CLI-20-13, 92 NRC 457 (2020)

RADIOACTIVE WASTE, LOW-LEVEL

claim that applicant underestimated volume of low-level radioactive waste at proposed ISFSI is an impermissible attack on regulation; CLI-20-14, 92 NRC 463 (2020)

RADIOLOGICAL CONTAMINATION

claim that NRC did not fully disclose potential radiological impacts of a terrorist attack in its supplemental environmental impact statement is considered; CLI-20-9, 92 NRC 295 (2020)

REACTOR DESIGN

AP1000 certified design is incorporated by reference into NRC regulations; CLI-20-18, 92 NRC 530 (2020)

certified design appendix incorporates by reference a generic design certification document submitted by the certified design applicant and contains information that is subject to NRC review and approval as part of the rulemaking process; LBP-20-8, 92 NRC 23 (2020)

SUBJECT INDEX

combined license amendment applicant seeks exemption from elements of the AP1000 certified design; LBP-20-8, 92 NRC 23 (2020)

combined license applicant/licensee that references a certified design must provide a plant-specific final safety analysis report consisting of information in the generic design control document for that certified design, as modified and supplemented by any plant-specific departures or exemptions; LBP-20-8, 92 NRC 23 (2020)

license amendment is not required for departure from Tier 2 information unless the Tier 2 information change would have a negative effect on elements of the plant-specific DCD/FSAR per one of eight criteria or a plant-specific DCD/FSAR-identified ex-vessel severe accident design feature under either of two criteria; LBP-20-8, 92 NRC 23 (2020)

license amendment is not required for departure from Tier 2 information unless there is a change/departure from Tier 1 or Tier 2* information or any license technical specification; LBP-20-8, 92 NRC 23 (2020)

standard design is approved by the design certification rulemaking process, with the resulting design certification rule added to 10 C.F.R. Part 52 as an appendix; LBP-20-8, 92 NRC 23 (2020)

Tier 2 information is design-related information contained in the generic design control document that is approved but not certified by the design certification rule; LBP-20-8, 92 NRC 23 (2020)

Tier 2* information is that portion of Tier 2 information, in the generic DCD, for which any plant-specific change by a COL applicant/licensee mandates a license amendment but not an exemption; LBP-20-8, 92 NRC 23 (2020)

REACTOR PRESSURE VESSEL

licensees must determine if surveillance data show a significantly different trend than predicted in a reactor pressure vessel embrittlement model; LBP-20-12, 92 NRC 431 (2020)

licensees must notify the NRC within 8 hours of a plant being in an unanalyzed condition that significantly degrades plant safety; LBP-20-12, 92 NRC 431 (2020)

pressurized thermal shock event means an event or transient in pressurized water reactors causing severe overcooling (thermal shock) concurrent with or followed by significant pressure in the reactor vessel; LBP-20-12, 92 NRC 431 (2020)

REACTOR PROTECTION SYSTEM

licensee must adopt strategies that provide reasonable protection for the associated equipment from external events and such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and spent fuel pool cooling capabilities; LBP-20-12, 92 NRC 431 (2020)

REASONABLE ASSURANCE

demonstration of reasonable assurance of financial qualification is flexible; CLI-20-12, 92 NRC 351 (2020)

in addition to satisfying the reasonable assurance standard, licensee must comply with General Design Criteria; LBP-20-9, 92 NRC 58 (2020)

in making a case-by-case determination of reasonable assurance, board must weigh expert testimony and give an expert due weight proportionate to his/her expertise; LBP-20-9, 92 NRC 58 (2020)

inadmissibility of contention that ISFSI applicant had not provided reasonable assurance that it will have the necessary funds for decommissioning is upheld; CLI-20-15, 92 NRC 491 (2020)

license transfer applicants involved with operating reactors generally show reasonable assurance of decommissioning funding by using NRC's generic, formula-derived estimate; CLI-20-12, 92 NRC 351 (2020)

license transfer application for independent spent fuel storage installation must provide reasonable assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 351 (2020)

license transfer application must provide reasonable assurance that funds will be available to decommission the facility; CLI-20-12, 92 NRC 351 (2020)

licensee is prohibited from performing any decommissioning activities that foreclose release of the site for unrestricted use or result in a loss of reasonable assurance that adequate funds will be available for decommissioning; CLI-20-12, 92 NRC 351 (2020)

NRC conducts a case-by-case analysis to determine whether the standard is met; LBP-20-12, 92 NRC 431 (2020)

SUBJECT INDEX

NRC undertakes a case-by-case approach in making a determination, considering all relevant facts and circumstances to reach a sound technical judgment that verifies an applicant's compliance with all applicable regulations; LBP-20-9, 92 NRC 58 (2020)
requested license amendment would preclude a finding that it provides reasonable assurance of adequate protection of public health and safety; LBP-20-9, 92 NRC 58 (2020)
standard does not require proof beyond a reasonable doubt; LBP-20-9, 92 NRC 58 (2020)
standard is equated with a clear preponderance of the evidence; LBP-20-9, 92 NRC 58 (2020)
standard is not quantified as equivalent to a 95% (or any other percent) confidence level, but is based on sound technical judgment of the particulars of a case and on compliance with NRC regulations; LBP-20-9, 92 NRC 58 (2020); LBP-20-12, 92 NRC 431 (2020)
standard is not susceptible to formalistic quantification or mechanistic application; LBP-20-9, 92 NRC 58 (2020)

REASONABLENESS STANDARD

level of effort an agency must expend to meet the reasonable and good faith effort standard could depend on the circumstances of a given proceeding; CLI-20-8, 92 NRC 255 (2020)
NRC Staff is permitted to draw inferences based on the "reasonable person" standard; LBP-20-11, 92 NRC 409 (2020)
standards do not permit reasonable inferences, but require actual knowledge, and there is no burden on the alleged wrongdoer to refute anything with clear and convincing evidence; LBP-20-11, 92 NRC 409 (2020)

REBUTTAL

board reviews each disputed section of rebuttal to determine whether it is responsive to initial testimony; LBP-20-9, 92 NRC 58 (2020)
licensing board determines the propriety of rebuttal testimony within limits imposed by 10 C.F.R. 2.1207(a)(2); LBP-20-9, 92 NRC 58 (2020)
once intervenor has introduced sufficient evidence to establish a prima facie case, the burden shifts to applicant who, as part of his overall burden of proof, must provide a sufficient rebuttal to satisfy the board that it should reject the contention; LBP-20-9, 92 NRC 58 (2020)
testimony is limited to new or surprise material; LBP-20-9, 92 NRC 58 (2020)
testimony may not advance any new affirmative claims or arguments that should have been, but were not, included in a party's previously filed initial written statement; LBP-20-9, 92 NRC 58 (2020)
trial judges have authority to determine the scope of rebuttal testimony within limits; LBP-20-9, 92 NRC 58 (2020)

RECONSIDERATION

allowing the use of engineering judgment is not a legal error, much less one that justifies reconsideration; LBP-20-12, 92 NRC 431 (2020)
identification of compelling circumstances is a high standard that is intended to permit reconsideration only where manifest injustice would occur in the absence of reconsideration; LBP-20-12, 92 NRC 431 (2020)
NRC Staff's proposed modification of license condition is in substance a cross-motion for partial reconsideration based on evidence that has not previously been filed in the proceeding and thus fails to satisfy the criteria; LBP-20-12, 92 NRC 431 (2020)
publication of a legally required document, by itself, is not an unanticipated event sufficient to justify reconsideration; LBP-20-12, 92 NRC 431 (2020)
stating that lack of acoustic sensors is a matter of concern but identifying no legal or factual error is insufficient to satisfy the high bar of reconsideration, which requires demonstration of compelling circumstances that render the decision invalid; LBP-20-12, 92 NRC 431 (2020)
See also Motions for Reconsideration

RECORD OF DECISION

adjudicatory record is allowed to augment existing environmental analyses in considering whether NRC Staff should have to issue a supplement to the final supplemental environmental impact statement; CLI-20-9, 92 NRC 295 (2020)
it would be preferable for the FEIS to contain all relevant information and the record of decision to be complete and adequate before the license is issued; CLI-20-9, 92 NRC 295 (2020)

SUBJECT INDEX

REFERRAL OF MOTION

although Commission has jurisdiction to consider whether to reopen this proceeding and admit the contention, it refers motion to the board for consideration of these matters initially; CLI-20-14, 92 NRC 463 (2020)

REGULATIONS

AP1000 certified design is incorporated by reference into NRC regulations; CLI-20-18, 92 NRC 530 (2020)

Council on Environmental Quality regulations generally are not controlling on NRC, at least to the extent that they have not been incorporated by NRC into 10 C.F.R. Part 51; CLI-20-9, 92 NRC 295 (2020)
no NRC rule or regulation may be challenged in a contention unless petitioner seeks and obtains a waiver from the Commission; LBP-20-7, 92 NRC 1 (2020)

NRC, as an independent regulatory agency, is not bound by Council on Environmental Quality NEPA regulations unless the Commission chooses to follow them; CLI-20-11, 92 NRC 335 (2020)
standard reactor design is approved by the design certification rulemaking process, with the resulting design certification rule added to 10 C.F.R. Part 52 as an appendix; LBP-20-8, 92 NRC 23 (2020)
to challenge factual determinations on which a regulation rests in the context of NEPA, petitioner would have to present specific, fact-based claims to the contrary, not mere allegations; CLI-20-15, 92 NRC 491 (2020)

REGULATIONS, INTERPRETATION

applicability of 10 C.F.R. 51.53(c)(3) to subsequent license renewal is discussed; CLI-20-11, 92 NRC 335 (2020)

counsel may argue how the law should be interpreted, but in general that is not a proper subject of expert testimony; LBP-20-9, 92 NRC 58 (2020)

section 2.309(c)(1) does not provide for motions to supplement a hearing request; CLI-20-12, 92 NRC 351 (2020)

section 51.53(d) applies to applicants for a license amendment authorizing decommissioning activities; CLI-20-12, 92 NRC 351 (2020)

section 72.122(c) is a design requirement, compliance with which is addressed in the safety analysis report rather than in the emergency plan; CLI-20-14, 92 NRC 463 (2020)

