

**NUCLEAR REGULATORY COMMISSION
ISSUANCES**

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

July 1, 2017 – December 31, 2017

Volume 86
Pages 1 - 251



Prepared by the
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
(301-415-0955)

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PREFACE

This is the eighty-sixth volume of issuances (1–251) 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, 2017, to December 31, 2017.

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.

The hardbound edition of the Nuclear Regulatory Commission Issuances is a final compilation of the monthly issuances. It includes all of the legal precedents for the agency within a six-month period. Any opinions, decisions, denials, memoranda and orders of the Commission inadvertently omitted from the monthly softbounds and any corrections submitted by the NRC legal staff to the printed softbound issuances are contained in the hardbound edition. Cross references in the text and indexes are to the NRCI page numbers which are the same as the page numbers in this publication.

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).

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(301-415-0955)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

E. Roy Hawkens, Chairman
Dr. Michael F. Kennedy
Dr. William C. Burnett

In the Matter of

**Docket Nos. 52-040-COL
52-041-COL
(ASLBP No. 10-903-02-COL-BD01)**

**FLORIDA POWER & LIGHT
COMPANY
(Turkey Point Units 6 and 7)**

July 10, 2017

This proceeding concerns an environmental challenge (Contention 2.1) by Joint Intervenors to Florida Power & Light Company's (FPL's) combined license (COL) application. Joint Intervenors assert that the NRC Staff's Final Environmental Impact Statement (FEIS) errs in concluding that the environmental impacts from FPL's deep injection wells will be "small." In this Initial Decision, the Board concludes that the FEIS correctly determines that the environmental consequences of the injected wastewater will be "small," because (1) the wastewater is unlikely to migrate to the drinking water source in the Upper Floridan Aquifer; and (2) even if the wastewater were to reach the Upper Floridan Aquifer, the pre-injection concentrations of the challenged contaminants are below EPA primary drinking water standards.

NEPA: OBJECTIVES

NEPA has two principal objectives: (1) it ensures that an agency considers every significant aspect of the environmental impact of a proposed action; and

(2) it ensures that the agency informs the public that it has, in fact, considered environmental concerns in its decisionmaking process. *See Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983).

NEPA: REQUIREMENTS

NEPA directs that, to the fullest extent possible, all agencies of the federal government shall include in every major federal action significantly affecting the quality of the human environment, a detailed statement by the responsible official on the environmental impact of the proposed action. 42 U.S.C. § 4332(C)(i). The issuance of a combined license is a “major federal action.” *See Blue Ridge Envtl. Def. League v. NRC*, 716 F.3d 183, 188 (D.C. Cir. 2013).

NEPA: HARD LOOK REQUIREMENT; NRC STAFF RESPONSIBILITY

NEPA requires the NRC Staff to take a “hard look” at any significant environmental consequences of a proposed licensing action. *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 374 (1989).

NEPA: RULE OF REASON

NEPA’s requisite “hard look” is subject to a “rule of reason.” This means that agencies need not consider risks that are “remote and speculative” or events that have a very low probability of occurring. *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 754-55 (3d Cir. 1989).

NEPA: ENVIRONMENTAL ANALYSIS

NEPA “does not call for certainty or precision, but an *estimate* of anticipated (not unduly speculative) impacts.” *Louisiana Energy Servicers, L.P.* (National Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005).

NEPA: ENVIRONMENTAL IMPACTS

“NEPA itself does not mandate particular results, but simply prescribes the necessary process” that an agency must follow in evaluating environmental impacts. “NEPA merely prohibits uninformed — rather than unwise — agency action.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350, 351 (1989).

RULES OF PRACTICE: BURDEN OF PROOF

In proceedings that involve NEPA contentions, the NRC Staff bears the burden of proof because it has the statutory obligation of complying with NEPA. *See, e.g., Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1049 (1983). To carry that burden, the NRC Staff must establish that its position is supported by a preponderance of the evidence. *See Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 302 n.22 (1994).

NEPA: AGENCY DISCRETION

“[W]hile there ‘will always be more data that could be gathered,’ agencies ‘must have some discretion to draw the line and move forward with decision-making.’” *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315 (2010) (quoting *Town of Winthrop v. FAA*, 535 F.3d 1, 11 (1st Cir. 2008)).

NEPA: RULE OF REASON

“NEPA ‘should be construed in the light of reason if it is not to demand’ virtually infinite study and resources.” *Pilgrim*, CLI-10-11, 71 NRC at 315 (quoting *NRDC v. Hodel*, 865 F.2d 288, 294 (D.C. Cir. 1988)).

NEPA: RULE OF REASON; AGENCY DISCRETION

“NEPA allows agencies ‘to select their methodology as long as that methodology is reasonable.’” *See Pilgrim*, CLI-10-11, 71 NRC at 316 (quoting *Town of Winthrop v. FAA*, 535 F.3d 1, 13 (1st Cir. 2008)).

NEPA: HARD LOOK REQUIREMENT

An Intervenor’s mere disagreement with the FEIS does not render it deficient. NEPA’s “hard look” standard only requires an agency to discuss the relevant issues and opposing viewpoints to ensure that “the agency’s decision is ‘fully informed’ and ‘well-considered.’” *Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1324-25 (D.C. Cir. 2015).

NEPA: RELIANCE ON STATE AGENCIES

STATE REGULATORY REQUIREMENTS: PRESUMPTION OF ADMINISTRATIVE REGULARITY

It is reasonable for the NRC Staff to expect that a state regulatory authority will adequately enforce its own regulations. The “well-recognized presumption of administrative regularity” that applies to the NRC Staff in the execution of its official duties, *Arkansas Power & Light Co.* (Arkansas Nuclear One Unit 2), ALAB-94, 6 AEC 25, 28 (1973), likewise applies to state regulatory officials. *See Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-308, 3 NRC 20, 30 (1976) (rejecting intervenors’ argument that an applicant’s proposal did not conform to the terms of a state permit and stating that “[i]t is for the [state agency] to . . . enforce the terms of its own permit”).

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INITIAL DECISION

I. INTRODUCTION

Florida Power & Light Company (FPL) seeks a combined license (COL) for each of two new nuclear power reactors, Turkey Point Units 6 and 7, to be constructed at FPL’s facility near Homestead, Florida. This proceeding concerns a challenge (Contention 2.1) to FPL’s COL application by Mark Oncavage, Dan Kipnis, Southern Alliance for Clean Energy, and National Parks Conservation Association (hereinafter referred to as Joint Intervenors). Contention 2.1 asserts:

The Final Environmental Impact Statement (FEIS) is deficient in concluding that the environmental impacts from FPL’s proposed deep injection wells will be “small.” The chemical concentrations of ethylbenzene, heptachlor, tetrachloroethylene, and toluene in the wastewater injections, *see* FEIS Table 3-5, may adversely impact the groundwater should they migrate from the Boulder Zone to the Upper Floridan Aquifer.

Notice of Hearing, 82 Fed. Reg. 16,241, 16,242 (Apr. 3, 2017).

Having fully considered the record evidence, including the testimony presented at the evidentiary hearing on May 2-3, 2017, we conclude that the NRC Staff has demonstrated by a preponderance of the evidence that the environmental impacts from FPL’s proposed deep injection wells will be “small” because (1) the wastewater is unlikely to migrate to the Upper Floridan Aquifer; and (2) even if it did, the concentration of each of the four contaminants would be below the applicable United States Environmental Protection Agency (EPA) primary drinking water standard and, accordingly, would pose no known health risk.

II. FACTUAL BACKGROUND

Joint Intervenors challenge the FEIS's analysis of the potential impacts of FPL's plan to inject wastewater from the mechanical draft cooling towers for proposed Units 6 and 7 into the Boulder Zone underlying the Turkey Point site. More specifically, they argue that four particular contaminants in the wastewater may harm the drinking water if they migrate from the Boulder Zone to the Upper Floridan Aquifer. To contextualize this challenge, we provide the following factual background concerning (1) the wastewater that FPL will use for the Turkey Point cooling towers, and the deep injection wells that FPL will use to dispose of that wastewater by injecting it into the Boulder Zone beneath the Turkey Point site; (2) the hydrogeology at the Turkey Point site; and (3) the four chemical contaminants in the wastewater at issue in this case, along with their corresponding drinking water standards.

A. The Proposed Cooling System at the Turkey Point Site and the Deep Injection Wells

The water FPL will use as makeup water in the cooling towers will be treated wastewater from the Miami-Dade Water and Sewer Department's South District Wastewater Treatment Plant (SDWTP), which is located about 9 miles north of the Turkey Point site.¹ This wastewater receives three levels of treatment before arriving at the Turkey Point site. First, prior to its arrival at the SDWTP, it receives pretreatment from industrial users to remove contaminants from the waste streams.² Second, when the wastewater reaches the SDWTP, it is treated as required by Florida regulations to remove total suspended solids and treat soluble organic matter. *See* Ex. NRC-002-R2 at 30-31; *see also* Fla. Admin. Code Ann. r. 62-600. Third, the wastewater is also treated at the SDWTP with high-level disinfectant in a two-step process that filters and then disinfects the wastewater to further reduce fecal coliform values (hereinafter referred to as high-level treatment). *See* Ex. NRC-002-R2 at 31; Fla. Admin. Code Ann. r. 62-600.440(6).

¹ *See* Ex. FPL-064, Joint List of Undisputed Facts at 4 (Mar. 1, 2017); Ex. FPL-001, Pre-filed Direct Testimony of Paul Jacobs at 3 (Mar. 1, 2017). FPL does not expect any significant disruption to the supply of treated wastewater it receives from the SDWTP; however, if the wastewater were insufficient for Turkey Point's cooling needs, it would be supplemented with saltwater supplied by radial collector wells installed below the Biscayne Bay. *See* Ex. FPL-001 at 3-4. Contention 2.1 does not challenge the environmental consequences of FPL's potential use of saltwater for cooling purposes and, accordingly, we need not consider it.

² *See* Ex. NRC-002-R2, NRC Staff Testimony of Ann L. Miracle, Daniel O. Barnhurst, Paul D. Thorne, and Alicia Williamson-Dickerson Concerning Contention 2.1 at 30 (Apr. 14, 2017).

The treated wastewater will then be transported through 9 miles of new pipeline running from the SDWTP to the Turkey Point site, where it will receive additional treatment at FPL's Reclaimed Wastewater Treatment Facility (FPL's Treatment Facility) before it is used in the cooling towers.³ FPL's Treatment Facility will use filters and clarifiers to reduce contaminants such as magnesium, iron, oil and grease, total suspended solids, nutrients, and silica. *See* Ex. NRC-008A at 3-9.

After the above treatment, the wastewater will be stored at the makeup water reservoir for Units 6 and 7 to be used as cooling tower makeup water. *See* Ex. FPL-001 at 6; Ex. FPL-064 at 4. The wastewater will be circulated a maximum of four times through the cooling towers, where it will reach temperatures in excess of 110° Fahrenheit. *See* Ex. NRC-002-R2 at 7-8, 34. Additional wastewater will be continually added to the cooling towers to replace water that leaves the system through evaporation and drift (i.e., water droplets that are blown out of the cooling towers). *See* Ex. FPL-001 at 6-7.

Wastewater that has completed cycling through the cooling towers will be designated as "blowdown" and stored in the blowdown sump. *See* Ex. FPL-064 at 4.⁴ FPL will use deep injection wells to dispose of this wastewater, injecting it underground to a depth of about 3000 feet into a region in the Lower Floridan Aquifer known as the Boulder Zone. *See id.*

FPL ultimately will construct thirteen deep injection wells at the Turkey Point site. *See* Ex. FPL-064 at 4; *see also* Tr. at 667.⁵ The construction and operation of these wells will be subject to Florida's Underground Injection Control (UIC) program, which (1) requires permits for the construction and operation of Class I injection wells of the type FPL plans to construct at Turkey Point; and (2) subjects permitted wells to detailed monitoring requirements. *See* Fla. Admin. Code Ann. r. 62-528.410 to 62-528.425.⁶

Before commencing construction of its Class I injection wells, FPL must obtain construction permits from the Florida Department of Environmental Protection (FDEP). The issuance of a construction permit is conditioned on an applicant's demonstration of reasonable assurance that the well, throughout its

³ *See* Ex. NRC-008A, Division of New Reactor Licensing, Office of New Reactors and U.S. Army Corps of Engineers, Regulatory Division, Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 & 7, NUREG-2176, Volume 1 at 3-9 (Oct. 2016).

⁴ As the wastewater cycles through the cooling towers, concentrations of minerals build up, reducing the wastewater's heat-removal efficiency and necessitating its transfer to the blowdown sump. *See* Ex. FPL-001 at 7.

⁵ Of the thirteen wells, only two will need to operate simultaneously for the disposal of wastewater from the SDWTP. *See* Tr. at 877-78.

⁶ Federal law delegates the enforcement and administration of UIC programs to the states. *See* Safe Drinking Water Act, 42 U.S.C. § 300h-1.

construction and operation, will comply with Florida's UIC permitting program. *See Fla. Admin. Code Ann. r. 62-528.450(1)(b)*. As relevant to this proceeding, the UIC permitting program requires an applicant to demonstrate "that the hydrogeologic environment is suitable for waste injection . . . without modifying the ambient water quality of other aquifers overlying the injection zone." *Id.* r. 62-528.405(1)(a). An injection well applicant must therefore show that (1) there is at least one confining zone above the injection zone to prevent fluid migration into an underground source of drinking water (USDW);⁷ and (2) the proposed injection zone is capable of adequately receiving the injected fluid.⁸ *See id.* r. 62-428.405(2)-(3). In areas where there is limited understanding of the geologic confinement, or where existing information indicates that confinement may be poor or lacking, Florida's UIC permitting program requires the applicant to first construct an exploratory well. *See id.* r. 62-528.450(1)(b).

An operation permit must also be obtained from FDEP for a Class I injection well. *See Fla. Admin. Code Ann. r. 62-528.450(3)(e)-(f)*. Information acquired from the well during the construction process and operational testing period informs FDEP's decision as to whether to issue the operation permit. *See id.* r. 62-528.430(1)-(2), 62-528.455(2).

A permitted Class I injection well must also adhere to comprehensive monitoring requirements to ensure that the USDW is protected. For example, permittees must address their plans to construct monitor wells capable of monitoring (1) "[t]he absence of fluid movement adjacent to the well bore," and (2) "[t]he long-term effectiveness of the confining zone." Fla. Admin. Code Ann. r. 62-528.425(1)(g)1. They must also install devices on the injection wells to monitor flow rate and injection pressure. *See id.* r. 62-528.425(1)(a)-(b).

B. The Hydrogeology at the Turkey Point Site

As stated above, Florida's UIC permitting program seeks to ensure the effectiveness of the hydrogeologic confining zone to prevent upward migration of the injected fluid into any USDW. *See Fla. Admin. Code Ann. r. 62-528.425(1)(g)*. To that end, FPL constructed an exploratory well (EW-1) to obtain data to

⁷ Pursuant to EPA regulations, an aquifer qualifies as a USDW if the aquifer or a portion of the aquifer has total dissolved solids in the groundwater of less than 10,000 milligrams per liter (mg/L), and if it contains a sufficient quantity of groundwater to supply a public water system. *See* 40 C.F.R. § 144.3.

⁸ Joint Intervenor's do not challenge the capability of the Boulder Zone to receive wastewater at the Turkey Point site.

confirm the existence of a confining zone at the Turkey Point site. See Ex. NRC-008A at 3-13.⁹

The figure below shows the general hydrogeology of the Turkey Point site based, *inter alia*, on data obtained from EW-1:

HYDROGEOLOGIC UNIT	DEPTH AT TOP OF LAYER (feet)
Biscayne Aquifer	0-3
Intermediate Confining Unit	140
Upper Floridan Aquifer (USDW)	1,010
Middle Floridan Confining Unit	1,450
Primary Confining Layer	1,930
Lower Floridan Aquifer	2,915
Boulder Zone	3,030

⁹ Pursuant to Florida regulations, FPL will be required to obtain similar data for each of the injection wells it plans to construct at the Turkey Point site. See Fla. Admin. Code Ann. r. 62-528.405(2); Tr. at 702-03.

See Ex. NRC-008A at 2-48, fig. 2-19. As shown in this figure, two major aquifer systems exist beneath the Turkey Point site: (1) the surficial aquifer system, known as the Biscayne Aquifer; and (2) the Floridan aquifer system, which lies at the base of the Intermediate Confining Unit that separates the two aquifer systems.¹⁰

The Floridan aquifer system is comprised of three major units that, from shallowest to deepest, are (1) the Upper Floridan Aquifer; (2) the Middle Floridan Confining Unit; and (3) the Lower Floridan Aquifer. See Ex. NRC-008A at 2-53. Within the Lower Floridan Aquifer is the Boulder Zone, which is the zone targeted for deep-well injection of the wastewater from proposed Units 6 and 7. See *id.* at 2-54.

The Upper Floridan Aquifer at the Turkey Point site extends from 1010 to 1450 feet below ground surface, and it is designated as a USDW. See Ex. NRC-008A at 2-48.¹¹ It consists primarily of permeable limestone, dolomitic limestone, and dolomite. See *id.* The groundwater in the Upper Floridan Aquifer naturally flows in a general eastward direction. See *id.* at 2-55.

The Middle Floridan Confining Unit, or Middle Confining Unit, extends from 1450 to 2915 feet below ground surface and consists primarily of fine-grained limestone, dolomitic limestone, and dolomite. See Ex. NRC-008A at 2-54 to 2-55; Ex. FPL-002, Pre-filed Direct Testimony of David McNabb at 9 (Feb. 27, 2017). The lower portion of the Middle Confining Unit, between 1930 and 2915 feet below ground surface, is considered the primary confining layer for the injected wastewater at the Turkey Point site. See Ex. NRC-008A at 2-54 to 2-55.

The Lower Floridan Aquifer at the Turkey Point site begins at the base of the Middle Confining Unit, or 2915 feet below ground surface, and the Boulder Zone begins at 3030 feet below ground surface. See Ex. NRC-008A at 2-48. The Boulder Zone is comprised primarily of fractured dolostone, and it is highly permeable, probably due to horizontal caverns at multiple elevations connected by large vertical tubes within the zone. See *id.* at 2-54. The water in the Boulder Zone is very saline (similar to seawater). See *id.* The natural groundwater flow within the Boulder Zone around the Turkey Point site area is generally in a westward direction, *see id.*, moving slowly at a rate of less than 60 feet per year, or 1.1 miles per century. See Ex. FPL-003, Pre-filed Direct Testimony of Robert G. Maliva at 24 (Mar. 1, 2017).¹²

¹⁰The Floridan aquifer system has an area of approximately 100,000 square miles underlying all of Florida and parts of Alabama, Georgia, and South Carolina. See Ex. NRC-002-R2 at 40.

¹¹Although the Upper Floridan Aquifer at the Turkey Point site is designated as a USDW, the water is too saline to use as drinking water without treatment. See Ex. NRC-008A at 2-54.

¹²When wastewater is injected under high pressure into the Boulder Zone, it will be forced
(Continued)

C. The Four Contaminants at Issue in the Wastewater

Contention 2.1 alleges that four contaminants in the injected wastewater — heptachlor, ethylbenzene, toluene, and tetrachloroethylene¹³ — will adversely impact the USDW in the Upper Floridan Aquifer should they migrate there from the Boulder Zone.¹⁴

Heptachlor is a chlorinated insecticide typically used for fire ant control. *See* Ex. FPL-004, Pre-filed Direct Testimony of Christopher M. Teaf at 7 (Feb. 27, 2017). The sale, distribution, and use of heptachlor was prohibited by EPA in 1988, save for the specific application of fire ant control in underground power transformers. *See id.* In water, heptachlor binds readily with sediments. *See* Ex. NRC-002-R2 at 18. It degrades primarily through chemical hydrolysis (i.e., the breakdown of chemicals when exposed to water, *see* Tr. at 860) and secondarily, though at a significantly slower pace, through volatilization (i.e., a process by which chemicals in water are transferred from an aqueous state to a gaseous state, *see* Tr. at 858) and photo degradation (i.e., the breakdown of chemicals when exposed to sunlight, *see* Tr. at 860). *See* Ex. NRC-002-R2 at 34-35; Ex. NRC-033, EPA, Office of Water, National Primary Drinking Water Regulations, Containment Specific Fact Sheets, Synthetic Organic Chemicals — Technical Version at 36-37 (Oct. 1995).

Toluene, ethylbenzene, and tetrachloroethylene are highly volatile chemicals often found in facilities such as refineries and dry cleaners. *See* Ex. NRC-002-R2 at 19-21; Tr. at 858. Toluene occurs naturally in crude oil and is often used as a solvent for paint products. *See* Ex. FPL-004 at 10. Ethylbenzene also naturally occurs in petroleum and is commonly used as a solvent for pesticides and paint products. *See id.* at 9. Tetrachloroethylene is used as a solvent for dry cleaning and textile processing, and is also used as a degreasing agent. *See id.* at 11.

Table 3-5 in the FEIS lists the expected concentrations of these four contaminants immediately prior to FPL's injection of its wastewater into the Boulder

out in all directions. *See* Ex. NRC-008A at 5-22. Initially, the injected wastewater will be buoyant, because it will have a lower density and a higher temperature than the native water in the Boulder Zone. *See id.* As a result of its buoyancy, the flow of the wastewater may temporarily be influenced by the configuration of the confining layer above the Boulder Zone that dips to the southwest, resulting in a northeast flow. *See id.* at 5-28. But as "mixing, cooling and dilution occur," *id.*, buoyancy of the wastewater will decrease, and it will be subjected to the slow westward movement of the native water in the Boulder Zone. *See id.*

¹³ In the parties' exhibits, tetrachloroethylene is sometimes referred to as tetrachloroethene. *See, e.g.,* Ex. NRC-038, EPA, Method 624: Purgeables at 2 (1984). We refer to it throughout this decision as tetrachloroethylene.

¹⁴ These four contaminants are in the wastewater prior to its arrival at the Turkey Point site from the SDWTP. *See* Ex. NRC-008A at 3-37.

Zone as follows: (1) heptachlor — 0.000023 mg/L; (2) ethylbenzene — below the method detection limit; (3) toluene — 0.00174 mg/L; and (4) tetrachloroethylene — 0.00359 mg/L. *See* Ex. NRC-008A at 3-39, tbl. 3-5. The parties have stipulated that these values are “conservative and reliable.” Ex. FPL-064 at 5.

Pursuant to the Safe Drinking Water Act, 42 U.S.C. §§ 300f *et seq.*, EPA has developed Maximum Contaminant Levels (MCLs) for drinking water, which represent chemical concentrations that EPA has determined will not be harmful to public health, even if injected directly into drinking water. *See* 40 C.F.R. § 141.2. The pre-injection concentration listed in FEIS Table 3-5 for each of the four contaminants at issue in this case is below its EPA MCL.¹⁵

EPA also has promulgated aspirational goals for drinking water called Maximum Contaminant Level Goals (MCLGs), which are “the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety.” 40 C.F.R. § 141.2. The EPA MCLGs for ethylbenzene (0.7 mg/L) and toluene (1.0 mg/L) are the same as the EPA MCLs for those contaminants. *See* Tr. at 805-07. Hence, the pre-injection concentrations in the wastewater of ethylbenzene (below the method detection limit) and toluene (0.00174 mg/L) are well below EPA’s aspirational drinking water goals. *See id.*

For potential carcinogens, including heptachlor and tetrachloroethylene, EPA set the MCLGs at zero, recognizing that (1) the MCLG represents a non-enforceable public health goal; (2) it is not technically possible to detect whether a true zero concentration is attained; and (3) treatment systems may not be able to effectively remove chemicals in their entirety from public water supplies. *See* Ex. FPL-062, Pre-filed Rebuttal Testimony of Christopher M. Teaf at 4 (Mar. 23, 2017). Thus, although the pre-injection concentrations in the wastewater of heptachlor (0.000023 mg/L) and tetrachloroethylene (0.00359 mg/L) are below EPA’s primary drinking water standards, they exceed EPA’s aspirational drinking water goal of zero.

¹⁵The EPA MCLs for the four contaminants are (1) heptachlor — 0.0004 mg/L; (2) ethylbenzene — 0.7 mg/L; (3) toluene — 1.0 mg/L; and (4) tetrachloroethylene — 0.005 mg/L. *See* Ex. FPL-064 at 5.

Florida has established State MCLs for drinking water. The Florida MCLs for heptachlor, ethylbenzene, and toluene are the same as the EPA MCLs. *See* Fla. Admin. Code Ann. r. 62-550.828, tbls. 4-5. Florida’s MCL for tetrachloroethylene is 0.003 mg/L, *see id.* tbl. 4, which is lower than the EPA MCL of 0.005 mg/L, and is slightly lower than the concentration for tetrachloroethylene listed in FEIS Table 3-5 of 0.00359 mg/L. However, in considering the potential environmental impacts of contaminants from deep injection wells, Florida does not view its MCLs as inflexibly rigid standards. *See* Tr. at 819-20.

III. PROCEDURAL HISTORY

In June 2009, FPL submitted its COL application for Turkey Point Units 6 and 7 to the NRC Staff. The application included an Environmental Report (ER), which is FPL's assessment of the environmental impacts of the construction and operation of the proposed units. The ER concluded that the environmental impacts from FPL's proposed groundwater injections will be "small." *See* Ex. NRC-030, Turkey Point Units 6 & 7, COL Application, Part 3 — Environmental Report, ch. 5 at 5.2-10 to 5.2-13, 5.2-25 (June 2009).

In June 2010, the NRC Staff published a notice of hearing and opportunity to petition to intervene.¹⁶ The notice of hearing prompted the filing of several hearing requests and, as relevant here, this Board (1) granted Joint Intervenors' hearing request and admitted Contention 2.1;¹⁷ and (2) granted the Village of Pinecrest's request to participate as an interested local governmental body.¹⁸ *See* LBP-11-6, 73 NRC 149, 165, 251-52 (2011).