REGULATORY OVERSIGHT PROCESS

applicant must address any adverse findings from confirmatory actions in the license condition in accordance with Corrective Action Program, which is subject to further NRC oversight; LBP-20-9, 92 NRC 58 (2020)

audits are a sound regulatory practice reflected in NRC Staff's internal licensing guidance and are routinely used as part of the Staff's independent technical review; CLI-20-18, 92 NRC 530 (2020)

NRC oversight of financial ability to decommission a facility and to manage the spent fuel on the site does not end after the financial qualification review; CLI-20-12, 92 NRC 351 (2020)

REOPENING A RECORD

although Commission has jurisdiction to consider whether to reopen this proceeding and admit the contention, it refers motion to the board for consideration of these matters initially; CLI-20-14, 92 NRC 463 (2020)

Commission considers this an extraordinary action; LBP-20-12, 92 NRC 431 (2020)

deliberately heavy burden is imposed on an intervenor who seeks to supplement the evidentiary record after it has been closed, even with respect to an existing contention; LBP-20-12, 92 NRC 431 (2020)

differing analyses of experts of factual information already in the record do not normally constitute the type of information for which reopening of the record would be warranted; LBP-20-12, 92 NRC 431 (2020)

exceptionally grave issue exception warranting discretionary reopening of a record is a narrow one, to be granted rarely and only in truly exceptional circumstances; LBP-20-10, 92 NRC 235 (2020)

intentionally heavy burden is placed on parties seeking to reopen the record; LBP-20-10, 92 NRC 235 (2020)

reopening for any reason is considered to be an extraordinary action; LBP-20-10, 92 NRC 235 (2020)

standard for admitting a new contention after the record is closed is higher than for an ordinary late-filed contention; LBP-20-10, 92 NRC 235 (2020)

SUBJECT INDEX

to meet the standard it is insufficient merely to point to disputed facts; LBP-20-12, 92 NRC 431 (2020)

See also Motions to Reopen

REPLY BRIEFS

allowing new claims in a reply would defeat the contention-filing deadline and unfairly deprive other participants an opportunity to rebut the new claims; LBP-20-10, 92 NRC 235 (2020)

board does not entertain arguments advanced for the first time in a reply brief; LBP-20-10, 92 NRC 235 (2020)

Commission considers petition under its inherent supervisory authority, and thus need not address the propriety of petitioners' motion for leave to reply; CLI-20-17, 92 NRC 521 (2020)

motion to respond to applicant's proposed findings of fact and conclusions of law was denied because such an additional round of filings would go well beyond the submissions authorized; LBP-20-9, 92 NRC 58 (2020)

NRC generally does not allow entirely new arguments to be presented in a reply; CLI-20-12, 92 NRC 351 (2020)

petitioner cannot expand the scope of the arguments set forth in the original hearing request; LBP-20-10, 92 NRC 235 (2020)

REPLY TO ANSWER TO MOTION

filing a reply requires the party to demonstrate compelling circumstances and that it could not reasonably have anticipated the arguments to which it seeks leave to reply; LBP-20-12, 92 NRC 431 (2020)

reply to answers to a motion without prior permission from the Secretary of the Commission is not allowed; CLI-20-14, 92 NRC 463 (2020)

REPORTING REQUIREMENTS

contention alleging wrongdoing regarding timeliness of licensee's reporting to NRC on stability of the Nuclear Island basemat is inadmissible; LBP-20-8, 92 NRC 23 (2020)

financial assurance status report must include an estimate of costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year, and decommissioning criteria upon which the estimate is based; CLI-20-12, 92 NRC 351 (2020)

if remaining decommissioning funds together with projected earnings on those funds are not sufficient to cover estimated cost to complete decommissioning, licensee must include in the status report additional financial assurance to cover remaining estimated costs; CLI-20-12, 92 NRC 351 (2020)

if the available funds are not sufficient to cover projected cost of managing the spent fuel, annual report must include a plan to obtain additional funds; CLI-20-12, 92 NRC 351 (2020)

licensee must provide every year in the financial assurance status report an estimate of the cost to complete decommissioning and the decommissioning criteria on which the estimate is based; CLI-20-12, 92 NRC 351 (2020)

licensee must submit to NRC an independent spent fuel storage installation decommissioning funding plan at least every 3 years with adjustments as necessary to account for changes in costs; CLI-20-12, 92 NRC 351 (2020)

licensee that has submitted its site-specific decommissioning cost estimate must submit to NRC a financial assurance status report every year containing specific information; CLI-20-12, 92 NRC 351 (2020)

REQUEST FOR ACTION

because licensing board lacks jurisdiction to suspend previously issued construction permit, intervenor seeking such relief must file 10 C.F.R. 2.206 petition; LBP-20-8, 92 NRC 23 (2020)

challenge to ongoing operation of a facility should be as a petition seeking enforcement action; LBP-20-8, 92 NRC 23 (2020)

if petitioner has grounds to believe that impacts of planned decommissioning, site restoration, and spent fuel management activities exceed those previously reviewed, its recourse is a petition for enforcement action; CLI-20-12, 92 NRC 351 (2020)

REQUEST FOR ADDITIONAL INFORMATION

issuance of RAI alone does not establish deficiencies in an application or that the NRC Staff will find any applicant responses unsatisfactory; LBP-20-10, 92 NRC 235 (2020)

mere fact that NRC Staff is asking for more information does not make an application incomplete; CLI-20-17, 92 NRC 521 (2020)

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merely identifying a Staff request for additional information does not identify a genuine material dispute with an application; CLI-20-12, 92 NRC 351 (2020)
petitioners must do more than rest on the mere existence of RAIs as a basis for their contention; LBP-20-10, 92 NRC 235 (2020)
petitioners' view that NRC Staff should not have docketed the application when it planned to seek additional information to complete its safety review is incompatible with the dynamic licensing process followed in Commission licensing proceedings; CLI-20-17, 92 NRC 521 (2020)
requests for additional information and regulatory audits are a routine part of NRC licensing reviews; CLI-20-17, 92 NRC 521 (2020)

REVIEW

license amendment request or any analysis that supports such request need not be submitted for peer review; LBP-20-9, 92 NRC 58 (2020)
See also Appellate Review; Environmental Review; Financial Qualifications Review; NRC Review; NRC Staff Review; Immediate Effectiveness Review; Safety Review; Standard of Review

REVIEW, DISCRETIONARY

Commission considers the factors of 10 C.F.R. 2.341(b)(4)(i)-(v) in discretionary grant of a petition for review, giving due weight to the existence of a substantial question; CLI-20-8, 92 NRC 255 (2020)
Commission may grant review, in its discretion, where petitioner raises a substantial question with respect to the considerations in 10 C.F.R. 2.341(b)(4); CLI-20-9, 92 NRC 295 (2020)
petition for discretionary review must demonstrate that a necessary legal conclusion that the board made is without governing precedent, is a departure from or contrary to established law, or raises a substantial and important question of law, policy, or discretion; CLI-20-9, 92 NRC 295 (2020)

REVOCATION OF LICENSES

stay or revocation of a renewed license would only serve to reinstate the prior license; CLI-20-8, 92 NRC 255 (2020)

RISK ASSESSMENT

assertion that environmental report fails to address accident risks posed by aging reactor equipment during a second license renewal term in violation of the National Environmental Policy Act is addressed; CLI-20-11, 92 NRC 335 (2020)
risk of operating with aging equipment is a Category 1 issue that environmental report can address by relying on the environmental findings contained in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1; CLI-20-11, 92 NRC 335 (2020)
See also Probabilistic Risk Assessment

RISK MANAGEMENT

NRC need not demand that nuclear power plants present no risk of harm to satisfy the adequate protection standard; LBP-20-9, 92 NRC 58 (2020)

RISKS

in license transfer involving direct transfer of a non-operating interest, but no change in operator or physical plant, procedures, management, or personnel, risks are considered to be de minimis; CLI-20-7, 92 NRC 225 (2020)

RULE OF REASON

agency must use a rule of reason to decide whether new information warrants a supplemental environmental impact statement; CLI-20-9, 92 NRC 295 (2020)
analysis of impacts in the face of unavailable information must be grounded in the rule of reason; CLI-20-9, 92 NRC 295 (2020)
deciding whether claimed deficiencies in NEPA document are significant or merely flyspecks is governed by a rule of reason; CLI-20-9, 92 NRC 295 (2020)
decision to prepare an environmental impact statement, where the EIS would serve no purpose because the agency was required by law to undertake the action in question is governed by a rule of reason; CLI-20-9, 92 NRC 295 (2020)
NEPA is governed by a rule of reason that requires an agency to include only in NEPA documentation information that is reasonably available; CLI-20-8, 92 NRC 255 (2020)

RULEMAKING

standard reactor design is approved by the design certification process, with the resulting design certification rule added to 10 C.F.R. Part 52 as an appendix; LBP-20-8, 92 NRC 23 (2020)

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RULES OF PRACTICE

admissible contention must satisfy six pleading requirements of 10 C.F.R. 2.309(f)(1)(i)-(vi); LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

although pro se petitioners may not ignore NRC rules, they are allowed some degree of leeway; LBP-20-7, 92 NRC 1 (2020)

because petitioner was granted a hearing on one contention, any appeal of the board's rejection of its other contentions would be considered interlocutory; CLI-20-15, 92 NRC 491 (2020)

because the board granted petition to intervene, its appeal comes under section 2.341 rather than section 2.311(c); CLI-20-15, 92 NRC 491 (2020)

board admits a contention, not its bases; LBP-20-9, 92 NRC 58 (2020)

board may hold a prehearing conference to consider matters including simplification, clarification, and specification of issues; LBP-20-9, 92 NRC 58 (2020)

challenges to NRC regulations in individual adjudications are precluded without a waiver; CLI-20-15, 92 NRC 491 (2020)

Commission considers petition under its inherent supervisory authority, and thus need not address the procedural issue of whether the requirements of 10 C.F.R. 2.323 apply; CLI-20-17, 92 NRC 521 (2020)