In February 2015, the NRC Staff issued its draft environmental impact statement (DEIS) that, like the ER, concluded that the environmental impacts from FPL's proposed groundwater injections will be "small."¹⁹ Thereafter, this Board (1) granted the City of Miami's request to participate as an interested local governmental body, *see* LBP-15-19, 81 NRC 815, 828 (2015); and (2) granted in part FPL's motion for summary disposition of Contention 2.1. *See* LBP-16-3, 83 NRC at 185-86.

In October 2016, the NRC Staff issued its FEIS for Turkey Point Units 6

¹⁶ *See* [FPL COL] Application for the Turkey Point Units 6 & 7, Notice of Hearing, Opportunity to Petition for Leave to Intervene and Associated Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation, 75 Fed. Reg. 34,777 (June 18, 2010).

¹⁷ Contention 2.1 has been amended and reformulated since its initial admission. *See, e.g.*, LBP-16-3, 83 NRC 169, 186 (2016); Licensing Board Memorandum and Order (Granting in Part and Denying in Part Motion for Summary Disposition of Amended Contention 2.1) at 10 (Aug. 30, 2012) (unpublished); LBP-12-9, 75 NRC 615, 629 (2012).

¹⁸ Pursuant to NRC regulations, an entity that is admitted to a proceeding as an interested local governmental body shall be given the opportunity to "introduce evidence, interrogate witnesses where cross examination by the parties is permitted, advise the Commission without requiring the representative to take a position with respect to the issue, file proposed findings in those proceedings where findings are permitted, and petition for review by the Commission." 10 C.F.R. § 2.315(c).

¹⁹ *See* Ex. NRC-007A, NUREG-2176, Vol. 1, Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 and 7 (Draft Report for Comment) at 5-29 to 5-30 (Feb. 2015).

and 7.²⁰ Expanding upon the analysis in the DEIS,²¹ the FEIS concludes that the environmental impacts from FPL's proposed groundwater injections will be "small" because (1) the upward migration of wastewater into the USDW is unlikely, *see* Ex. NRC-008A at 2-56 to 2-57, 5-21 to 5-29, 5-39 to 5-42, App. G at G-48 to G-52; and (2) even if the injected wastewater reaches the USDW in the Upper Floridan Aquifer, the impact on the groundwater will be small because the concentrations of the challenged contaminants are below their respective EPA MCLs. *See id.* at 3-37 to 3-39, 5-20 to 5-21.

On May 2-3, 2017, this Board held an evidentiary hearing in Homestead, Florida. At the outset of the hearing, we admitted the parties' prefiled exhibits into evidence, including the prefiled written direct and rebuttal testimony from their witnesses. *See* Tr. at 602-05.

At the hearing, Joint Intervenors presented oral testimony from a single witness, Mark A. Quarles, who has a B.S. in Environmental Engineering Technology and an M.B.A., is the Principal/Owner of Global Environmental, L.L.C., is licensed in Tennessee as a Professional Geologist, and has experience in the field of investigating accidental releases of environmental pollutants and evaluating the risks associated with such releases. *See* Ex. INT-001, Curriculum Vitae of Mark A. Quarles at 1 (undated); Ex. INT-002-R, Affidavit of Mark A. Quarles at 1 (Jan. 23, 2012).

FPL presented oral testimony from the following four witnesses: (1) Paul Jacobs, who has a B.S. in Nuclear Engineering, is the Supervising Engineer for the Turkey Point Units 6 and 7 project, and is licensed in California as a Professional Engineer, *see* Ex. FPL-001 at 1-2; (2) David McNabb, who has an M.S. in Geology, is the President of McNabb Hydrogeologic Consulting, Inc., is licensed in Florida as a Professional Geologist, and who provided design, permitting, and construction oversight services for EW-1 at Turkey Point, *see* Ex. FPL-002 at 1-2, 28; (3) Dr. Robert Maliva, who has a Ph.D. in Geology, is a Principal Hydrogeologist at WSP | Parsons Brinkerhoff, and is licensed in Florida and Texas as a Professional Geologist, *see* Ex. FPL-003 at 38; and (4) Dr. Christopher Teaf, who has a Ph.D. in Toxicology, is Director of Toxicology for Hazardous Substance & Waste Management Research, Inc., and has served

²⁰The NRC Staff issued a supplement to the FEIS in December 2016. *See* Combined License Application for Turkey Point Nuclear Plant, Units 6 and 7, 81 Fed. Reg. 90,875 (Dec. 15, 2016).

²¹The NRC Staff added a review of studies analyzing past instances of upwelling at the SDWTP, *see, e.g.*, Ex. NRC-008A at 5-23 to 5-26, and assessed FPL's modeling of projected horizontal and vertical migration of the injected wastewater. *See id.* at 5-26 to 5-29, App. G at G-48 to G-52. The NRC Staff also amended Table 3-5 in the FEIS to include updated sampling data taken from the SDWTP in 2013 and 2014 after the plant implemented its high-level disinfection system, which shows that the four relevant contaminants are below method detection limits. *See id.* at 3-39 tbl. 3-5 nn.(a)-(b).

as Director of the Center for Biomedical & Toxicological Research at Florida State University. *See* Ex. FPL-004 at 1.

The NRC Staff presented oral testimony from the following three witnesses: (1) Dr. Ann Miracle, who has a Ph.D. in Molecular Immunology, and is a Senior Scientist in the Earth Systems Science Division at the Pacific Northwest National Laboratory, *see* Ex. NRC-003, Curriculum Vitae of Ann L. Miracle at 1 (undated); (2) Daniel Barnhurst, who has an M.S. in Geology, is a Hydrogeologist in the Office of New Reactors at the NRC, and is licensed in Tennessee as a Professional Geologist, *see* Ex. NRC-004, Curriculum Vitae of Daniel O. Barnhurst at 1 (undated); and (3) Paul Thorne, who has an M.S. in Hydrology/Hydrogeology, is a Senior Research Scientist in the Earth Systems Science Division at the Pacific Northwest National Laboratory, and whose technical specialties include testing and analysis of fluid flow in geologic formations, and modeling of aquifers and subsurface flow. *See* Ex. NRC-005, Curriculum Vitae of Paul D. Thorne at 1-2 (undated).

Consistent with NRC regulations governing Subpart L hearings, *see* 10 C.F.R. § 2.1207(b)(6), Board members asked the witnesses questions in those areas that, in the Board's judgment, required additional clarification. The Board was assisted in this endeavor by proposed written questions that the parties provided prior to, and during the course of, the hearing. *See* Tr. at 597-98, 879, 881.²²

On May 17, 2017, the parties submitted a joint motion for transcript corrections, and on May 31, 2017, this Board granted the motion and closed the record on Contention 2.1. *See* Licensing Board Order (Adopting Transcript Corrections) (May 31, 2017) (unpublished).²³

IV. LEGAL STANDARDS

A. National Environmental Policy Act Standards

The National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4370f, has two principal objectives. First, it ensures that an agency considers every

²² Pursuant to NRC regulations, the parties' proposed questions "must be kept by the [Board] in confidence until they are either propounded by the [Board], or until issuance of the initial decision on the issue being litigated. The [Board] shall then provide all proposed questions to the Commission's Secretary for inclusion in the official record of the proceeding." 10 C.F.R. § 2.1207(a)(3)(iii). In accordance with this regulation, this Board will provide all proposed questions to the Commission's Secretary for inclusion in the record following issuance of this decision.

²³ Although the record on Contention 2.1 is closed, the record for this proceeding remains open pending the resolution of an April 18, 2017 petition to intervene and proffer a new contention submitted by the City of Miami, the City of South Miami, and the Village of Pinecrest. *See* Petition for Leave to Intervene in a Hearing on [FPL's] [COL] for Turkey Point Unit 6 & 7 and File a New Contention (Apr. 18, 2017).

significant aspect of the environmental impact of a proposed action. *See Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983). Second, it ensures that the agency informs the public that it has, in fact, considered environmental concerns in its decisionmaking process. *See id.* To effect these cardinal goals, NEPA “directs that, to the fullest extent possible . . . all agencies of the Federal Government shall . . . include in every . . . major Federal action significantly affecting the quality of the human environment, a detailed statement by the responsible official on . . . the environmental impact of the proposed action.” 42 U.S.C. § 4332(C)(i). The issuance of a COL is a “major federal action.” *See Blue Ridge Env'tl. Def. League v. NRC*, 716 F.3d 183, 188 (D.C. Cir. 2013). The requirement to prepare an environmental impact statement “ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). In short, NEPA requires that an agency take a “hard look” at the environmental consequences of each planned action. *See Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 374 (1989).

NEPA does not, however, require the NRC Staff to analyze every conceivable aspect of a proposed project. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002). Rather, NEPA’s requisite “hard look” is subject to a “rule of reason.” *See, e.g., NRDC v. Morton*, 458 F.2d 827, 834 (D.C. Cir. 1972). This means that agencies need not consider risks that are “remote and speculative” or events that have a very low probability of occurring. *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 754-55 (3rd Cir. 1989). Additionally, NEPA “does not call for certainty or precision, but an *estimate* of anticipated (not unduly speculative) impacts.” *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005) (emphasis in original).

Moreover, “NEPA itself does not mandate particular results, but simply prescribes the necessary process.” *Robertson*, 490 U.S. at 350. Although NEPA establishes a national policy in favor of protecting the environment, it does not require the agency to select the most environmentally benign alternative. “NEPA merely prohibits uninformed — rather than unwise — agency action.” *Id.* at 351. “If the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs.” *Id.* at 350.

As part of its NEPA analysis, and consistent with the approach outlined in the Council for Environmental Quality’s regulations, *see* 40 C.F.R. § 1508.27, 10 C.F.R. § 51.14, the NRC Staff categorizes the potential environmental impacts on a scale from small to large:

SMALL — environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

MODERATE — environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE — environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

Ex. NRC-008A at 1-4 to 1-5.

B. Burden and Standard of Proof

In NRC licensing proceedings involving safety-related contentions, the license applicant bears the burden of proof. *See* 10 C.F.R. § 2.325; *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-283, 2 NRC 11, 17 (1975). In proceedings (like this one) that involve NEPA contentions, however, the NRC Staff bears that burden because it has the statutory obligation of complying with NEPA. *See, e.g., Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1049 (1983). To carry that burden, the NRC Staff must establish that its position is supported by a preponderance of the evidence. *See Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 302 n.22 (1994). A preponderance of the evidence “requires the trier of fact to believe that the existence of a fact is more probable than its nonexistence.” *Concrete Pipe & Prods. of California, Inc. v. Constr. Laborers Pension Tr. for S. California*, 508 U.S. 602, 622 (1993).

V. FINDINGS OF FACT

Joint Intervenors contend that the FEIS errs in concluding that the environmental impacts from FPL’s deep injection wells will be “small.” They argue that the wastewater from the Turkey Point facility that will be injected into the Boulder Zone is likely to migrate to the Upper Floridan Aquifer and adversely impact the USDW. We find that the NRC Staff has shown by a preponderance of the evidence that the FEIS is correct in concluding that the environmental impacts from the deep injection wells will be “small” because (1) the wastewater is unlikely to migrate to the Upper Floridan Aquifer, *see infra* Part V.A; and (2) even if the wastewater were to migrate to the Upper Floridan Aquifer, the four contaminants at issue in this case will not adversely impact the USDW, because the pre-injection concentration of each contaminant is below its EPA MCL, or primary drinking water standard. *See infra* Part V.B.

A. The FEIS Correctly Concludes That the Wastewater FPL Injects into the Boulder Zone Is Unlikely to Migrate to the Upper Floridan Aquifer

I. Data from the EW-1 Tests, Coupled with the Groundwater Modeling Performed by FPL and the NRC Staff, Support the FEIS's Conclusion That the Middle Confining Unit Will Prevent Wastewater from Migrating to the Upper Floridan Aquifer

Joint Intervenors challenge the FEIS's reliance on the EW-1 tests to support its conclusion that the Middle Confining Unit will prevent the migration of wastewater into the Upper Floridan Aquifer. First, Joint Intervenors argue that a proper interpretation of the EW-1 tests reveals that the Middle Confining Unit is not an effective confining layer. Second, they argue that, even assuming the FEIS properly interprets the EW-1 tests, a single exploratory well does not provide adequate information to reliably conclude that the Middle Confining Unit is an effective confining layer. We disagree with Joint Intervenors on both points.

a. FPL drilled a 3232-foot-deep exploratory well — EW-1 — to satisfy FDEP permitting requirements for a Class I injection well. *See* Ex. NRC-008A at 2-57. As discussed *supra* Part II.A, FDEP regulations governing Class I injection wells require an applicant to demonstrate the existence of a confining zone that will prevent fluid migration into the USDW. *See* Fla. Admin. Code Ann. r. 62-528.405(2)(a). To that end, FPL used test results from EW-1 to “provide sufficient data, such as geophysical logs, lithologic cores, physical core analysis, borehole video television surveys, water samples, and drill stem tests (also known as packer tests) to adequately demonstrate the confining characteristics of the [Middle Confining Unit].” Ex. FPL-002 at 4; *see also* Fla. Admin. Code Ann. r. 62-528.405(2)(c).

In order to gather sufficient data to demonstrate adequate confinement, FPL took drill cutting samples every 10 feet or less at EW-1, as well as water samples at 90-foot intervals. *See* Ex. NRC-056, Report on the Construction and Testing of Class V Exploratory Well EW-1 at the [FPL] Turkey Point Units 6 & 7, vol. 1 at 5-6 (Sept. 2012); Ex. FPL-002 at 5-6. FPL also collected ten 4-inch-diameter rock cores between the depths of 1721.5 and 2679 feet within the Middle Confining Unit. *See* Ex. NRC-056 at 12; Ex. FPL-002 at 6. FPL then used these samples to perform laboratory analyses, geophysical logging,²⁴ and

²⁴NRC Staff witnesses, Mr. Barnhurst and Mr. Thorne, explained that “[b]orehole geophysical logging uses a sensor traveling through a borehole to measure the physical subsurface properties of the surrounding rock.” Ex. NRC-002-R2 at 67.

packer testing to determine the hydraulic parameters of the rock layers. *See* Ex. NRC-008A at 2-57.

In July 2013, FDEP concluded that the data from the EW-1 tests demonstrated that the Middle Confining Unit is an effective barrier that will prevent injected wastewater from migrating to the Upper Floridan Aquifer, and so it issued a permit to FPL enabling it to convert EW-1 into an injection well. *See* Ex. FPL-002 at 4.

In the FEIS, the NRC Staff cites data from the EW-1 tests to show that (1) the primary confinement for the injected wastewater is the lower part of the Middle Confining Unit between 1930 and 2915 feet below ground surface and is composed of limestone, dolomitic limestone, and dolomite; and (2) this 985-foot-thick strata “likely provides a barrier to vertical groundwater flow.” *See* Ex. NRC-008A at 2-57 to 2-58.²⁵

Joint Intervenors’ witness, Mr. Quarles, argued that — contrary to the conclusions of the FEIS — the following test results from EW-1 indicate that the Middle Confining Unit will not provide an effective barrier to vertical groundwater flow: (1) low percent bedrock recoveries; (2) high percent porosity of bedrock; and (3) inconclusive packer testing of bedrock intervals. *See* Ex. INT-022, Pre-filed Initial Testimony of Mark A. Quarles Regarding Joint Intervenors’ Contention 2.1 at 6-7 (undated). We disagree.²⁶

First, contrary to Mr. Quarles’ assertion, we find that low percent bedrock recoveries are not necessarily indicative of faults or voids in the bedrock. Bedrock recovery refers to the percentage of rock core actually recovered versus the total amount of the interval that underwent coring. *See* Ex. FPL-002 at 12-13. Thus, if a 10-foot interval underwent coring and only 1 foot of the rock core was recovered, the core recovery would be 10%. *See id.* Within the primary confining layer of the Middle Confining Unit (between 1930 and 2915 feet below the

²⁵ As discussed *supra* Part II.B, the Middle Confining Unit begins at 1450 feet below ground surface and extends to 2915 feet below ground surface. *See* Ex. NRC-008A at 2-48.

²⁶ Mr. Quarles raised two additional arguments regarding test results from EW-1. Neither argument is substantial. First, he asserted that FPL improperly relied on drill cuttings to determine “the presence of voids, fractures, faults, hydraulic capacity, or the confining nature of the bedrock,” when such a determination based on drill cuttings “would be a qualitative, general evaluation” only. Ex. INT-022 at 10. However, as NRC Staff witnesses, Mr. Barnhurst and Mr. Thorne, testified, the drill cuttings were in fact used only to make “a qualitative, general evaluation” of the bedrock. Ex. NRC-072, NRC Staff Rebuttal Testimony of Ann L. Miracle, Daniel O. Barnhurst, and Paul D. Thorne Concerning Contention 2.1 at 12 (Mar. 23, 2017) (quoting Ex. INT-022 at 10). Mr. Quarles also criticized the allegedly inadequate number of core samples taken from the bedrock. *See* Ex. INT-022 at 10. We find, however, that FPL purposefully — and quite reasonably — selected the number and location of the core samples to target the Middle Confining Unit and thereby evaluate its capacity for confinement. *See* Ex. NRC-072 at 13.

ground surface), the percent bedrock recoveries from EW-1 ranged from 8% to 95.4%. *See* Ex. NRC-056 at 13, tbl. 3.

NRC Staff witnesses, Mr. Barnhurst and Mr. Thorne, and FPL witness, Mr. McNabb, testified that a variety of factors can negatively impact bedrock recovery percentages. *See* Ex. NRC-072 at 10; Ex. FPL-002 at 12-13. For example, a cored interval composed of soft rock — like the limestone and dolomite in the Middle Confining Unit, *see* Ex. NRC-008A at 2-58 — can result in low percent core recovery because the rock can get washed away during the coring process or can fall out of the core barrel when the barrel is pulled to the surface. *See* Ex. FPL-002 at 12-13. Soft rock, however, is also indicative of the confining nature of the Middle Confining Unit, because such rock typically has low permeability. *See id.* at 13. Moreover, and significantly, FPL witness, Mr. McNabb, testified that no “bit drop” occurred during the coring process. *Id.* A “bit-drop” is “a term used when a void is encountered during drilling or coring that indicates the drill bit or the core barrel freely fell through a void or cavity.” *Id.* The absence of any bit drop during the coring process of EW-1 is persuasive evidence of the absence of any such voids and is indicative of an adequate confining layer. *See id.*

We also reject Mr. Quarles’ assertion that the high percentage porosity of some core samples from the Middle Confining Unit indicates that the bedrock is permeable. As stated above, FPL collected ten core samples from EW-1 in the Middle Confining Unit between the depths of 1721.5 and 2679 feet below ground surface. *See* Ex. NRC-056 at 13, tbl. 3. From these ten cores, a total of sixteen samples underwent laboratory analysis for porosity, *see id.* at 18, and the porosity from those samples ranged from 27.4% to 43.4%. *See id.* at 19, tbl. 5. We credit the testimony of NRC witnesses, Mr. Barnhurst and Mr. Thorne, and FPL witness, Mr. McNabb, who explained that this range of porosity data does not, in this case, indicate permeability. *See* Ex. NRC-072 at 10-11; Ex. FPL-002 at 12-13. Although an individual rock sample can contain many pores, it will have low permeability if the pores are not all interconnected. *See* Ex. FPL-002 at 12. As Mr. Barnhurst and Mr. Thorne testified, “[t]he ability of porous media to transmit water is indicated by hydraulic conductivity” rather than high percent porosity. Ex. NRC-072 at 10. FPL’s laboratory testing of the sixteen core samples showed vertical hydraulic conductivity measurements ranging from a low of 1.1×10^{-6} centimeters per second (cm/s) to a high of 5.4×10^{-4} cm/s, thereby indicating that the cored intervals are confining in nature. *See* Ex. NRC-056 at 19, tbl. 5; Ex. FPL-002 at 13; Ex. NRC-072 at 11.

Finally, we reject Mr. Quarles’ assertion that the failure of eight packer tests performed in the Middle Confining Unit indicate that the bedrock is permeable. *See* Ex. INT-022 at 8-9. A packer test measures permeability of the bedrock by “isolating a section of a borehole by placing a plug at each end of the interval to be tested, and then injecting or removing fluid from the isolated borehole

section under controlled conditions and measuring both flow rates and pressure responses.” Ex. NRC-002-R2 at 67. These plugs or “packers” are run into the well bore and then inflated to seal the tested interval. *See* Ex. FPL-002 at 7. Although eight of fourteen packer tests FPL performed in the Middle Confining Unit failed,²⁷ *see* Ex. NRC-056 at 21, tbl. 6, that is not a definitive indicator of permeable bedrock, because packer tests can fail for reasons independent of a geologic strata’s permeability. For example, a packer test can fail because the inflatable packer fails to fully isolate the test interval thereby allowing water to flow through. *See* Ex. FPL-002 at 14. For EW-1, FPL witness, Mr. McNabb, explained that many of the failed packer tests in the Middle Confining Unit took place in a large-diameter borehole, which required FPL to place sleeves on the packers to increase their diameter. *See id.* He testified that “these sleeves decreased the ability of the inflatable packers to conform to the configuration of the borehole, preventing isolation of the test interval.” *Id.*

As further evidence that a failed packer test is not necessarily indicative of permeable bedrock, Mr. McNabb compared the results of packer tests #14 and #19 — both of which were performed in the Middle Confining Unit. *See* Ex. FPL-002 at 14; *see also* Ex. NRC-056 at 21, tbl. 6. Packer test #14 failed after attempting to isolate the interval from 2480 to 2502 feet. *See* Ex. NRC-056 at 21, tbl. 6. By contrast, packer test #19 succeeded, and it was performed at an interval just 2 feet shallower than packer test #14 (2478 to 2500 feet). *See id.* Voids or fractures in the bedrock could not have caused the failure of test #14 because such geologic conditions would have also caused the failure of test #19. *See* Ex. FPL-002 at 14; *see also* Ex. NRC-056 at 21, tbl. 6. Moreover, in addition to packer test #19, five other packer tests in the Middle Confining Unit were successful and demonstrated low permeability. *See* Ex. NRC-056 at 21, tbl. 6.

Importantly, FPL also performed groundwater model simulations based on the hydrogeological data from EW-1 to confirm that migration from the Boulder Zone to the Upper Floridan Aquifer is highly unlikely. *See* Ex. FPL-003 at 18-22.²⁸ These simulations, created by FPL witness Dr. Maliva, used conservative assumptions “to provide reasonable assurance that the proposed injection well will not cause adverse impacts.” *Id.* at 20. Dr. Maliva testified that “the results of all my simulations indicate that the top of the injected wastewater will be

²⁷ FPL performed a total of nineteen packer tests, fourteen of which were performed in the Middle Confining Unit. *See* Ex. NRC-056 at 21, tbl. 6.

²⁸ As explained by FPL witness, Dr. Maliva, the groundwater modeling used “a density-dependent, solute-transport code that was developed by the United States Geological Survey for the simulation of water flow and solute transport in aquifers with significant salinity (and thus density) differences . . . [and that] incorporates temperature effects on buoyancy.” Ex. FPL-003 at 18.

located at least over 1,000 feet below the base of the USDW at the Turkey Point site after a hundred years.” *Id.* at 22.

The NRC Staff performed an independent modeling analysis to determine the maximum extent that wastewater might migrate upward, and it concluded that any upward migration would be even less than FPL’s analysis indicated. *See* Ex. NRC-008A at 5-27. The NRC Staff’s analysis indicated that “the injectate would move less than 300 [feet] upward into the [Middle Confining Unit] over a 100 [year] period.”²⁹

In sum, hydrogeological data from the EW-1 tests, as well as sophisticated groundwater modeling based on those tests, refute Joint Intervenor’s assertion that significant upwelling of wastewater from the Boulder Zone is likely to occur at the Turkey Point site. We find that the NRC Staff demonstrated by a preponderance of the evidence that the EW-1 tests strongly support the FEIS’s conclusion that wastewater injected into the Boulder Zone is unlikely to migrate to the Upper Floridan Aquifer.

b. In addition to challenging the NRC Staff’s and FPL’s analysis of data from the EW-1 tests, Joint Intervenor criticized the adequacy of those data, claiming that data from one exploratory well were insufficient to establish confinement for a deep injection well. *See, e.g.,* Ex. INT-022 at 5-6. We disagree. Construction of more than one exploratory well is not required by FDEP regulations or by industry standards. *See* Ex. FPL-003 at 10; *see also* Ex. NRC-002-R2 at 43-44. Indeed, given the high cost of drilling such wells, and the fact that the “hydrogeology of the Floridan Aquifer System does not vary significantly over short distances, *i.e.*, within a few miles,” Ex. FPL-060, Pre-filed Rebuttal Testimony of David McNabb at 3 (Mar. 23, 2017), no applicant for a Class I injection well permit in Florida has ever been required to drill more than one exploratory well for an injection well. *See* Ex. FPL-002 at 11-12; Ex. FPL-003 at 10. Nothing in this record persuades us that FPL should be the first injection well applicant to be required to drill more than one exploratory well, nor does NEPA’s “rule of reason” impose such a requirement. *See Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315 (2010) (“[W]hile there ‘will always be more data that could be gathered,’ agencies ‘must have some discretion to draw the line and move forward with decisionmaking.’”) (quoting *Town of Winthrop v. FAA*, 535 F.3d 1, 11 (1st Cir. 2008)).

²⁹ Ex. NRC-008C, Division of New Reactor Licensing, Office of New Reactors and U.S. Army Corps of Engineers, Regulatory Division, Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 & 7, NUREG-2176, Volume 3, App. G at G-50 (Oct. 2016).