Commission considers the factors of 10 C.F.R. 2.341(b)(4)(i)-(v) in discretionary grant of a petition for review, giving due weight to the existence of a substantial question; CLI-20-8, 92 NRC 255 (2020)

Commission has long applied contemporaneous judicial concepts of standing to assess whether petitioner has established the requisite interest to intervene; CLI-20-16, 92 NRC 511 (2020)

Commission may grant review, in its discretion, where petitioner raises a substantial question with respect to the considerations in 10 C.F.R. 2.341(b)(4); CLI-20-9, 92 NRC 295 (2020)

contention admissibility standard that requires petitioner to show a genuine dispute on a material issue of law or fact specifically excludes proceedings under 10 C.F.R. 52.103; LBP-20-8, 92 NRC 23 (2020)

contention must be rejected if it raises issues beyond the scope of the proceeding as dictated by the Commission's hearing notice; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

contention of omission must be supported by reasons for petitioner's belief that the omitted information is required by law; CLI-20-18, 92 NRC 530 (2020)

contentions may be filed after the initial deadline to intervene based on new and materially different information; CLI-20-17, 92 NRC 521 (2020)

failure to satisfy any one of the NRC's pleading requirements requires a licensing board to reject a contention; LBP-20-10, 92 NRC 235 (2020)

filings not otherwise authorized by NRC rules are permitted only where necessity or fairness dictates; CLI-20-11, 92 NRC 335 (2020)

following the intervention petition deadline, participants may still file new or amended environmental contentions challenging NRC Staff's environmental review documents if timeliness requirements are met; CLI-20-8, 92 NRC 255 (2020)

good cause for filing new or amended contentions can be demonstrated if a contention is based on information that was not previously available, is materially different from information previously available, and has been submitted in a timely fashion based on the availability of the subsequent information; CLI-20-8, 92 NRC 255 (2020)

if petitioners have not established standing to intervene the question of whether petitioners have submitted at least one admissible contention need not be reached; CLI-20-16, 92 NRC 511 (2020)

information that petitioner should include in its petition to establish standing is set out in 10 C.F.R. 2.309(d) but the standard the board must apply when deciding whether that information is sufficient is not; LBP-20-7, 92 NRC 1 (2020)

licensing board determines the propriety of rebuttal testimony within limits imposed by 10 C.F.R. 2.1207(a)(2); LBP-20-9, 92 NRC 58 (2020)

licensing board has authority to receive evidence, examine witnesses, strike irrelevant, immaterial, unreliable, duplicative, or cumulative evidence, and take any other action consistent with applicable law in its conduct of proceedings; CLI-20-9, 92 NRC 295 (2020)

motion to reopen a closed evidentiary record must be accompanied by affidavits that set forth the factual and/or technical bases for movant's claim; LBP-20-12, 92 NRC 431 (2020)

motion to reopen a closed evidentiary record must be timely, address a significant safety or environmental issue, and demonstrate that a materially different result would be or would have been likely had the

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newly proffered evidence been considered initially; LBP-20-10, 92 NRC 235 (2020); LBP-20-12, 92 NRC 431 (2020)

motions for leave to file a new contention after the applicable deadline for contentions will not be entertained unless the information on which the filing was based was not previously available and is based materially different information and the filing has been submitted in a timely fashion; CLI-20-12, 92 NRC 351 (2020)

motions for reconsideration may not be filed except upon a showing of compelling circumstances, such as the existence of a clear and material error in a decision, which could not have reasonably been anticipated, that renders the decision invalid; LBP-20-12, 92 NRC 431 (2020)

movant to reopen a record bears the burden to satisfy each requirement of 10 C.F.R. 2.326(a)(1)-(3); LBP-20-12, 92 NRC 431 (2020)

new or amended contentions must be based on information not previously available; LBP-20-8, 92 NRC 23 (2020)

new or amended contentions will not be entertained unless the presiding officer determines that there is good cause for the filing; CLI-20-8, 92 NRC 255 (2020)

participant may not raise new arguments on appeal; CLI-20-14, 92 NRC 463 (2020)

petitioner must submit at least one admissible contention to establish standing to intervene; CLI-20-7, 92 NRC 225 (2020)

petitioner whose hearing request has been wholly denied is allowed to appeal; CLI-20-13, 92 NRC 457 (2020); CLI-20-14, 92 NRC 463 (2020)

rather than expend agency time and resources on litigating vague and unsupported claims, NRC strengthened contention admissibility requirements to provide evidentiary hearings only to those who proffer at least some minimal factual and legal foundation in support of their contentions; LBP-20-10, 92 NRC 235 (2020)

reply to answers to a motion without prior permission from the Secretary of the Commission is not allowed; CLI-20-14, 92 NRC 463 (2020)

requirements for an admissible contention are specified in 10 C.F.R. 2.309(f)(1); CLI-20-12, 92 NRC 351 (2020)

section 2.309(c)(1) does not provide for motions to supplement a hearing request; CLI-20-12, 92 NRC 351 (2020)

to demonstrate good cause for filing after the initial deadline for intervention petitions, petitioner must also submit contentions that meet the applicable contention admissibility requirements; CLI-20-17, 92 NRC 521 (2020)

to intervene in NRC licensing proceedings, petitioner must show standing to intervene and submit at least one admissible contention for hearing; CLI-20-12, 92 NRC 351 (2020)

SAFE SHUTDOWN EARTHQUAKE

all nuclear power plants must be designed so that certain structures, systems, and components remain functional if the safe shutdown earthquake ground motion occurs; LBP-20-9, 92 NRC 58 (2020)

SAFETY ANALYSIS

where analytical methodology is an essential part of the conclusion that the facility meets the required design bases, the updated final safety analysis report must describe the specific analytical methods; LBP-20-9, 92 NRC 58 (2020)

SAFETY ANALYSIS REPORT

contention that environmental report and safety analysis report failed to consider adverse effect the independent spent fuel storage installation will have on groundwater is inadmissible; CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that environmental report and SAR failed to account for effects of storing high-burnup fuel at the proposed ISFSI is upheld; CLI-20-15, 92 NRC 491 (2020)

license renewal application requires a SAR that includes design basis information, description of aging management program, and time-limited aging analysis; CLI-20-15, 92 NRC 491 (2020)

section 72.122(c) is a design requirement, compliance with which is addressed in the safety analysis report rather than in the emergency plan; CLI-20-14, 92 NRC 463 (2020)

See also Final Safety Analysis Report

SAFETY EVALUATION

accidental waste canister breaches are not credible scenarios; CLI-20-14, 92 NRC 463 (2020)

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SAFETY EVALUATION REPORT

for safety-related matters, there is no burden on NRC Staff, but a board will consider Staff's SER in reaching its determination; LBP-20-9, 92 NRC 58 (2020)
NRC Staff may issue its approval or denial of a license transfer application, consistent with its findings in its SER, during a pending adjudicatory proceeding; CLI-20-12, 92 NRC 351 (2020)

SAFETY ISSUES

license condition required licensee to notify NRC if implementation of the license condition would adversely impact safe and secure operation of the facility; LBP-20-12, 92 NRC 431 (2020)
movant to reopen a record must identify uncorrected errors that endanger safe plant operation; LBP-20-12, 92 NRC 431 (2020)
potential safety impacts, if any, from a shortfall in financial funding for decommissioning would not be so direct or immediate as the safety impacts of significant technical deficiencies; CLI-20-12, 92 NRC 351 (2020)

SAFETY REVIEW

NRC has not, and will not, litigate claims about adequacy of NRC Staff's safety review in licensing adjudications; CLI-20-17, 92 NRC 521 (2020)
petitioners' view that NRC Staff should not have docketed the application when it planned to seek additional information to complete its safety review is incompatible with the dynamic licensing process followed in Commission licensing proceedings; CLI-20-17, 92 NRC 521 (2020)
with limited exceptions such as NRC Staff's environmental review, it is the license application, not the Staff review that is at issue in NRC adjudications; CLI-20-17, 92 NRC 521 (2020)

SAFETY-RELATED

all structures, systems, and components important to safety must be designed to withstand effects of natural phenomena without loss of capability to perform their safety functions; LBP-20-9, 92 NRC 58 (2020)
containment structures must maintain a leak-tight barrier against uncontrolled release of radioactivity to the environment and to ensure that containment design conditions important to safety are not exceeded; LBP-20-9, 92 NRC 58 (2020)
quality assurance requirements apply to all activities that affect safety-related functions of seismic Category I structures, systems, and components; LBP-20-9, 92 NRC 58 (2020)
structures, systems, and components important to safety must be designed and located so that they can continue to perform their safety functions effectively under credible fire and explosion exposure conditions; CLI-20-14, 92 NRC 463 (2020)
structures, systems, and components important to safety must be designed, fabricated, erected, and tested to quality standards commensurate with importance of their safety functions; LBP-20-9, 92 NRC 58 (2020)

SCHEDULING

initial scheduling order is designed to ensure proper case management of the proceeding; LBP-20-9, 92 NRC 58 (2020)
presiding officers may issue scheduling orders, delineating rules applicable to the proceeding at hand; LBP-20-9, 92 NRC 58 (2020)

SECURITY

license condition required licensee to notify NRC if implementation of the license condition would adversely impact safe and secure operation of the facility; LBP-20-12, 92 NRC 431 (2020)

SECURITY PROGRAM

references to regulatory requirements governing licensee programs for controlling access to nuclear power plants, including the use of background checks, are not relevant to license transfer proceeding; CLI-20-12, 92 NRC 351 (2020)

SEISMIC ANALYSIS

claims that applicant must provide a probabilistic analysis of new seismic information or show that the cost of such analysis would be exorbitant are considered; CLI-20-9, 92 NRC 295 (2020)
inadmissibility of contention that ISFSI application's discussion of the potential impacts from earthquakes induced by oil and gas activities is upheld; CLI-20-15, 92 NRC 491 (2020)
license application must include information about site geology and seismology, including induced seismicity related to petroleum recovery; CLI-20-14, 92 NRC 463 (2020)

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SEISMIC DESIGN

all nuclear power plants must be designed so that certain structures, systems, and components remain functional if the safe shutdown earthquake ground motion occurs; LBP-20-9, 92 NRC 58 (2020)
combined license amendment applicant seeks to modify minimum seismic gap requirements between part of opposite-facing walls of the nuclear island-based auxiliary building and the annex building to accommodate as-built localized nonconformances; LBP-20-8, 92 NRC 23 (2020)
quality assurance requirements apply to all activities that affect safety-related functions of seismic Category I structures, systems, and components; LBP-20-9, 92 NRC 58 (2020)
seismic category I structures, systems, and components are discussed; LBP-20-9, 92 NRC 58 (2020)

SEISMIC RISK

consideration of information regarding a nearby seismic fault for a site in which seismic hazards were acknowledged to be disproportionately dominant risk hazards in a severe accident mitigation alternatives analysis is material to the analysis of environmental impacts; CLI-20-11, 92 NRC 335 (2020)

SETTLEMENT NEGOTIATIONS

"another purpose" exception in Fed. R. Evid. 408(b) has been interpreted to include showing that a party acted in bad faith during the negotiations and establishing the intent of the settlement reached; CLI-20-9, 92 NRC 295 (2020)
admission of settlement negotiations into evidence in order to prove or disprove the validity or amount of a disputed claim is prohibited; CLI-20-9, 92 NRC 295 (2020)
statements made during negotiations may be admitted for another purpose, such as proving bias or prejudice; CLI-20-9, 92 NRC 295 (2020)

SEVERE ACCIDENT MITIGATION ALTERNATIVES ANALYSIS

consideration of information regarding a nearby seismic fault for a site in which seismic hazards were acknowledged to be disproportionately dominant risk hazards in a severe accident mitigation alternatives analysis is material to the analysis of environmental impacts; CLI-20-11, 92 NRC 335 (2020)

SEVERE ACCIDENT MITIGATION DESIGN ALTERNATIVES

application must evaluate structures, systems, and components designed to prevent and mitigate accidents; CLI-20-14, 92 NRC 463 (2020)

SHIPPING CONTAINERS

accidental canister breach during shipping or storage was not a credible scenario; CLI-20-15, 92 NRC 491 (2020)

SITE CHARACTERIZATION

acceptable investigative methods to ensure site stability are onsite foundation and geological investigation, literature review, and regional geological reconnaissance; CLI-20-14, 92 NRC 463 (2020)
applicant must analyze the entire region in which the proposed site is located for unstable geological characteristics; CLI-20-14, 92 NRC 463 (2020)
contention that independent spent fuel storage installation application fails to adequately, accurately, completely, and consistently describe control of subsurface mineral rights and extraction operations is inadmissible; LBP-20-10, 92 NRC 235 (2020)
inadmissibility of contention that application failed to account for unstable geological characteristics and soil stability problems attributable to abandoned and orphan oil and gas wells in the region is upheld; CLI-20-14, 92 NRC 463 (2020)
license termination plan must be submitted at least 2 years before date of license termination and include a site characterization and an updated site-specific decommissioning cost estimate for the remaining decommissioning activities; CLI-20-12, 92 NRC 351 (2020)
NRC does not require the cost estimate to be confirmed by a site characterization; CLI-20-12, 92 NRC 351 (2020)
purpose of investigative methods is to determine stability of the proposed site, not the region in general; CLI-20-14, 92 NRC 463 (2020)

SITE RESTORATION

decommissioning cost estimates derived from minimum formula also include site restoration and spent fuel management; CLI-20-12, 92 NRC 351 (2020)
exemption is sought to use decommissioning trust fund to pay not only for decommissioning costs but also for spent fuel management and nonradiological site restoration costs; CLI-20-12, 92 NRC 351 (2020)

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if petitioner has grounds to believe that impacts of planned decommissioning, site restoration, and spent fuel management activities exceed those previously reviewed, its recourse is a petition for enforcement action; CLI-20-12, 92 NRC 351 (2020)

SITE SELECTION

evaluation of impacts of the proposed facility being in the 100-year floodplain is discussed; CLI-20-15, 92 NRC 491 (2020)

NRC accords substantial weight to the preferences of the applicant and/or sponsor in siting and design of the project if the application is not so artificially narrow as to circumvent the requirement that reasonable alternatives be considered; CLI-20-14, 92 NRC 463 (2020); CLI-20-15, 92 NRC 491 (2020)

use of a 500-year floodplain in siting a facility is discussed; CLI-20-15, 92 NRC 491 (2020)

SPECIAL CIRCUMSTANCES

interested person may request that the Commission make the determination that special circumstances exist that warrant an exception to the categorical exclusion; CLI-20-12, 92 NRC 351 (2020)

unless special circumstances are present, an environmental assessment or environmental impact statement is not required for approvals of direct or indirect transfers of any license issued by the NRC and for any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license; CLI-20-12, 92 NRC 351 (2020)

SPENT FUEL COOLING SYSTEM

licensee must adopt strategies that provide reasonable protection for the associated equipment from external events and such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and spent fuel pool cooling capabilities; LBP-20-12, 92 NRC 431 (2020)

SPENT FUEL MANAGEMENT

annual report on status of spent fuel management funding must specify amount of funds available to cover cost of managing the spent fuel and projected cost of managing the fuel until DOE takes title to and possession of the fuel; CLI-20-12, 92 NRC 351 (2020)

challenge to the lack of a dry transfer system is an impermissible challenge to the Continued Storage Rule and the Continued Storage Generic Environmental Impact Statement; CLI-20-15, 92 NRC 491 (2020)

contention impermissibly challenged Continued Storage Rule insofar as it would have applicant describe impacts of spent fuel repackaging in its environmental report; CLI-20-14, 92 NRC 463 (2020)

contention that impact of damaged Boraflex racks on safe transfer of spent fuel out of the spent fuel pool is inadmissible; LBP-20-7, 92 NRC 1 (2020)

decommissioning cost estimates derived from minimum formula also include site restoration and spent fuel management; CLI-20-12, 92 NRC 351 (2020)

DOE cannot take title to spent nuclear fuel until after it has commenced operations at a permanent repository and that the ISFSI license, until granted, would not authorize DOE to do so; CLI-20-15, 92 NRC 491 (2020)

exemption is sought to use decommissioning trust fund to pay not only for decommissioning costs but also for spent fuel management and nonradiological site restoration costs; CLI-20-12, 92 NRC 351 (2020)

if funding does not cover projected costs, licensee would need to provide a funding plan in the annual status report to cover the costs; CLI-20-12, 92 NRC 351 (2020)

if petitioner has grounds to believe that impacts of planned decommissioning, site restoration, and spent fuel management activities exceed those previously reviewed, its recourse is a petition for enforcement action; CLI-20-12, 92 NRC 351 (2020)

if the available funds are not sufficient to cover projected cost of managing the spent fuel, annual report must include a plan to obtain additional funds; CLI-20-12, 92 NRC 351 (2020)

license transfer applicant for a reactor that has permanently ceased operating must demonstrate that it has the financial qualifications to pay for managing the spent fuel on the site; CLI-20-12, 92 NRC 351 (2020)

licensee must provide to NRC, for its review and preliminary approval, a program to manage and to provide funding for managing all spent fuel at the reactor; CLI-20-12, 92 NRC 351 (2020)

NRC oversight of financial ability to decommission a facility and to manage the spent fuel on the site does not end after the financial qualification review; CLI-20-12, 92 NRC 351 (2020)

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SPENT FUEL POOL EXPANSION PROCEEDING

expansion of a spent fuel pool is an example of a significant license amendment for which the 50-mile proximity presumption would apply; CLI-20-16, 92 NRC 511 (2020)

SPENT FUEL POOLS

although the 50-mile proximity presumption does not apply in spent fuel pool cases, persons living little more than a stone's throw from the facility meet the proximity test; LBP-20-7, 92 NRC 1 (2020)

contention challenging method for ensuring subcriticality in spent fuel pool as insufficiently conservative is inadmissible; LBP-20-7, 92 NRC 1 (2020)

contention that more prudent action to ensure spent fuel pool subcriticality is reducing density by removal and placement in dry cask storage is inadmissible; LBP-20-7, 92 NRC 1 (2020)

contention that not physically removing the degraded Boraflex from spent fuel pool will result in unanticipated consequences and debris in the spent fuel pool is inadmissible; LBP-20-7, 92 NRC 1 (2020)

contention that potential use of experimental, higher enriched and longer burnup fuel has not undergone adequate evaluation as pertains to being placed into spent fuel pool and subsequent impact on criticality is inadmissible; LBP-20-7, 92 NRC 1 (2020)

contention that removal and replacement of Boraflex in the spent fuel pool has potential for a significant increase in probability or consequences of an accident is inadmissible; LBP-20-7, 92 NRC 1 (2020)

contention that specific analysis of the spent fuel pool as currently loaded is needed prior to consideration of license amendment is inadmissible; LBP-20-7, 92 NRC 1 (2020)

issue that removal and replacement of Boraflex in the spent fuel pool has potential for a significant increase in probability or consequences of an accident is inadmissible; LBP-20-7, 92 NRC 1 (2020)

petitioners living up to 17 miles away have been granted standing in spent fuel pool cases; LBP-20-7, 92 NRC 1 (2020)

SPENT FUEL STORAGE

contention that certified storage systems would not be suitable to store fuel as allowed by their design certifications is barred; CLI-20-15, 92 NRC 491 (2020)

Continued Storage Rule explicitly excuses applicant from providing a site-specific description of environmental impacts related to spent fuel storage that may occur after the initial 40-year license term; CLI-20-14, 92 NRC 463 (2020)

environmental impacts described in NUREG-2157 are deemed incorporated into the environmental impact statement for an independent spent fuel storage installation; CLI-20-13, 92 NRC 457 (2020)

inadmissibility of contention that central premise of application is that the U.S. Department of Energy will take ownership of the waste and contract with applicant to store it until a permanent repository is available is upheld; CLI-20-14, 92 NRC 463 (2020)

inadmissibility of contention that environmental report and SAR failed to account for effects of storing high-burnup fuel at the proposed ISFSI is upheld; CLI-20-15, 92 NRC 491 (2020)

independent spent fuel storage installation applicant is not required to address impacts of spent nuclear fuel storage beyond the license term; CLI-20-13, 92 NRC 457 (2020)