Using a slightly different tack, Joint Intervenors argued that, in addition to obtaining data from an exploratory well, FPL should be required to obtain data using seismic-reflection surveys³⁰ to determine the potential for rapid vertical flow of wastewater through geologic faults and karst collapse structures at the Turkey Point site. *See* Ex. INT-022 at 6; Tr. at 691-94. Their witness, Mr. Quarles, cited several studies conducted by the United States Geological Survey (USGS)³¹ that used seismic-reflection to assess subsurface geological systems in South Florida. *See* Ex. INT-022 at 11-13. He stated that the most recent of these studies, conducted in 2015 (2015 USGS Study), “confirmed the presence of subsurface geologic faults and karst collapse structures [near the Turkey Point site at the Miami-Dade South District and North District Wastewater Treatment Plants] that can transmit injected wastewater upwards into the Upper Floridan aquifer.” *Id.* at 11 (citing Ex. NRC-053). Joint Intervenors thus asserted that the NRC Staff did not comply with NEPA’s “hard look” requirement because it failed to use site-specific seismic-reflection surveys. Tr. at 610, 691-94. We disagree.

At the outset, it is important to note that the FEIS actually examines the USGS studies cited by Mr. Quarles. *See* Ex. NRC-008A at 5-25. Acknowledging that no seismic-reflection survey was conducted at the Turkey Point site, the FEIS observes that the 2015 USGS Study suggests that evidence of karst collapse can be gathered through other methods, including borehole logs, which FPL performed at EW-1. *See id.* Additionally, the FEIS assesses the results of the USGS seismic-reflection surveys taken near the Turkey Point site, coupled with data collected from the EW-1 borehole logs, and concludes that the likelihood of vertical flow through faults in the Middle Confining Unit at the Turkey Point site is small. *See id.* Moreover, NRC Staff witnesses, Mr. Thorne and Mr. Barnhurst, testified that, to the extent the seismic-reflection surveys that were

³⁰ “Seismic-reflection surveys involve producing a shockwave at the surface and recording the return time and magnitude of reflected sound waves at an array of geophone receivers at other locations on the surface. These data are processed to remove extraneous noise and convert the time it takes for reflections to reach the geophones into depths of subsurface formations. The data are then interpreted to create a seismic-based visualization of the subsurface.” Ex. NRC-072 at 13 (internal quotation marks omitted).

³¹ These USGS studies are (1) Ex. NRC-050, Kevin J. Cunningham, et al., Near-Surface, Marine Seismic-Reflection Data Define Potential Hydrogeologic Confinement Bypass in the Carbonate Floridan Aquifer System, Southeastern Florida (2012); (2) Ex. NRC-051, Kevin J. Cunningham, Integrating Seismic-Reflection and Sequence-Stratigraphic Methods to Characterize the Hydrogeology of the Floridan Aquifer System in Southeast Florida (2013); (3) Ex. NRC-052, Kevin J. Cunningham, Integration of Seismic-Reflection and Well Data to Assess the Potential Impact of Stratigraphic and Structural Features on Sustainable Water Supply from the Floridan Aquifer System, Broward County, Florida (2014); and (4) Ex. NRC-053, Kevin J. Cunningham, Seismic-Sequence Stratigraphy and Geologic Structure of the Floridan Aquifer System Near “Boulder Zone” Deep Wells in Miami-Dade County, Florida (2015).

taken at the SDWTP near the Turkey Point site show faults, those features are either absent or confined to the Lower Floridan Aquifer in the areas closest to the Turkey Point site. *See* Ex. NRC-072 at 17.

Mr. Thorne and Mr. Barnhurst also cited instances where seismic-reflection surveys failed to “reveal the existence of a tectonic fault or karst collapse structure.” Ex. NRC-072 at 18. Moreover, Mr. Thorne and Mr. Barnhurst, along with FPL witness, Dr. Maliva, testified that although such a survey can identify a fault or karst collapse structure, it will not indicate whether such a feature is hydraulically conductive. *See id.*; *see also* Ex. FPL-003 at 34. Dr. Maliva testified that “[s]ome faults are actually impermeable and act to seal off aquifers and hydrocarbon reservoirs.” Ex. FPL-061, Pre-filed Rebuttal Testimony of Robert G. Maliva at 8 (Mar. 23, 2017). Finally, such surveys have never been a permitting requirement for a Class I injection well. *See id.*

We find that FPL acted reasonably — and consistently with FDEP regulations and industry standards — in not conducting a seismic-reflection survey at Turkey Point. Such a survey is not required to satisfy NEPA, especially given that (1) it might fail to reveal a fault or fracture; and (2) its results provide no definitive information on the hydraulic conductivity of any identified fault or fracture. “NEPA ‘should be construed in the light of reason if it is not to demand’ virtually infinite study and resources.” *Pilgrim*, CLI-10-11, 71 NRC at 315 (footnote omitted) (quoting *NRDC v. Hodel*, 865 F.2d 288, 294 (D.C. Cir. 1988)). “NEPA allows agencies ‘to select their methodology as long as that methodology is reasonable.’” *Id.* at 316 (quoting *Town of Winthrop*, 535 F.3d at 13). In our judgment, the FEIS’s conclusion that injected wastewater at the Turkey Point site is unlikely to migrate to the Upper Floridan Aquifer is based on reasonable analytic methodology and adequate evidence, and therefore satisfies NEPA.

2. The NRC Staff’s Review of Regional Hydrogeological Studies Supports the FEIS’s Conclusion That the Middle Confining Unit Is a Competent Confining Layer

In preparing the FEIS, the NRC Staff reviewed numerous regional studies that examined hydrogeological conditions of areas in the vicinity of the Turkey Point site. The NRC Staff determined these studies generally support the conclusions that (1) wastewater is not likely to migrate upward slowly through the unfractured matrix of the Middle Confining Unit; and (2) wastewater is not likely to migrate upward rapidly through a fault or fracture. In the NRC Staff’s view, these studies also support a conclusion that past instances of rapid upward migration of wastewater at deep injection wells near the Turkey Point site were likely caused by improper well construction, not by faults or fractures in the Middle Confining Unit. Joint Intervenors challenge the above conclusions.

We reject their challenges, concluding that the FEIS adequately considers the studies and reasonably determines that upward migration of wastewater through the Middle Confining Unit is unlikely.

a. The NRC Staff reviewed regional hydrogeological studies to assess the likelihood of wastewater reaching the Upper Floridan Aquifer by migrating slowly across a broad area through the unfractured matrix of the Middle Confining Unit. *See* Ex. NRC-008A at 5-23. The NRC Staff determined these studies “generally conclude that the [Middle Confining Unit] matrix provides adequate confinement.” *Id.*³²

Joint Intervenor’s witness, Mr. Quarles, contended that the NRC Staff’s reliance on these studies was misplaced, arguing, for example, that the 2001 study by R.C. Starr et al. (Starr Study) “contradicts” the FEIS’s conclusion, Ex. INT-022 at 14, because it states that “the confining layer above the Boulder Zone may in fact be competent, [but] these data sets are not adequate to draw this conclusion.” Ex. NRC-044 at 39.

Contrary to Mr. Quarles’ assertion, the Starr Study’s concession about the inadequacy of its data sets does not contradict the FEIS. Importantly, the FEIS actually discusses this aspect of the Starr Study, *see* Ex. NRC-008A at 5-24, and it ultimately determines that the study supports a conclusion that wastewater will not reach the Upper Floridan Aquifer by migrating slowly across a broad area of the Middle Confining Unit. The FEIS explains:

Rather than indicating a lack of confinement by the [Middle Confining Unit], the [Starr Study] concludes that the Middle Confining Unit and/or upper portion of the Lower Floridan Aquifer is a better confining unit than indicated by the data that was provided for review. The [Starr Study] concluded that overall the spatial distribution of contaminants [from upwelling of wastewater at the SDWTP] suggests that . . . contaminants are not migrating upward through the Middle Confining Unit across a broad area.

Id. (internal quotation marks omitted).

³²The studies reviewed by the NRC Staff included (1) a 2001 study by R.C. Starr et al. (Starr Study), *see* Ex. NRC-044, R.C. Starr et al., Evaluation of Confining Layer Integrity Beneath the South District Wastewater Treatment Plant, Miami-Dade Water and Sewer Department, Dade County, Florida (2001); (2) a 2007 study by Robert G. Maliva et al. (Maliva Study), *see* Ex. INT-014, Robert G. Maliva et al., Vertical Migration of Municipal Wastewater in Deep Injection Well Systems, South Florida, USA (2007); and (3) a 2002 study by Donald F. McNeill (2002 McNeill Study), *see* Ex. NRC-064, Donald F. McNeill, A Geological Review of the Confining Capability of a Regional Dolomite Unit: Application to the MDWAS South District WWTP (2002). *See* Ex. NRC-008A at 5-23 to 5-24.

Regarding Mr. Quarles' other criticisms of the NRC Staff's review of the regional studies, *see* Ex. INT-022 at 14-15, we find his arguments to be in the nature of unproductive "flyspecking." *Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 71 (2001) ("One can always flyspeck an FEIS to come up with more specifics and more areas of discussion that conceivably could have been included."). The FEIS provides an extensive discussion of the relevant studies, including their limitations, before concluding that upward migration to the Upper Floridan Aquifer across a broad area of the Middle Confining Unit is unlikely. This discussion is sufficient under NEPA. *See Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1324-25 (D.C. Cir. 2015) (Under NEPA's "hard look" standard, an agency's analysis is adequate if it "contains sufficient discussion of the relevant issues and opposing viewpoints,' and . . . the agency's decision is 'fully informed' and 'well-considered.'") (internal citations omitted).

b. In addition to reviewing regional studies to consider the potential for relatively slow migration of wastewater through the unfractured matrix of the Middle Confining Unit, the FEIS also considers the potential for rapid migration through faults or fractures.³³ In particular, the FEIS focuses on the possible causes of prior instances of upwelling through the Middle Confining Unit that occurred in southeast Florida, including the SDWTP, which is about 9 miles north of the Turkey Point facility. *See* Ex. NRC-008A at 5-23.³⁴ After reviewing these studies, the FEIS ultimately concludes that the past instances of vertical migration in South Florida were not caused by faults or fractures in the Middle Confining Unit, but were likely caused by well construction problems. *See id.* at 5-23 to 5-26.³⁵

³³ The studies the FEIS reviews regarding past instances of rapid upwelling in South Florida include (1) the 2002 McNeill Study, *see* Ex. NRC-064; (2) a 2010 study by Alyssa M. Dausman et al. (2010 Dausman Study), *see* Ex. FPL-009, Alyssa M. Dausman et al., Hypothesis Testing of Buoyant Plume Migration Using a Highly Parameterized Variable-Density Groundwater Model at a Site in Florida, USA (2010); and (3) a 2010 study by Virginia Walsh & René M. Price (2010 Walsh and Price Study), *see* Ex. FPL-028, Virginia Walsh & René M. Price, Determination of Vertical and Horizontal Pathways of Injected Fresh Wastewater Into a Deep Saline Aquifer (Florida, USA) Using Natural Chemical Tracers (2010). *See* Ex. NRC-008A at 5-24 to 5-25.

As discussed *supra* Part V.A.1, the FEIS also examines USGS reports from 2012-2015, which utilized seismic-reflection data, to evaluate the likelihood of rapid migration of the wastewater to the USDW at the Turkey Point site through fractures and faults. *See* Ex. NRC-008A at 5-25.

³⁴ Of the more than 180 Class I injection wells constructed in Florida, seventeen have experienced migration out of an injection zone, and three of these sites were in southeast Florida, including the SDWTP. *See* Ex. NRC-008A at 5-23; Ex. FPL-003 at 3.

³⁵ As discussed *infra* Part V.A.3, the FEIS concludes that (1) modern well construction techniques
(Continued)

Joint Intervenors' witness, Mr. Quarles, opined that the FEIS errs in attributing past instances of vertical migration to well-related issues. According to Mr. Quarles, the studies cited by the FEIS indicate that faults and fractures in the Middle Confining Unit are the more likely cause of past upwelling and thus contradict the FEIS's conclusion that the upwelling was due to well construction problems. *See* Ex. INT-022 at 16-17. For example, Mr. Quarles relied on the 2015 USGS Study, which concluded, in relevant part, that:

The strike-slip fault and karst collapse structures span confining units of the Floridan aquifer system and could provide high permeability passageways for groundwater movement. If present at or near wastewater injection utilities, these features represent a plausible physical system for the upward migration of effluent injected into the Boulder Zone to overlying [EPA] designated [USDWs] in the upper part of the Floridan aquifer system.

Id. (quoting Ex. NRC-053 at 24). Mr. Quarles asserted that the above passage contradicts the FEIS's conclusion that the upwelling at the SDWTP was likely caused by a well construction problem. *See id.* at 16.