See also Independent Spent Fuel Storage Installation

SPENT FUEL STORAGE CASKS

accidental canister breach during shipping or storage was not a credible scenario; CLI-20-15, 92 NRC 491 (2020)

claims that high-burnup fuel could rupture licensed casks is an impermissible challenge to the certified design of the casks; CLI-20-15, 92 NRC 491 (2020)

inadmissibility of contention that impacts of storage containers used beyond their licensing period should be considered is upheld; CLI-20-15, 92 NRC 491 (2020)

STANDARD OF PROOF

applicant bears the burden of proof for all matters on which an intervenor has satisfied its burden of going forward, requiring applicant to show by a preponderance of the evidence that it is entitled to the applied-for license; LBP-20-9, 92 NRC 58 (2020)

board must determine, based on preponderance of the evidence, whether applicant has established its position that the possibility of delamination of concrete at the plant is sufficiently understood and monitored such that the continued operation will not endanger public health and safety; LBP-20-9, 92 NRC 58 (2020)

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reasonable assurance standard does not require proof beyond a reasonable doubt; LBP-20-9, 92 NRC 58 (2020)

STANDARD OF REVIEW

Commission affords substantial deference to board's threshold determinations on contention admissibility unless an appeal demonstrates an error of law or abuse of discretion; CLI-20-8, 92 NRC 255 (2020); CLI-20-11, 92 NRC 335 (2020); CLI-20-13, 92 NRC 457 (2020); CLI-20-14, 92 NRC 463 (2020); CLI-20-15, 92 NRC 491 (2020); CLI-20-18, 92 NRC 530 (2020)

Commission may grant review, in its discretion, where petitioner raises a substantial question with respect to the considerations in 10 C.F.R. 2.341(b)(4); CLI-20-9, 92 NRC 295 (2020)

standard of clear error for overturning a board's factual findings following a merits hearing is high; CLI-20-8, 92 NRC 255 (2020)

whether NRC Staff's attempts to consult with a tribe adequately fulfilled its NHPA consultation duties is a question of fact subject to the clear error standard of review; CLI-20-9, 92 NRC 295 (2020)

STANDING TO INTERVENE

absent situations involving obvious potential for offsite consequences, petitioner must allege some specific injury in fact that will result from the action taken; LBP-20-8, 92 NRC 23 (2020)

although the 50-mile proximity presumption does not apply in spent fuel pool cases, persons living little more than a stone's throw from the facility meet the proximity test; LBP-20-7, 92 NRC 1 (2020)

assertions of standing are construed in favor of petitioners, but petitioner has the burden of establishing each element of contention admissibility; CLI-20-15, 92 NRC 491 (2020)

board found standing on the basis of members who lived several miles away from interim spent fuel storage facility; LBP-20-7, 92 NRC 1 (2020)

board rejected interim spent fuel storage facility applicant's claim that petitioners must first demonstrate with specificity how radiation might reach them; LBP-20-7, 92 NRC 1 (2020)

burden is on petitioner to provide sufficient facts to establish standing; CLI-20-7, 92 NRC 225 (2020)

Commission affords greater latitude to a hearing request submitted by a pro se petitioner, but it is ultimately petitioner's burden to provide sufficient facts to establish standing; CLI-20-16, 92 NRC 511 (2020)

Commission has long applied contemporaneous judicial concepts of standing to assess whether petitioner has established the requisite interest to intervene; CLI-20-16, 92 NRC 511 (2020)

Commission has never granted proximity-based standing to a petitioner in an indirect license transfer adjudication; CLI-20-16, 92 NRC 511 (2020)

Commission has not applied proximity-based standing where the radiological source presented a low potential for radiological consequences or where the facility in question was essentially a passive structure rather than an operating facility; CLI-20-16, 92 NRC 511 (2020)

Commission has rejected proximity standing for certain changes to worker-protection requirements; LBP-20-8, 92 NRC 23 (2020)

Commission has rejected proximity standing for license amendments associated with shut down and defueled reactors; LBP-20-8, 92 NRC 23 (2020)

Commission has rejected proximity standing for license transfers; LBP-20-8, 92 NRC 23 (2020)

Commission looks for guidance to judicial concepts of standing which require a showing of a concrete and particularized injury (actual or threatened) that is fairly traceable to the challenged action and likely to be redressed by a favorable decision in the proceeding; CLI-20-12, 92 NRC 351 (2020)

concern that reactors are inherently dangerous presents an undefined potential for radiological harm from the ultimate construction and operation of the reactors; CLI-20-16, 92 NRC 511 (2020)

concerns of nearby residents over a licensee's financial ability to properly carry out and complete decommissioning is sufficient to establish standing; CLI-20-12, 92 NRC 351 (2020)

contemporaneous judicial standing concepts generally require a showing of injury-in-fact within the statutory zones of interest, causation, and redressability; LBP-20-8, 92 NRC 23 (2020)

decision on standing is not a ruling on either admissibility or merits of contentions; LBP-20-8, 92 NRC 23 (2020)

decisions regarding standing in prior license amendment proceedings relating to a facility are not dispositive for a subsequent proceeding but standing was granted where both implicated Tier 1 information changes; LBP-20-8, 92 NRC 23 (2020)

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determinations do not hinge to any extent on an appraisal of how much or little assistance the would-be intervenor might render in the decisional process; CLI-20-7, 92 NRC 225 (2020)

difference in potential risk between a reactor and an independent spent fuel storage installation justified a determination that proximity-based standing was not available in ISFSI direct license transfer proceeding; CLI-20-16, 92 NRC 511 (2020)

direct transfer of a 50% non-operating interest did not warrant proximity standing; CLI-20-7, 92 NRC 225 (2020)

effect of change in ownership on members' monthly utility bills is an economic interest that falls outside the zone of interests protected by the Atomic Energy Act; CLI-20-7, 92 NRC 225 (2020)

expansion of a spent fuel pool is an example of a significant license amendment for which the 50-mile proximity presumption would apply; CLI-20-16, 92 NRC 511 (2020)

fact-specific standing allegations, not conclusory assertions, such as general assertions of proximity, are required to establish the proximity presumption; LBP-20-8, 92 NRC 23 (2020)

fifty-mile proximity presumption applies to proceedings for issuance or renewal of a reactor construction permit/operating license under 10 C.F.R. Part 50 or an early site permit/COL under 10 C.F.R. Part 52; LBP-20-8, 92 NRC 23 (2020)

fifty-mile proximity presumption for construction permit and operating license proceedings rests on a finding that persons living within the roughly 50-mile radius of the facility face a realistic threat of harm if a release from the facility of radioactive material were to occur; CLI-20-16, 92 NRC 511 (2020)

general statements that a member lives in the same zip code and in close proximity to a facility, without more, are insufficient to demonstrate interest; CLI-20-7, 92 NRC 225 (2020)

hearing petition generally will be construed in petitioner's favor as it seeks to demonstrate standing; LBP-20-8, 92 NRC 23 (2020)

if petitioner cannot show an obvious potential for harm from a proposed activity, the inquiry reverts to a traditional standing analysis of injury, traceability, and redressability; CLI-20-7, 92 NRC 225 (2020); CLI-20-16, 92 NRC 511 (2020)

if petitioners have not established standing to intervene the question of whether petitioners have submitted at least one admissible contention need not be reached; CLI-20-16, 92 NRC 511 (2020)

in cases involving license transfers or non-power reactors, proximity-based standing is determined on a case-by-case basis, considering the obvious potential for offsite radiological consequences, or lack thereof, from the application at issue; CLI-20-16, 92 NRC 511 (2020)

in certain licensing proceedings NRC recognizes a proximity presumption under which petitioner is presumed to have standing to intervene if the petitioner lives within, or otherwise has frequent contacts with, the zone of possible harm from the nuclear reactor; CLI-20-16, 92 NRC 511 (2020)

in construction permit and operating license cases, persons living within the roughly 50-mile radius of the facility face a realistic threat of harm if a release from the facility of radioactive material were to occur; CLI-20-7, 92 NRC 225 (2020)

in context of standing, inadequate decommissioning funding could lead to uncompleted decommissioning, and in turn that inadequate cleanup of the reactor site may result in adverse health effects, loss of aesthetic enjoyment, and diminished property values for those who live, work or play in the immediate vicinity; CLI-20-12, 92 NRC 351 (2020)

in license amendment cases, burden falls on petitioner to demonstrate the plausibility of offsite consequences; LBP-20-7, 92 NRC 1 (2020)

in license amendment cases, proximity presumption applies only if the challenged license amendments present an obvious potential for offsite radiological consequences; LBP-20-8, 92 NRC 23 (2020)

in license amendment proceeding, a proximity plus standard is applied on a case-by-case basis, taking into account the nature of proposed action and significance of the radioactive source; LBP-20-7, 92 NRC 1 (2020)

in license transfer proceedings, application of the proximity presumption is determined on a case-by-case basis, considering the potential for offsite radiological consequences; CLI-20-7, 92 NRC 225 (2020)

in proceedings involving construction or operation of a nuclear power plant, the geographic zone of potential harm is the area within a 50-mile radius of the site; LBP-20-7, 92 NRC 1 (2020)

in proceedings other than reactor construction permit/operating license issuance or renewal or early site permit/COL, proximity presumption is determined on a case-by-case basis considering petitioner's