Mr. Quarles is incorrect. The above passage simply states that faults and karst collapse structures in the Floridan Aquifer System "*could*" provide passageways for upward migration of wastewater "*if*" they exist "*at or near*" a deep injection well. *See* Ex. NRC-053 at 24. This statement does not contradict the FEIS; rather, it is a truism that the FEIS repeatedly acknowledges. *See, e.g.,* Ex. NRC-008A at 5-22, 5-24, 5-25. But based on an in-depth review of the EW-1 tests, sophisticated groundwater modeling, and regional studies, including the 2015 USGS study that Mr. Quarles cites, the FEIS concludes that (1) significant vertical migration of wastewater out of the Boulder Zone due to fractures or faults in the Middle Confining Unit is not expected at the Turkey Point site; and (2) past instances of rapid vertical migration that occurred near the Turkey Point site were likely due to well-related issues. *See* Ex. NRC-008A at 5-21 to 5-26; *see also* Ex. NRC-002-R2 at 56-57. Mr. Quarles' mere disagreement with the FEIS does not render it deficient. NEPA's "hard look" standard requires an agency to discuss the relevant issues and opposing viewpoints to ensure that "the agency's decision is 'fully informed' and 'well-considered.'" *Myersville Citizens for a Rural Cmty.*, 783 F.3d at 1325. We find that the NRC Staff's analysis satisfied NEPA, and that its conclusions were reasonable and supported by the record.

utilized by FPL will prevent well-related leaks at the Turkey Point site; and (2) even if a leak were to occur, the injection well monitoring program mandated by the FDEP UIC program will detect and resolve a well-related leak before any significant release reaches the Upper Floridan Aquifer.

3. *The FEIS Reasonably Concludes That Well-Related Problems Are Not Likely to Cause Upward Migration of Wastewater, and That a Well-Related Leak Would Likely Be Detected and Resolved Prior to Any Significant Release to the Upper Floridan Aquifer*

In light of the NRC Staff's conclusion that well-related problems were the likely cause of past instances of rapid vertical migration of wastewater at some Class I injection wells, the NRC Staff considered whether such problems were likely to occur at the Turkey Point site. As part of its analysis, the NRC Staff considered the testing and monitoring requirements of the FDEP UIC program, which regulates the type of deep injection wells proposed for the Turkey Point site. *See* Ex. NRC-008A at 5-21. This analysis led the NRC Staff to conclude that (1) well problems that may have caused upward migration of wastewater at other injection well sites are not expected to occur at the Turkey Point site, *see id.* at 2-56, 5-40; and (2) if an injection well leak were to occur at the Turkey Point site, it would likely be detected and resolved before any significant release reached the Upper Floridan Aquifer. *See id.* at 5-40; *see also* Ex. NRC-008B, Division of New Reactor Licensing, Office of New Reactors and U.S. Army Corps of Engineers, Regulatory Division, Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 & 7, NUREG-2176, Volume 2 at 7-17 (Oct. 2016). We find that both conclusions are supported by adequate evidence.

a. First, the FEIS concludes that well construction problems that may have been responsible for past upwellings at other injection well sites are not expected to occur at the Turkey Point site. *See* Ex. NRC-008A at 2-56, 5-40. FPL witness, Mr. McNabb, explained that injection wells built over 25 years ago used the construction technique of drilling a pilot hole, performing testing on the pilot hole, and then reaming the pilot hole to a larger diameter for installing the injection well's steel casing. *See* Ex. FPL-002 at 15. This process could create a double borehole if, while reaming the pilot hole, the reaming drill did not directly follow the pilot hole for the injection well. This, in turn, would result in "a large diameter borehole that the casing was installed into and an open pilot hole through the confinement that can act as a direct conduit for injected fluid to move upward." *Id.* at 15-16; *see also* Ex. NRC-008A at 2-56. The modern approach that has been used for about the past 25 years — and the approach to be taken at the Turkey Point site — is to backplug the pilot hole with cement after pilot testing and before the drilling of the injection well, thereby preventing the possibility of a double borehole that can result in rapid vertical migration. *See* Ex. NRC-008A at 2-56. Mr. McNabb testified that injection well sites where vertical migration has occurred in the past were built "at least 25 years ago, when construction techniques were different." Ex. FPL-002 at 15.

“[S]ince we’ve changed our construction techniques [to include backplugging of the pilot hole],” declared Mr. McNabb, “we’re just not seeing the problems that we were having.” Tr. at 750.³⁶

Additionally, the integrity of FPL’s deep injection wells will be verified by the rigorous construction and well-testing requirements of FDEP’s UIC permitting process that, in turn, will minimize the possibility of leakage. *See* Ex. NRC-008A at 5-21, 5-26; Tr. at 734-43, 755-57, 759-66. As discussed in the FEIS, FPL’s injection wells will be constructed of multiple concentric steel casings, each with a wall thickness of $\frac{3}{8}$ or $\frac{1}{2}$ inch, and cemented into place. *See* Ex. NRC-008A at 3-10, 3-13. A fiberglass reinforced plastic injection liner, selected for its corrosion resistance, will be inside the smallest (24 inch) casing. The annular space between the smallest casing and the injection liner will be sealed at the base of the tubing and at the surface and filled with a corrosion inhibitor, protecting the inside of the casing from corrosion. Cement will be poured around the perimeter of the casings for the entire length of the well, creating a seal between the casings and the surrounding bedrock to (1) prevent the movement of fluids into the USDW; (2) maintain the quality of groundwater in aquifers above the injection zone; and (3) protect the outside of the casings from corrosion. *See* Ex. FPL-002 at 14-15; Tr. at 735-39, 753-54, 765-66. Moreover, and as will be discussed in greater detail *infra* Part V.A.3.b, in compliance with FDEP UIC requirements, the continuing integrity of each well will be confirmed by (1) groundwater monitoring; (2) continuous pressure monitoring; and (3) periodic mechanical integrity tests. *See* Ex. FPL-002 at 19.

Notably, when Joint Intervenor’s witness, Mr. Quarles, was asked whether he considered any FDEP requirement regarding the construction and testing of deep injection wells to be inadequate, he responded in the negative. *See* Tr. at 758. He nevertheless opined that well leakage might occur because sometimes “mistakes do happen.” *Id.* But Mr. Quarles’ highly speculative concern that some indeterminate construction-related mistake might impair the integrity of an injection well does not impugn the adequacy of the NRC Staff’s NEPA review regarding the effectiveness of the FDEP UIC permitting program. Moreover, in examining the FDEP requirements, it was reasonable for the NRC Staff to expect that the state regulatory authority charged with permitting the injection wells will adequately enforce its own regulations. The “well-recognized presumption of administrative regularity” that applies to the NRC Staff in the execution of its official duties, *Arkansas Power & Light Co.* (Arkansas Nuclear One Unit 2), ALAB-94, 6 AEC 25, 28 (1973), likewise applies to State regulatory officials. *See Southern California Edison Co.* (San Onofre Nuclear

³⁶ Joint Intervenor’s witness, Mr. Quarles, agreed that “backplugging [of the pilot hole] is a great idea that should be done.” Tr. at 730.

Generating Station, Units 2 and 3), ALAB-308, 3 NRC 20, 30 (1976) (rejecting intervenors' argument that an applicant's proposal did not conform to the terms of a state permit and stating that "[i]t is for the [state agency] to . . . enforce the terms of its own permit"). In sum, we find that the NRC Staff independently, and adequately, considered the FDEP UIC permitting requirements among other factors to reach its conclusion that significant upwelling of injected wastewater due to well leakage is not likely at the Turkey Point site. *See* Ex. NRC-008A at 5-26.

b. The FEIS concludes that even if a leak were to occur in an injection well, it would likely be detected and resolved pursuant to the monitoring requirements of the FDEP UIC program before any significant release reached the Upper Floridan Aquifer. *See* Ex. NRC-008A at 5-26, 5-40; *see also* Ex. NRC-008B at 7-17. As the FEIS explains, FPL ultimately will install six additional dual-zone monitor wells along with the additional twelve injection wells. *See* Ex. NRC-008A at 3-10, 3-25. Each dual-zone monitor well will be located 75 feet from an injection well, and each monitor well will sample groundwater at two different depths: (1) below the Upper Floridan Aquifer (in the Middle Confining Unit); and (2) above the base of the Upper Floridan Aquifer (in the Upper Floridan Aquifer). *See id.* at 3-25; Ex. NRC-002-R2 at 44. FPL witness, Mr. McNabb, testified that the placement of the monitor wells proximate to the injection wells, coupled with the fact that they monitor groundwater in two different zones or depths, will allow FPL to "detect upward fluid movement or leaks, before any drinking water is impacted." Ex. FPL-002 at 17.³⁷

Joint Intervenor's witness, Mr. Quarles, argued that the above-groundwater monitoring system is inadequate because the wastewater may migrate horizontally beyond the detection capacity of the dual-zone monitors before it migrates upwards. *See* Ex. INT-022 at 23. FPL's witness, Mr. McNabb, conceded that the scenario posited by Mr. Quarles was conceivable, but he declared that it was "highly unlikely" for two reasons. *Tr.* at 795. First, as discussed *supra* Parts V.A.1 and V.A.2, the FEIS correctly concludes that extensive horizontal migration coupled with vertical migration into the Upper Floridan Aquifer is unlikely. *See* Ex. NRC-008A at 5-26 to 5-28; *see also* Ex. FPL-003 at 24. Second, FDEP regulations mandate that dual-zone monitor wells be located near the injection wells, because the greatest potential for upward fluid migration occurs near the injection wells where (1) the greatest injection pressure occurs; and (2) the wastewater has its greatest buoyancy. *See Tr.* at 792-93; Ex. FPL-002 at 20. As Mr. McNabb testified, if the wastewater were to migrate horizontally for a mile

³⁷ Pursuant to FDEP regulations, water samples from the dual-zone monitor wells will be collected on a weekly basis during the first 6 months to 2 years of operation, and monthly thereafter. *See* Ex. FPL-002 at 17.

and beyond the detection capacity of a monitor well, the wastewater “would be very dilute by then [And] we’d have very, very little buoyant force” for vertical migration. Tr. at 795.³⁸ We credit Mr. McNabb’s testimony, finding that Mr. Quarles’ criticism of the location of the dual-zone monitor wells does not undermine the FEIS’s conclusion that leakage from an injection well would likely be detected and resolved pursuant to the monitoring requirements of the FDEP UIC program before any significant release reached the Upper Floridan Aquifer.

Our conclusion is buttressed by the fact that the monitoring program employed by FPL will not rely solely on dual-zone monitors to identify a leak in an injection well. Rather, in accordance with FDEP requirements, FPL will also continuously monitor the pressure of the sealed annular space between the final casing and the injection tubing. See Ex. FPL-002 at 18. This pressure monitoring system will immediately identify any leak in the well. See *id.* at 19. If FPL discovered that a well was leaking, it would report the event to FDEP and work with FDEP to resolve the problem.³⁹

FDEP regulations also require that each injection well undergo mechanical integrity testing at least every 5 years. See Ex. FPL-002 at 18. As its name suggests, mechanical integrity testing serves to confirm that the injection well does not leak and that it otherwise continues to comply with FDEP UIC requirements. The testing includes (1) a video survey of the injection tubing and injection zone; (2) a pressure test where the annular space between the final casing and the fiberglass reinforced plastic injection tubing is pressurized; and (3) performance of a high-resolution temperature log and radioactive tracer survey on the well. See *id.*; see also Tr. at 759-66.

In sum, we find that, contrary to Joint Intervenors’ argument, the FEIS reasonably concludes that even if a leak were to occur in an injection well, it would likely be detected and resolved pursuant to the monitoring requirements of the FDEP UIC program before any significant release reached the Upper Floridan Aquifer. See Ex. NRC-008A at 5-26, 5-40; see also NRC-008B at 7-17. That conclusion was based on a “hard look” at the relevant factors, and it is supported by ample evidence.

³⁸The natural groundwater flow within the Boulder Zone at the Turkey Point site is exceedingly slow, moving at a rate of less than 60 feet per year. See Ex. FPL-003 at 24. Accordingly, if any leakage occurred in or near the Boulder Zone, it would take nearly 100 years for the wastewater to migrate horizontally for a distance of 1 mile, see *id.*, at which point it would have “very little buoyan[cy]” as a result of dilution. Tr. at 795.

³⁹Potential remedies for a leaking well include (1) removing the well from service until the leak is repaired; and (2) ordering a well to be plugged or abandoned. See Ex. FPL-002 at 20.

B. The FEIS Correctly Concludes That Even if Wastewater Migrated to the Upper Floridan Aquifer, Its Environmental Impact Would Be “Small” Due to the Low Concentrations of the Four Contaminants at Issue in the Wastewater

The FEIS provides an alternative reason for its conclusion that the four contaminants at issue in the wastewater (i.e., heptachlor, toluene, ethylbenzene, and tetrachloroethylene) will only have a “small” impact on the environment; namely, “[b]ecause of the relatively low concentrations of contaminants[,] the impacts of upward migration, if it occurred, would be expected to be minor.” Ex. NRC-008A at 5-40. In support of the FEIS’s conclusion, witnesses from the NRC Staff and FPL testified that the concentration of each of the four contaminants is below its EPA MCL (or primary drinking water standard), so even if the wastewater were to migrate through the Middle Confining Unit to the USDW in the Upper Floridan Aquifer, its impact would be “small.” *See* Ex. NRC-002-R2 at 33-35; Ex. FPL-004 at 5-6. Joint Intervenors dispute the FEIS’s conclusion, arguing that the EPA MCLGs (which are set at zero for both heptachlor and tetrachloroethylene) “should have been used to determine whether the environmental impact of the [contaminants] would be ‘small.’” Ex. INT-022 at 17.⁴⁰

We disagree. As discussed below, based on the expert testimony of NRC Staff witness, Dr. Miracle, and FPL witness, Dr. Teaf, we conclude that the appropriate standards to apply here are the EPA MCLs, not the EPA MCLGs.

Three witnesses testified on the appropriate drinking water standard that should be applied in determining the potential risks posed by the four contaminants: (1) for the NRC Staff, Dr. Miracle, who has a doctorate in the field of molecular immunology, and who has broad experience in environmental toxicology, *see* Ex. NRC-003 at 1; Tr. at 804; (2) for FPL, Dr. Teaf, who has a doctorate in the field of toxicology, and who has broad experience in biomedical and toxicological research, *see* Ex. FPL-004 at 1; and (3) for Joint Intervenors, Mr. Quarles, who has a B.S. in Environmental Engineering Technology, is a licensed geologist, and who has broad experience in the field of investigating accidental releases of environmental pollutants and evaluating the risks associated with such releases. *See* Ex. INT-001 at 1; Tr. at 804-05.

⁴⁰ As stated *supra* Part II.C, the EPA MCLGs for ethylbenzene and toluene are the same as the EPA MCLs for those contaminants. Because the concentrations of those contaminants in the wastewater are well below their respective MCLs (and hence well below their MCLGs), their impact on the environment would be “small” even as measured by the standard advocated by Joint Intervenors. In this respect, Joint Intervenors’ witness, Mr. Quarles, did not dispute that the concentrations of ethylbenzene and toluene in the wastewater would pose “no known or anticipated adverse effect” to human health if injected directly into a drinking water source. *See* Tr. at 806-08.

Based on the education, experience, and written and oral testimony of Dr. Miracle and Dr. Teaf, we have no difficulty finding that their knowledge and expertise in the field of environmental toxicology far exceed that of Mr. Quarles. For this reason, we credit their testimony regarding the appropriate standard that should be applied in determining the potential risks posed by the four contaminants.

Dr. Miracle and Dr. Teaf both agreed that “qualified professionals in the field of toxicology would typically use MCLs and not the MCLGs to assess environmental impacts from [the four contaminants at issue in this case].” Tr. at 810-11; *see also* Ex. FPL-062 at 5-6. They further attested — as did Joint Intervenors’ witness, Mr. Quarles — that they were unaware of any injection well system in the United States that uses EPA MCLGs, as opposed to EPA MCLs, as the regulatory standard for assessing environmental impacts. *See* Tr. at 840. Dr. Teaf explained:

The [EPA] has developed [MCLs] for the four constituents at issue in this case (and numerous other substances) in drinking water. Those drinking water standards were developed under the Safe Drinking Water Act and the National Primary Drinking Water Regulations applicable to public water systems. Primary standards protect human health by limiting levels of contaminants in public drinking water. Concentrations of the four constituents equal to or less than MCL standards are considered safe for consumption in drinking water.

Ex. FPL-062 at 2 (internal citations omitted); *see also id.* at 3, 5; Tr. at 810-11. Significantly, the record evidence firmly supports a conclusion that a contaminant injected into drinking water at a concentration below its EPA MCL will not have an environmental impact greater than small. *See* Tr. at 843-44; *see also* Ex FPL-062 at 5 (Dr. Teaf testifies that the fact that the four contaminants “exist at concentrations below their respective [EPA MCLs], and thus would be permitted in any federally regulated drinking water supply, represents the functional definition of a ‘small’ impact.”).⁴¹

Based on our review of the record, and aided by the persuasive testimony of Dr. Miracle and Dr. Teaf, we conclude that the EPA MCL is the appropriate standard for assessing the environmental impact of a contaminant, and that if a contaminant’s concentration is below its EPA MCL, its environmental impact will be small. This conclusion permits us to construct the following syllogism,

⁴¹ *Accord, e.g.*, Ex. FPL-004 at 13 (Dr. Teaf testifies that a contaminant with a concentration less than its EPA MCL “would not pose a health risk to the public even if directly injected into the drinking water.”); Ex. NRC-002-R2 at 16 (Dr. Miracle testifies that a contaminant in drinking water with a concentration less than its EPA MCL “is protective of human health” and will have “no known health effects.”).

which demonstrates that the four contaminants at issue in this case will have a small environmental impact if they migrate to the Upper Floridan Aquifer: (1) a contaminant that is discharged into a USDW will have a small environmental impact if its concentration is below its EPA MCL; (2) the concentrations of heptachlor, toluene, ethylbenzene, and tetrachloroethylene in the wastewater are below their respective EPA MCLs;⁴² and accordingly (3) these four contaminants will have a small environmental impact on the USDW if the wastewater were to migrate to the Upper Floridan Aquifer.

Joint Intervenors' witness, Mr. Quarles, nevertheless argued that tetrachloroethylene poses an undue risk to the USDW because its concentration in FPL's injected wastewater — 0.00359 mg/L — exceeds its Florida-prescribed MCL, which is 0.003 mg/L. *See* Ex. INT-023, Pre-filed Rebuttal Testimony of Mark A. Quarles Regarding Joint Intervenors' Contention 2.1 at 14 (undated); *supra* note 15. We reject this argument for three reasons. First, as explained above, we find that the EPA MCL (which is 0.005 mg/L for tetrachloroethylene) is the appropriate standard for determining the environmental impact of tetrachloroethylene. Second, FPL witness, Dr. Teaf, convincingly testified that the “small” difference between the concentration of tetrachloroethylene in the wastewater and the Florida MCL “would have an insignificant impact on public health.” Ex. FPL-004 at 14. Third, as Dr. Teaf explained, Florida does not apply its MCLs myopically when considering permit applications for deep injection wells; rather, in determining the environmental impact of a contaminant, Florida takes into account “all kinds of considerations,” including “[f]ate in transport, injection concentration, injection volumes, well construction, [and] hydrogeology.” Tr. at 819-20.⁴³ And insofar as Florida granted FPL a permit to convert EW-1 from an exploratory well to an injection well, *see* Ex. FPL-002 at 4, it may reasonably be inferred that Florida — like the NRC Staff — concluded that the environmental impact of tetrachloroethylene will be small.⁴⁴

⁴² As stated *supra* Part II.C, the parties stipulated that the concentrations listed in FEIS Table 3-5 for the four contaminants at issue are “conservative and reliable.” Ex. FPL-064 at 5. The concentration of each is below its EPA MCL. *See supra* note 15 and accompanying text.

⁴³ Dr. Teaf provided a further description of the type of analysis Florida used in determining the potential environmental impact of tetrachloroethylene in this case:

I literally cannot imagine, based on my 35 years of experience, that the State of Florida would say that you can't inject water, which is 19 percent above the state drinking water standard, 3,000 feet down into the water zone under the assumption that it could magically make its way to a drinking water source at the surface, even understanding that the drinking water source is too saline to use as it is, and would have to undergo further treatment beyond that. Those are the kinds of safeguards [Florida] would be looking for.

Tr. at 820.

⁴⁴ Mr. Quarles also asserted that because heptachlor and tetrachloroethylene are possible human

(Continued)

In sum, this Board finds that a preponderance of the evidence supports the FEIS's conclusion that, even if the wastewater were to migrate to the Upper Floridan Aquifer, the environmental impact of the four contaminants on the USDW would be small. Our finding is fortified by the fact that, as the FEIS states, by the time FPL's injected wastewater reached the Upper Floridan Aquifer, the concentrations of the four contaminants would likely be substantially lower than the values in Table 3-5. *See* Ex. NRC-008A at 5-21, 5-39 to 5-41.⁴⁵ In this regard, we credit the testimony of NRC Staff witnesses, Mr. Barnhurst and Mr. Thorne, and FPL witness, Mr. Jacobs, that the concentrations of the four contaminants listed in Table 3-5 will be further reduced as a result of (1) dilution that may occur while the wastewater is stored in the makeup water reservoir; (2) volatilization of toluene, ethylbenzene, and tetrachloroethylene that will occur when the wastewater is cycled through the cooling towers; (3) chemical hydrolysis and photodegradation of heptachlor that will occur in the cooling towers; (4) dilution that may occur while the wastewater is stored in the blowdown sump; and (5) dilution that will occur when the wastewater is injected into the Boulder Zone. *See* Ex. NRC-002-R2 at 33-35; Tr. at 857-63; *see also* Ex. FPL-004 at 14-15; Ex. NRC-008A at 5-21, 5-40 to 5-41.⁴⁶

VI. CONCLUSIONS OF LAW

For the foregoing reasons, we conclude that the NRC Staff took the requisite "hard look" under NEPA in assessing the environmental consequences of injecting wastewater from proposed Units 6 and 7 into the Boulder Zone underlying the Turkey Point site. The FEIS correctly determines that the environmental

carcinogens, they ought not — in his opinion — be introduced into the environment at levels above their EPA MCLGs of zero. *See* Ex. INT-022 at 18. But Mr. Quarles' opinion fails to take into account that the EPA, in developing MCLs, considers a contaminant's potential carcinogenic effect in determining a value that is adequately protective of human health. *See* Tr. at 813-14, 839-40.

⁴⁵Based on fate transport models, the FEIS declares that the concentration of, for example, tetrachloroethylene would be reduced by 95% to 100% by the time it migrated to the USDW. *See* Ex. NRC-008A at 5-40 to 5-41. Pursuant to these models, the "final concentrations [of the contaminants in the wastewater] expected at the USDW . . . would also be so low as to be undetectable." *Id.* at 5-41.

⁴⁶Notably, the FEIS states that the high-level disinfectant wastewater treatment process that was recently installed at the SDWTP, *see* Ex. NRC-008A at 5-21; *see also supra* Part II.A, may also contribute to reducing the concentrations of the contaminants below the values reported in Table 3-5. *See* Ex. NRC-008A at 5-21; *id.* at 3-39, tbl. 3-5 n.(b). Moreover, according to the FEIS, EPA considers the high-level disinfectant treatment process to be "as effective as confinement of fluids in protecting USDWs from contaminants in wastewater," because "the quality of the wastewater has been treated to a level that is no longer a threat to USDWs." *Id.* at 5-20 to 5-21 (quoting Ex. NRC-035, EPA, Protecting Drinking Water Through Underground Injection Controls at 16 (2012)).

consequences of such wastewater injections will be “small,” because (1) the wastewater that FPL injects into the Boulder Zone is unlikely to migrate to the Upper Floridan Aquifer; and (2) even if the wastewater were to reach the Upper Floridan Aquifer, the concentration of each challenged contaminant is below its EPA MCL and, accordingly, its environmental impact would be no greater than small.

VII. ORDER

For the foregoing reasons, Joint Intervenors’ Contention 2.1 is resolved in favor of the NRC Staff. This Initial Decision will constitute the final action of the Commission on the contested matter 120 days after its issuance, unless (1) a party files a petition for Commission review within 25 days after service of this Initial Decision; or (2) the Commission directs otherwise. *See* 10 C.F.R. §§ 2.341(b), 2.1210(a), 2.1212. Within 25 days after service of a petition for Commission review, parties to the proceeding may file an answer supporting or opposing Commission review. *See id.* § 2.341(b)(3).⁴⁷ A party who seeks judicial review of this decision must first seek Commission review, unless otherwise authorized by law. *See id.* § 2.1212.

It is so ORDERED.

THE ATOMIC SAFETY AND LICENSING BOARD

E. Roy Hawkens, Chairman
ADMINISTRATIVE JUDGE

Dr. Michael F. Kennedy
ADMINISTRATIVE JUDGE

Dr. William C. Burnett
ADMINISTRATIVE JUDGE

Rockville, Maryland
July 10, 2017

⁴⁷ Any petition for Commission review, and any answer, shall conform to the requirements of 10 C.F.R. § 2.341(b)(2)-(3).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

E. Roy Hawkens, Chairman
Dr. Michael F. Kennedy
Dr. William C. Burnett

In the Matter of

Docket Nos. 52-040-COL
52-041-COL
(ASLBP No. 10-903-02-COL-BD01)

FLORIDA POWER & LIGHT
COMPANY
(Turkey Point Units 6 and 7)

July 31, 2017

This proceeding concerns a petition to intervene in an ongoing proceeding involving a combined license (COL) application filed by Florida Power & Light Company (FPL) for two AP1000 nuclear reactors, Turkey Point Units 6 and 7, to be located near Homestead, Florida. Petitioners allege that, in light of changed circumstances arising from Westinghouse Electric Company's (Westinghouse's) recent bankruptcy filing, FPL's COL application no longer demonstrates that FPL is financially qualified to cover the construction and fuel cycle costs for Units 6 and 7, as required by 10 C.F.R. § 50.33(f)(1). In this order, the Board concludes that, although Petitioners have standing to intervene and have proffered a timely contention, their contention fails to satisfy the admissibility standards in 10 C.F.R. § 2.309(f)(1).

NRC REGULATIONS: FINANCIAL QUALIFICATION

Section 50.33(f)(3) of 10 C.F.R. specifies that COL applicants must submit the financial qualification information described in section 50.33(f)(1), which

states in relevant part: “the applicant shall submit information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs. The applicant shall submit estimates of the total construction costs of the facility and related fuel cycle costs, and shall indicate the source(s) of funds to cover these costs.” 10 C.F.R. § 50.33(f)(1).