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location and nature of proposed action and significance of the radioactive source; LBP-20-8, 92 NRC 23 (2020)

in traditional standing jurisprudence, petitioners must show that the alleged harm is fairly traceable to the challenged action and that the asserted injury could be redressed by this proceeding; CLI-20-16, 92 NRC 511 (2020)

independent spent fuel storage installation is a passive structure and the distance it takes to be realistically threatened is less than that for a power reactor; CLI-20-15, 92 NRC 491 (2020)

indirect license transfers involving no change in operator, direct owner, and physical plant create no obvious source of actual or potential harm; CLI-20-7, 92 NRC 225 (2020)

information that petitioner should include in its petition to establish standing is set out in 10 C.F.R. 2.309(d) but the standard the board must apply when deciding whether that information is sufficient is not; LBP-20-7, 92 NRC 1 (2020)

injury that established standing must be both concrete and particularized, not conjectural or hypothetical; CLI-20-7, 92 NRC 225 (2020); CLI-20-16, 92 NRC 511 (2020)

intervention petition must include name, address, and telephone number of petitioner, nature of petitioner's right to be made a party, nature and extent of petitioner's interest, and possible effect of any resulting decision or order on petitioner's interest; LBP-20-8, 92 NRC 23 (2020)

intervention petitioner has the burden to demonstrate that standing requirements are met; LBP-20-7, 92 NRC 1 (2020)

intervention petitioner in a license amendment proceeding must assert an injury-in-fact associated with the challenged license amendment, not simply a general objection to the facility; LBP-20-8, 92 NRC 23 (2020)

intervention petitioner must establish a plausible nexus between challenged license amendments and petitioner's asserted harm; LBP-20-8, 92 NRC 23 (2020)

intervention petitioner must indicate how the license amendments at issue would increase risk of offsite release of radioactive fission products; LBP-20-8, 92 NRC 23 (2020)

intervention petitioner must satisfy contemporaneous judicial standing concepts; LBP-20-8, 92 NRC 23 (2020)

it is not acceptable in NRC practice for a petitioner to claim standing based on vague assertions, and when that fails, to attempt to repair the defective pleading with fresh details at a later juncture; CLI-20-7, 92 NRC 225 (2020)

license transfers even for operating nuclear power plants typically involve little if any radiological risk, as there are generally no changes to the physical plant, its operating procedures, or its design basis accident analysis; CLI-20-16, 92 NRC 511 (2020)

NRC applies contemporaneous judicial concepts of standing to assess whether a petitioner has set forth a sufficient interest to qualify for a hearing; CLI-20-7, 92 NRC 225 (2020)

organizational or representational standing may be sought in NRC proceedings; LBP-20-8, 92 NRC 23 (2020)

petitioner bears the burden of establishing its standing; LBP-20-8, 92 NRC 23 (2020)

petitioner could not rely on other boards' findings of standing in two prior proceedings concerning the same facility; LBP-20-8, 92 NRC 23 (2020)

petitioner generally must make a fresh standing demonstration in each proceeding in which intervention is sought because petitioner's circumstances may change from one proceeding to the next; LBP-20-8, 92 NRC 23 (2020)

petitioner may demonstrate traditional standing by showing that a person or organization has suffered or might suffer a concrete and particularized injury that is fairly traceable to the challenged action, likely redressable by a favorable decision, and arguably within the zone of interests protected by the governing statutes; LBP-20-7, 92 NRC 1 (2020)

petitioner may take advantage of proximity presumptions the Commission has created to simplify standing requirements for individuals who reside within, or have frequent contacts with, a geographic zone of potential harm; LBP-20-7, 92 NRC 1 (2020)

petitioner may use either traditional judicial standing precepts or the proximity presumption; LBP-20-8, 92 NRC 23 (2020)

petitioner may use the proximity presumption if petitioner has a significant property interest within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 23 (2020)

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petitioner may use the proximity presumption if petitioner has frequent contacts within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 23 (2020)

petitioner may use the proximity presumption if petitioner lives within approximately 50 miles of a reactor; LBP-20-8, 92 NRC 23 (2020)

petitioner must have some direct interest in the outcome of the proceeding; LBP-20-8, 92 NRC 23 (2020)

petitioner must identify an interest in the proceeding by claiming an actual or threatened injury that is fairly traceable to the challenged action, is likely to be redressed by a favorable decision, and arguably falls within the zone of interests protected by the AEA; CLI-20-7, 92 NRC 225 (2020); CLI-20-16, 92 NRC 511 (2020)

petitioner must specify contacts with the affected area in its intervention petition; LBP-20-8, 92 NRC 23 (2020)

petitioner must specify the facts pertaining to its interest; CLI-20-7, 92 NRC 225 (2020); CLI-20-16, 92 NRC 511 (2020)

petitioner must submit at least one admissible contention; CLI-20-7, 92 NRC 225 (2020)

petitioner residing within 50 miles of nuclear power plant site is entitled to presumptive proximity standing; CLI-20-16, 92 NRC 511 (2020)

petitioner showed no obvious potential for offsite consequences or plausible means by which he could be harmed by possession-only license; CLI-20-15, 92 NRC 491 (2020)

petitioner who establishes standing in one case may employ that standing determination in another proceeding that is merely another round in a continuing controversy; LBP-20-8, 92 NRC 23 (2020)

petitioner who lives within approximately 50 miles of a nuclear reactor is presumed to have standing in certain types of proceedings; CLI-20-7, 92 NRC 225 (2020); CLI-20-16, 92 NRC 511 (2020)

petitioner who lives within, or otherwise has frequent contacts with, the zone of possible harm from the nuclear reactor is presumed to have standing in certain types of proceedings; CLI-20-7, 92 NRC 225 (2020)

petitioners living up to 17 miles away have been granted standing in spent fuel pool cases; LBP-20-7, 92 NRC 1 (2020)

presumed zone of potential harm corresponds roughly to the ingestion pathway emergency planning zone applicable to the currently licensed fleet of commercial power reactors; LBP-20-8, 92 NRC 23 (2020)

proximity presumption relieves petitioner of the need to satisfy traditional elements of standing; LBP-20-8, 92 NRC 23 (2020)

proximity standing is limited when there are no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel; LBP-20-8, 92 NRC 23 (2020)

proximity-based standing determined on a case-by-case basis considers whether the proposed action involves a significant source of radioactivity producing an obvious potential for offsite consequences and the geographical extent appropriate for the danger posed by the source at issue; CLI-20-16, 92 NRC 511 (2020)

proximity-based standing is unavailable where the proposed action does not involve changes to the operation, personnel, or financing of the facility; CLI-20-16, 92 NRC 511 (2020)

ratepayer interests do not confer standing in NRC proceedings; CLI-20-7, 92 NRC 225 (2020)

representational standing was granted on a power uprate application to an organization with members who lived within 15 miles of the plant; LBP-20-8, 92 NRC 23 (2020)

requirements for standing are not strict by design, in contrast to NRC's contention admissibility requirements; LBP-20-7, 92 NRC 1 (2020)

residence 6 miles from proposed independent spent fuel storage installation site is well within the distance for which standing has been found at similar and much smaller materials facilities; CLI-20-15, 92 NRC 491 (2020)

standing and contention admissibility are separate issues with distinct requirements; CLI-20-15, 92 NRC 491 (2020)

standing based on geographic proximity is not confined solely to Part 50 reactor licenses, but is also applicable to materials cases where the potential for offsite consequences is obvious; LBP-20-7, 92 NRC 1 (2020)

standing was granted based on petitioner's member's residence within 10 miles and significant activities within approximately 3 miles of proposed large consolidated ISFSI; CLI-20-16, 92 NRC 511 (2020)

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to demonstrate injury in fact, petitioners must show that they will in fact be perceptibly harmed by the challenged agency action, not that they can imagine circumstances in which they could be affected by the agency's action; CLI-20-16, 92 NRC 511 (2020)

to determine whether petitioner has sufficient interest, contemporaneous judicial concepts of standing are applied; LBP-20-7, 92 NRC 1 (2020)

to intervene in a license transfer proceeding, petitioner must demonstrate standing by showing that its interest may be affected by the proceeding; CLI-20-7, 92 NRC 225 (2020)

to obtain presumptive standing based on proximity, petitioners must show that the instant license transfer proceeding presents an obvious potential for offsite radiological consequences; CLI-20-16, 92 NRC 511 (2020)

to support standing in an NRC proceeding, an economic harm must be directly related to environmental or radiological harm; CLI-20-7, 92 NRC 225 (2020)

where an application concerns a nuclear power plant, persons who reside or have frequent contacts within a fifty-mile radius of a plant are presumed to have standing; CLI-20-15, 92 NRC 491 (2020)

where an application concerns facilities other than nuclear power plants, a proximity plus standard is applied on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source; CLI-20-15, 92 NRC 491 (2020)

STANDING TO INTERVENE, ORGANIZATIONAL

interests that an organization seeks to protect must be germane to its own purpose, and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-20-7, 92 NRC 225 (2020)

mere interest in a problem, no matter how longstanding and how qualified the organization is in evaluating the problem, is not sufficient by itself to render the organization adversely affected within the meaning of the Administrative Procedure Act; CLI-20-7, 92 NRC 225 (2020)

NRC does not recognize standing for an organization that seeks to raise environmental or safety matters that are of general concern but do not directly affect the organization's own interests; CLI-20-7, 92 NRC 225 (2020)

organization may establish either a cognizable injury to its organizational interests or harm to the interests of its members; LBP-20-8, 92 NRC 23 (2020)

organization seeking to intervene in its own right must satisfy the same standing requirements as an individual seeking to intervene; CLI-20-7, 92 NRC 225 (2020)

organization's interest in license transferee's corporate structure, in and of itself, does not demonstrate injury that demonstrates standing; CLI-20-7, 92 NRC 225 (2020)

petitioner seeking to intervene may demonstrate standing based on an asserted harm to interest of one or more of its individual members or to its own organizational interest; CLI-20-7, 92 NRC 225 (2020)

to address the injury requirement, an organization must show that the licensing action would constitute a threat to its organizational interests; CLI-20-7, 92 NRC 225 (2020)

STANDING TO INTERVENE, REPRESENTATIONAL

general statements do not demonstrate that one of an organization's members qualifies for standing in his or her own right; CLI-20-7, 92 NRC 225 (2020)

interests that an organization seeks to protect must be germane to its own purpose, and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action; CLI-20-7, 92 NRC 225 (2020)

member declarations, when considered along with pro se petition, show that there are sufficient allegations of increased risk of harm associated with the amendment to demonstrate the basis for standing through application of proximity presumption; LBP-20-8, 92 NRC 23 (2020)

organization must demonstrate how at least one of its members may be affected by the licensing action, identify the member, and show that the organization is authorized to represent that member; CLI-20-7, 92 NRC 225 (2020); LBP-20-8, 92 NRC 23 (2020)

organization must show that interests it seeks to protect are germane to its own purpose, identify at least one member who qualifies for standing in his or her own right, show that it is authorized by that member to request a hearing, and show that neither the claim asserted nor the relief requested requires an individual member's participation in the legal action; LBP-20-7, 92 NRC 1 (2020); LBP-20-8, 92 NRC 23 (2020)

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standing discussion must identify a member by name or provide an affidavit or other documentation showing that a member has authorized the organization to represent his or her interests in this matter; CLI-20-7, 92 NRC 225 (2020)

STANDING TO INTERVENE, REPRESENTATIONAL

organization must demonstrate how at least one of its members may be affected by the challenged licensing action and would have standing in his or her own right; CLI-20-12, 92 NRC 351 (2020)

organization must identify member that it represents by name and address and demonstrate that the member has authorized the organization to request a hearing on his or her behalf; CLI-20-12, 92 NRC 351 (2020); CLI-20-16, 92 NRC 511 (2020)

organization must show that at least one of its members may be affected by NRC's approval of a licensing action; CLI-20-16, 92 NRC 511 (2020)

organization must show that the interests it seeks to protect are germane to its own purpose; CLI-20-16, 92 NRC 511 (2020)

organization seeking to intervene may obtain standing as a representative of one or more of its individual members; CLI-20-16, 92 NRC 511 (2020)

STATUTORY CONSTRUCTION

basic canon of statutory construction is that the express mention of one thing excludes all others; CLI-20-11, 92 NRC 335 (2020)

counsel may argue how the law should be interpreted, but in general that is not a proper subject of expert testimony; LBP-20-9, 92 NRC 58 (2020)

STAY

motion for a stay must be filed within 10 days of board's ruling; CLI-20-10, 92 NRC 327 (2020)

stay or revocation of a renewed license would only serve to reinstate the prior license; CLI-20-8, 92 NRC 255 (2020)

STORAGE CANISTERS

licensee may apply to renew a certificate if the certificate holder does not seek renewal; CLI-20-15, 92 NRC 491 (2020)

safety evaluations for waste packages have led NRC to conclude that accidental canister breaches are not credible scenarios; CLI-20-14, 92 NRC 463 (2020)

STRUCTURAL INTEGRITY

ability of a structural member to withstand applied and compression loads is discussed; LBP-20-9, 92 NRC 58 (2020)

accidental canister breach during shipping or storage was not a credible scenario; CLI-20-15, 92 NRC 491 (2020)

axial compression, shearing forces, flexure, limit state, and loads are discussed; LBP-20-9, 92 NRC 58 (2020)

board must determine, based on preponderance of the evidence, whether applicant has established its position that the possibility of delamination of concrete at the plant is sufficiently understood and monitored such that the continued operation will not endanger public health and safety; LBP-20-9, 92 NRC 58 (2020)

containment structures must maintain a leak-tight barrier against uncontrolled release of radioactivity to the environment and to ensure that containment design conditions important to safety are not exceeded; LBP-20-9, 92 NRC 58 (2020)

contention alleging wrongdoing regarding timeliness of licensee's reporting to NRC on stability of the Nuclear Island basemat is inadmissible; LBP-20-8, 92 NRC 23 (2020)

contention that foundation settlement issues and construction factors create unacceptable operational risk to public health and safety is inadmissible; LBP-20-8, 92 NRC 23 (2020)

internal components of the containment structure must be able to accommodate calculated pressure and temperature conditions resulting from any loss-of-coolant accident; LBP-20-9, 92 NRC 58 (2020)

requirements are satisfied by demonstrating that the containment will continue to meet GDC 1 and 2 for all design-basis loads and load combinations including ASR under normal and accident conditions; LBP-20-9, 92 NRC 58 (2020)

requirements are satisfied where ASR-affected structures will continue to comply with GDC 1 and 2, and where design-basis loads and load combinations include the dynamic effects associated with missiles, pipe whipping, and discharging fluids; LBP-20-9, 92 NRC 58 (2020)

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safety evaluations for waste packages have led NRC to conclude that accidental canister breaches are not credible scenarios; CLI-20-14, 92 NRC 463 (2020)

SUBPART L PROCEEDINGS

written prefiled testimony and exhibits are typically submitted well in advance of the evidentiary hearing, and in NRC's most common types of hearings, licensing boards themselves, not the parties, orally examine witnesses; LBP-20-9, 92 NRC 58 (2020)

SUBSEQUENT OPERATING LICENSE RENEWAL

applicability of 10 C.F.R. 51.53(c)(3) is discussed; CLI-20-11, 92 NRC 335 (2020)

assertion that environmental report fails to address accident risks posed by aging reactor equipment during a second license renewal term in violation of the National Environmental Policy Act is addressed; CLI-20-11, 92 NRC 335 (2020)

for Category 1 issues, Table B-1 contains a generic assessment and codification of the impacts that are reasonably likely to occur during a subsequent term; CLI-20-11, 92 NRC 335 (2020)

need for subsequent license renewal applicant to address reactor aging phenomena and their effects during the subsequent renewal period is discussed; CLI-20-11, 92 NRC 335 (2020)

NRC's findings on NEPA issues for license renewal of nuclear power reactors are addressed and each issue is assigned to a category; CLI-20-11, 92 NRC 335 (2020)

risk of operating with aging equipment is a Category 1 issue that environmental report can address by relying on the environmental findings contained in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1; CLI-20-11, 92 NRC 335 (2020)

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

adjudicatory record is allowed to augment existing environmental analyses in considering whether NRC Staff should have to issue a supplement to the final SEIS; CLI-20-9, 92 NRC 295 (2020)

agency must use a rule of reason to decide whether new information warrants a supplemental environmental impact statement; CLI-20-9, 92 NRC 295 (2020)

claim that NRC did not fully disclose potential radiological impacts of a terrorist attack in its supplemental environmental impact statement is considered; CLI-20-9, 92 NRC 295 (2020)

Commission considered claim that NRC did not fully disclose potential radiological impacts of a terrorist attack in its SEIS; CLI-20-8, 92 NRC 255 (2020)

it is not unreasonable for an agency to decline to study in an SEIS a pollutant for which there are not yet standard methods of measurement or analysis; CLI-20-8, 92 NRC 255 (2020)

no additional NEPA analysis was necessary where a license amendment request falls within categorical exclusions; CLI-20-10, 92 NRC 327 (2020)

supplementation of an EIS is required when the scope of the project has changed or there is significant new information; CLI-20-9, 92 NRC 295 (2020)

SURVEILLANCE

licensees must determine if surveillance data show a significantly different trend than predicted in a reactor pressure vessel embrittlement model; LBP-20-12, 92 NRC 431 (2020)

NRC requires a licensee that specifies a delayed completion of decommissioning by including a storage or surveillance period to provide a means of adjusting cost estimates over the storage or surveillance period; CLI-20-12, 92 NRC 351 (2020)

SUSPENSION OF LICENSE

because licensing board lacks jurisdiction to suspend previously issued construction permit, intervenor seeking such relief must file 10 C.F.R. 2.206 petition; LBP-20-8, 92 NRC 23 (2020)

SUSPENSION OF PROCEEDING

Commission has considered petitions to suspend adjudicatory, licensing, and rulemaking activities in multiple proceedings under its inherent supervisory authority and declined to address procedural issues that would merit further discussion in a traditional adjudication; CLI-20-17, 92 NRC 521 (2020)

Commission has considered requests to suspend proceedings or hold them in abeyance in the exercise of its inherent supervisory powers over proceedings; CLI-20-17, 92 NRC 521 (2020)

Commission views suspension of licensing proceedings to be a drastic action that is not warranted absent immediate threats to public health and safety; CLI-20-17, 92 NRC 521 (2020)

TECHNICAL QUALIFICATIONS

contention that environmental report fails to address significance of the declining amount of external operating experience due to the early shutdown or retirement of a significant portion of currently

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- operating fleet of reactors is speculative, incorrect, and thus inadmissible; CLI-20-11, 92 NRC 335 (2020)
- expert may be qualified to testify based on knowledge, skill, experience, training, or education; LBP-20-9, 92 NRC 58 (2020)
- expert witness was qualified to testify as to the obviousness of design and validity of patent claims, despite not being a licensed professional engineer; LBP-20-9, 92 NRC 58 (2020)
- gaps in an expert's knowledge go to weight of the testimony; LBP-20-9, 92 NRC 58 (2020)
- license transfer applicant must demonstrate its qualifications; CLI-20-12, 92 NRC 351 (2020)
- license transfer review is limited to specific matters, including technical and financial qualifications of proposed transferee; CLI-20-12, 92 NRC 351 (2020)
- licensee may take action without obtaining a license amendment if there is no change to the facility's technical specifications; LBP-20-9, 92 NRC 58 (2020)
- unwarranted and inflexible barriers, such as too great an insistence on specific knowledge in selected aspects of a subject, should not disqualify an expert witness who possesses a strong general background and specialized knowledge in the relevant field; LBP-20-9, 92 NRC 58 (2020)
- when licensee seeks to amend its license, including technical specifications in the license, it must file an application for amendment that fully describes the changes desired; LBP-20-9, 92 NRC 58 (2020)
- TERMINATION OF REACTOR OPERATIONS
 - license transfer applicant for a reactor that has permanently ceased operating must demonstrate that it has the financial qualifications to pay for managing the spent fuel on the site; CLI-20-12, 92 NRC 351 (2020)
 - license transfer applicants need not demonstrate financial qualification to cover power reactor operating costs if reactor operations have permanently ceased; CLI-20-12, 92 NRC 351 (2020)
- TERRORISM
 - claim that NRC did not fully disclose potential radiological impacts of a terrorist attack in its supplemental environmental impact statement is considered; CLI-20-9, 92 NRC 295 (2020)
 - terrorist attacks are too far removed from the natural or expected consequences of agency action to require environmental analysis in an NRC licensing proceeding; CLI-20-14, 92 NRC 463 (2020)
- TESTIMONY
 - board applies appropriate evidentiary weight to testimony to ensure that the hearing is fair and produces an adequate record; LBP-20-9, 92 NRC 58 (2020)
 - boards generally do not hear from petitioner's experts at oral argument on whether petitioner's written pleadings are sufficient to merit an evidentiary hearing at which experts would then testify; LBP-20-10, 92 NRC 235 (2020)
 - counsel may argue how the law should be interpreted, but in general that is not a proper subject of expert testimony; LBP-20-9, 92 NRC 58 (2020)
 - in forming his opinion, witness was permitted to consult other sources, and any weaknesses in his testimony went to its weight, rather than its admissibility; LBP-20-9, 92 NRC 58 (2020)
 - in Subpart L proceedings, written prefiled testimony and exhibits are typically submitted well in advance of the evidentiary hearing, and in NRC's most common types of hearings, licensing boards themselves, not the parties, orally examine witnesses; LBP-20-9, 92 NRC 58 (2020)
- TESTING
 - contention that test program for progression of alkali-silica reaction progression has yielded data that are not representative and proposed monitoring, acceptance criteria, and inspection intervals are not adequate is resolved; LBP-20-9, 92 NRC 58 (2020)
 - intervenor's testimony on prototype scaling supports its existing arguments on lack of representativeness and its implications for the large-scale alkali-silica reaction testing program; LBP-20-9, 92 NRC 58 (2020)
- TRANSPORTATION OF RADIOACTIVE MATERIALS
 - inadmissibility of contention that environmental justice compliance will not be possible because identification and analysis of potentially affected populations along the anticipated rail, truck, and barge routes will be improperly excluded from disclosure in the NEPA document is upheld; CLI-20-14, 92 NRC 463 (2020); CLI-20-14, 92 NRC 463 (2020)
 - inadmissibility of contention that environmental report was insufficient because it did not account for potential waste transportation and packaging issues is upheld; CLI-20-13, 92 NRC 457 (2020)

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TRANSPORTATION OF SPENT FUEL

generic effects of transportation of fuel waste for one power reactor is based on a survey of then-existing power plants; CLI-20-14, 92 NRC 463 (2020)

UNRESTRICTED RELEASE

licensee is prohibited from performing any decommissioning activities that foreclose release of the site for unrestricted use or result in a loss of reasonable assurance that adequate funds will be available for decommissioning; CLI-20-12, 92 NRC 351 (2020)

VERIFICATION

license condition must be precisely drawn so that the verification of compliance becomes a largely ministerial rather than an adjudicatory act; LBP-20-12, 92 NRC 431 (2020)

VIOLATIONS

claims of prior violations or events involving a company must be directly germane to the challenged licensing action; CLI-20-12, 92 NRC 351 (2020)

determining state of mind and intent of the individual for a deliberate misconduct violation may be difficult to prove; LBP-20-11, 92 NRC 409 (2020)

lack of any specific directive as to when additional inspections for alkali-silica reaction must be performed on seismic Category I structures creates a reasonable possibility of a violation of the maintenance rule; LBP-20-9, 92 NRC 58 (2020)

licensee willfully violated an NRC requirement when it knew what was required of it under the NRC's regulations and the terms and conditions of its license, and failed to comply therewith; LBP-20-11, 92 NRC 409 (2020)

NRC Staff is permitted to draw inferences based on the "reasonable person" standard; LBP-20-11, 92 NRC 409 (2020)

NRC Staff may infer whether a protected activity is a contributing factor to an adverse personnel action if it shows a reasonable person could infer that protected activities influenced the unfavorable personnel action to some degree; LBP-20-11, 92 NRC 409 (2020)

prima facie showing of a violation of the ERA must show that the individual engaged in protected activity, an adverse employment action was taken, and the individual's protected activity was a contributing factor in the adverse employment action; LBP-20-11, 92 NRC 409 (2020)

standards do not permit reasonable inferences, but require actual knowledge, and there is no burden on the alleged wrongdoer to refute anything with clear and convincing evidence; LBP-20-11, 92 NRC 409 (2020)

to establish adequate evidence for a violation, NRC Staff need not show any evidence of intent, actual knowledge, or that the alleged wrongdoer knew his actions would cause a licensee to violate an NRC regulation; LBP-20-11, 92 NRC 409 (2020)

WAIVER OF RULE

challenges to NRC regulations in individual adjudications are precluded without a waiver; CLI-20-15, 92 NRC 491 (2020)

WASTE DISPOSAL

environmental impacts resulting from disposal of concrete casks and storage pads from an ISFSI are generically described in the Continued Storage GEIS, which is incorporated into the Continued Storage Rule; CLI-20-14, 92 NRC 463 (2020)

WHISTLEBLOWERS

individuals working for NRC licensees are protected from retaliation for reporting potential violations of the Energy Reorganization Act or the Atomic Energy Act; LBP-20-11, 92 NRC 409 (2020)

NRC considers deliberate violations significant because of the potential that it may make others hesitant to raise safety issues for fear of retaliation; LBP-20-11, 92 NRC 409 (2020)

protected activities include notifying an employer of an alleged violation of the ERA or the AEA, testifying, assisting, or participating in any other actions to carry out the purposes of the ERA or the AEA; LBP-20-11, 92 NRC 409 (2020)

raising concerns about a chilled work environment is a protected activity; LBP-20-11, 92 NRC 409 (2020)

WILDLIFE

inadmissibility of contention that two wildlife species of concern may be present at the proposed ISFSI site is upheld; CLI-20-15, 92 NRC 491 (2020)

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WITNESSES, EXPERT

board may reject an expert's assertions if they are based on no more than a gut feeling and the expert acknowledges that he had not analyzed relevant documentation; LBP-20-9, 92 NRC 58 (2020)

boards generally do not hear from petitioner's experts at oral argument on whether petitioner's written pleadings are sufficient to merit an evidentiary hearing at which experts would then testify; LBP-20-10, 92 NRC 235 (2020)

Commission gives the highest deference to findings of fact that turn on witness credibility; CLI-20-9, 92 NRC 295 (2020)

data used in analyses to support conclusions asserted in the expert's testimony must be made available to enable a board to make a reasoned judgment on the weight; LBP-20-9, 92 NRC 58 (2020)

differing analyses of experts of factual information already in the record do not normally constitute the type of information for which reopening of the record would be warranted; LBP-20-12, 92 NRC 431 (2020)

expert may be qualified to testify based on knowledge, skill, experience, training, or education; LBP-20-9, 92 NRC 58 (2020)

expert was qualified to testify as to obviousness of design and validity of patent claims, despite not being a licensed professional engineer; LBP-20-9, 92 NRC 58 (2020)

gaps in an expert's knowledge go to weight of the testimony; LBP-20-9, 92 NRC 58 (2020)

if expert testimony is crucial to outcome of a safety or environmental issue, the expert must make available sufficient information on details of the analysis to permit correctness of the conclusion to be evaluated; LBP-20-9, 92 NRC 58 (2020)

in forming his opinion, witness was permitted to consult other sources, and any weaknesses in his testimony went to its weight, rather than its admissibility; LBP-20-9, 92 NRC 58 (2020)

in making a case-by-case determination of reasonable assurance, board must weigh expert testimony and give an expert due weight proportionate to his/her expertise; LBP-20-9, 92 NRC 58 (2020)

intervenor must provide probative evidence or expert testimony; LBP-20-9, 92 NRC 58 (2020)

intervenor must offer specific contentions on material issues, supported by alleged facts or expert opinion; CLI-20-11, 92 NRC 335 (2020)

lack of specialization by an expert witness does not disqualify the expert but goes to weight of the expert's testimony; LBP-20-9, 92 NRC 58 (2020)

neither mere speculation nor bare conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow admission of a contention; LBP-20-8, 92 NRC 23 (2020)

petitioner must attach an affidavit from experts in the disciplines appropriate to the issues raised or from competent individuals with knowledge of the facts alleged that separately addresses each of these criteria, explaining how each has been satisfied; LBP-20-10, 92 NRC 235 (2020)

questions relating to bases and sources of an expert's opinion affect weight to be assigned that opinion rather than its admissibility and should be left for the trier of fact's consideration; LBP-20-9, 92 NRC 58 (2020)

unwarranted and inflexible barriers, such as too great an insistence on specific knowledge in selected aspects of a subject, should not disqualify an expert witness who possesses a strong general background and specialized knowledge in the relevant field; LBP-20-9, 92 NRC 58 (2020)

ZONE OF INTERESTS

petitioner's asserted injury must be arguably within the zone of interests protected by the governing statute; CLI-20-12, 92 NRC 351 (2020)

FACILITY INDEX

AURORA REACTOR; Docket No. 52-049-COL
 COMBINED LICENSE; December 22, 2020; MEMORANDUM AND ORDER; CLI-20-17, 92 NRC 521 (2020)

BELLEFONTE NUCLEAR PLANT, Units 1 and 2; Docket Nos. 50-438-LT, 50-439-LT
 LICENSE TRANSFER; December 17, 2020; MEMORANDUM AND ORDER; CLI-20-16, 92 NRC 511 (2020)

DEWEY-BURDOCK IN SITU URANIUM RECOVERY FACILITY; Docket No. 40-9075-MLA
 MATERIALS LICENSE AMENDMENT; October 8, 2020; MEMORANDUM AND ORDER; CLI-20-9, 92 NRC 295 (2020)

FERMI NUCLEAR POWER PLANT, Unit 2; Docket No. 50-341-LA
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IN SITU LEACH URANIUM RECOVERY FACILITY
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PILGRIM NUCLEAR POWER STATION; Docket Nos. 50-293-LT, 72-1044-LT
 LICENSE TRANSFER; November 12, 2020; MEMORANDUM AND ORDER; CLI-20-12, 92 NRC 351 (2020)

SEABROOK STATION, Unit 1; Docket No. 50-443-LA-2
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WCS CONSOLIDATED INTERIM STORAGE FACILITY; Docket No. 72-1050-ISFSI
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