NRC REGULATIONS: FINANCIAL QUALIFICATION

Appendix C to 10 C.F.R. Part 50 provides guidance regarding how a COL applicant should establish its financial qualification. “In determining an applicant’s financial qualification,” states Appendix C, “the Commission will require the minimum amount of information necessary for that purpose.” 10 C.F.R. pt. 50, app. C. If the applicant is an “established organization[]” such as FPL, it need only provide (1) an estimate of construction costs; (2) the source of construction funds; and (3) its most recent annual financial statement. *See id.*

RULES OF PRACTICE: CONTENTIONS (SCOPE OF A REPLY)

Documents attached to a reply are subject to being struck if they improperly “attempt to backstop elemental deficiencies in [petitioners’] original petition to intervene.” *Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 262 (2008) (internal quotation marks omitted).

RULES OF PRACTICE: CONTENTIONS (SCOPE OF A REPLY)

“While a petitioner need not introduce at the contention phase every document on which it will rely in a hearing, if the contention as originally pled did not cite adequate documentary support, a petitioner cannot remediate the deficiency by introducing in the reply documents that were available to it during the time frame for initially filing contentions.” *Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 732 (2006).

RULES OF PRACTICE: CONTENTIONS (SCOPE OF A REPLY)

Commission case law holds that a petitioner may, to an extent, use a reply brief to cure deficiencies in an original petition regarding a claim of standing. *See South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-1, 71 NRC 1, 7 (2010).

RULES OF PRACTICE: STANDING TO INTERVENE (SAME PROCEEDING)

To participate in an NRC licensing proceeding, a petitioner must establish standing. *See* 10 C.F.R. § 2.309(a), (d). However, “[i]f the party or participant has already satisfied the requirements for standing . . . in the same proceeding in which the new or amended contentions are filed, it does not need to do so again.” *Id.* § 2.309(c)(4).

RULES OF PRACTICE: STANDING TO INTERVENE (PRESUMPTION BASED ON GEOGRAPHIC PROXIMITY)

In licensing actions involving COL applications, “we presume that a petitioner has standing to intervene if the petitioner lives within . . . approximately 50 miles of the facility in question.” *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).

RULES OF PRACTICE: NONTIMELY INTERVENTION (GOOD CAUSE)

Where a petitioner seeks to intervene in a licensing proceeding after the original deadline prescribed in 10 C.F.R. § 2.309(b) has lapsed, the petitioner must satisfy the “good cause” standard in section 2.309(c)(1) for its belated filing by showing that: (i) the information upon which the filing is based was not previously available; (ii) the information upon which the filing is based is materially different from information previously available; and (iii) the filing has been submitted in a timely fashion based on the availability of the subsequent information. 10 C.F.R. § 2.309(c)(1).

RULES OF PRACTICE: NONTIMELY INTERVENTION (GOOD CAUSE)

The regulatory language of 10 C.F.R. § 2.309(c)(1)(ii) does not require a petitioner to show that the new information is material to the contention. Rather, a petitioner satisfies section 2.309(c)(1)(ii) simply by showing that the new information upon which the contention is based is “materially different” from previously available information. “Materially” in this context describes the type or degree of difference between the new information and previously available information that a petitioner must establish, and it is synonymous with, for example, “significantly,” “considerably,” or “importantly.” *See* Amendments to

Adjudicatory Process Rules and Related Requirements, 77 Fed. Reg. 46,562, 46,566 (Aug. 3, 2012).

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

The contention admissibility standard is “strict by design,” *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001), and a licensing board must reject a contention that does not meet all six criteria. *See USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 437 (2006).

RULES OF PRACTICE: CONTENTIONS (SAFETY-RELATED)

Safety-related contentions must challenge the adequacy of a license application, not the adequacy of the NRC Staff’s review of that application. *See, e.g., Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-12, 53 NRC 459, 472 (2001). Nonetheless, a Board will not summarily reject a contention based solely on its improvident reference to a Final Safety Evaluation Report if it is clear that petitioners are challenging whether an applicant is entitled to a license, not whether the NRC Staff’s safety review of the license application was adequate. *See Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974) (stating that the Commission refuses to apply its rules of procedure in an “overly formalistic manner”).

NRC REGULATIONS: 10 C.F.R. § 50.33(f)(1)

In the context of 10 C.F.R. § 50.33(f)(1), the Commission has stated that “‘reasonable assurance’ does not mean a demonstration of near certainty that an applicant will never be pressed for funds in the course of construction,” but instead must merely “have a reasonable financing plan in the light of relevant circumstances.” *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 18 (1978).

RULES OF PRACTICE: CONTENTIONS

To adequately support a contention, petitioners should present direct support — by factual affidavits, expert declarations, or documentary evidence — for their assertions, and not rely on “bare assertions and speculation.” *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000).

RULES OF PRACTICE: CONTENTIONS (GENUINE DISPUTE)

A contention based on bare speculation without adequate support does not raise a genuine dispute on a material issue of law or fact. *See* 10 C.F.R. § 2.309(f)(1)(vi).

NRC REGULATIONS: 10 C.F.R. § 2.206

Section 2.206 provides a procedural mechanism for a stakeholder who seeks to raise concerns about a licensee’s putative safety deficiencies. *See Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-15-20, 82 NRC 211, 230 (2015) (“[S]ection 2.206 provides a process for stakeholders to advance concerns and obtain full or partial relief, or written reasons why the requested relief is not warranted.”) (internal quotation marks omitted).

**MEMORANDUM AND ORDER
(Denying Petition to Intervene and File a New
Contention, and Terminating Proceeding)**

Pending before this Licensing Board is a petition to intervene challenging a combined license (COL) application filed by Florida Power & Light Company (FPL) for two AP1000 nuclear reactors, Turkey Point Units 6 and 7, to be located near Homestead, Florida. *See* Petition for Leave to Intervene in a Hearing on [FPL’s] [COL] for Turkey Point Units 6 & 7 and File a New Contention (Apr. 18, 2017) [hereinafter Petition]. Three Florida municipalities — the City of Miami, the Village of Pinecrest, and the City of South Miami (referred to collectively as Petitioners) — allege that, in light of changed circumstances arising from Westinghouse Electric Company’s (Westinghouse’s) recent bankruptcy filing, FPL’s COL application no longer demonstrates that FPL is financially qualified to cover the construction and fuel cycle costs for Units 6 and 7, as required by 10 C.F.R. § 50.33(f)(1). *See* Petition at 7.

For the reasons discussed below, we conclude that, although Petitioners have standing to intervene and have proffered a timely contention, their contention fails to satisfy the admissibility standards in 10 C.F.R. § 2.309(f)(1). We therefore deny their petition to intervene.¹

¹On July 10, 2017, this Licensing Board issued a decision that disposed of all pending matters in this contested proceeding with the exception of Petitioners’ petition to intervene. *See* LBP-17-5, 85
(Continued)

I. BACKGROUND

A. In June 2009, FPL submitted a COL application to the NRC to construct two new AP1000 reactors (Units 6 and 7) at the Turkey Point site. Consistent with the requirements of 10 C.F.R. § 50.33(f)(1),² FPL’s application included information to demonstrate that FPL was financially qualified to carry out the construction and first fuel loading of Turkey Point Units 6 and 7. *See* Turkey Point Units 6 & 7 COL Application, Part 1 — General and Financial Information, Rev. 8, at 4-5 (ADAMS Accession No. ML16250A266) [hereinafter COL Application Part 1]. Specifically, FPL represented that the estimated total construction cost for Turkey Point Units 6 and 7 would range between \$13,700,498,919.00 and \$19,994,061,325.00. *See id.*, App. 1A. FPL stated that “[t]he sources of long-term construction funding for Units 6 & 7 will be a mixture of internally generated cash and external funding. The external funding will come from a mix of debt and equity capital. FPL currently uses first mortgage bonds and equity contributions from NextEra Energy, Inc. to finance long-term utility assets.” *Id.* at 5. NextEra Energy, Inc. is FPL’s parent company. *See id.* at 4-5.

FPL’s application also stated that FPL planned to recover the costs of constructing the facility via cost recovery in accordance with Florida Statute section

NRC 1, 5, 15 n.23 (2017). Our denial of their petition terminates this proceeding at the Licensing Board level. The uncontested, mandatory adjudication of FPL’s COL application remains pending before the Commission. *See* Florida Power and Light Company; Turkey Point, Units 6 & 7, 82 Fed. Reg. 34,995 (July 27, 2017).

²Section 50.33(f)(3) specifies that COL applicants must submit the financial qualification information described in section 50.33(f)(1), which states in relevant part:

[T]he applicant shall submit information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs. The applicant shall submit estimates of the total construction costs of the facility and related fuel cycle costs, and shall indicate the source(s) of funds to cover these costs.

10 C.F.R. § 50.33(f)(1); *see also id.* § 52.77 (“The [COL] application must contain all of the information required by 10 C.F.R. § 50.33.”).

Appendix C to 10 C.F.R. Part 50 provides guidance regarding how a COL applicant should establish its financial qualification. “In determining an applicant’s financial qualification,” states Appendix C, “the Commission will require the minimum amount of information necessary for that purpose.” 10 C.F.R. pt. 50, app. C. If the applicant is an “established organization[]” such as FPL, it need only provide (1) an estimate of construction costs; (2) the source of construction funds; and (3) its most recent annual financial statement. *See id.* Regarding the source of construction funds, Appendix C states that

[t]he application should include a brief statement of the applicant’s general financial plan for financing the cost of the facility, identifying the source or sources upon which the applicant relies for the necessary construction funds, e.g., internal sources such as undistributed earnings and depreciation accruals, or external sources such as borrowings.

Id.

366.93 and Florida Administrative Code r. 25-6.0423. See COL Application Part 1 at 5.³

In November 2016, the NRC Staff issued the Final Safety Evaluation Report (FSER) in which it assessed FPL's financial qualification to construct Turkey Point Units 6 and 7. See Division of New Reactor Licensing, Office of New Reactors, [FSER] for [COLs] for Turkey Point Nuclear Plant Units 6 and 7, Ch. 1 at 1-39 (Nov. 10, 2016) (ADAMS Accession No. ML16253A219) [hereinafter FSER]. First, the NRC Staff found that the estimated total construction costs presented in FPL's COL application were reasonable. See *id.* at 1-37 to 1-38. Second, the NRC Staff found that FPL was "financially qualified to construct the facilities" because it had "demonstrated that it possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs." *Id.* at 1-39. With regard to its financial qualification finding, the NRC Staff stated that

FPL expects to finance this project through a mixture of internally generated cash and external funding. The external funding will come from a mix of debt and equity capital. FPL currently uses first mortgage bonds and equity contributions from NextEra Energy, Inc. to finance long-term utility assets. The [NRC Staff] concludes that both FPL and NextEra Energy have sufficient financing capacity to fund this project from the following sources: internally generated operating cash flows, commercial paper and bank facilities, and long-term debt and equity capital markets; and will recover the cost of constructing the facility in accordance with Florida Statute [section] 366.93 and Florida Administrative Code R. 25-6.0423.

Id. at 1-38 to 1-39.

B. In accordance with 10 C.F.R. Part 52, Appendix D, IV.A.2.a, FPL's COL application also incorporated Westinghouse's AP1000 design control document by reference. See Turkey Point, Units 6 & 7 COL Application, Part 2-Final Safety Analysis Report, Rev. 8 *passim* (ADAMS Accession No. ML16264-A045). As the sole manufacturer for the AP1000 design, Westinghouse entered into a Reservation Agreement with FPL in May 2008 to reserve space for the manufacture of certain components for the construction of Turkey Point Units

³ Pursuant to Florida Statute section 366.93, the Florida Public Service Commission can grant a utility's request for advanced nuclear cost recovery for preconstruction and construction activities if the utility shows that (1) "[t]he plant remains feasible;" and (2) "[t]he projected costs for the plant are reasonable." Fla. Stat. § 366.93(3)(e) (2016). To make a "feasibility" showing, a utility must demonstrate that "it has committed sufficient, meaningful, and available resources to enable the project to be completed and that its intent is realistic and practical." Fla. Admin. Code r. 25-6.0423(6)(c) (2014).

6 and 7. *See* Petition, Ex. B, Reservation Agreement Between [Westinghouse] and [FPL] at 1 (May 22, 2008). The Reservation Agreement states that it is “not intended to be, and shall not be construed as, a contract for the purchase and sale of components.” *Id.* at 2. Rather, it expresses FPL’s and Westinghouse’s intent to execute a “Definitive Agreement” for the purchase and sale of the components prior to the expiration or termination of the Reservation Agreement. *See id.* It also provides that the Reservation Agreement would automatically terminate if, among other things, Westinghouse were to file for bankruptcy. *See id.*

On March 29, 2017, Westinghouse filed for Chapter 11 bankruptcy in the United States Bankruptcy Court for the Southern District of New York, *see* Petition, Ex. A, [Westinghouse] Voluntary Petition for Non-Individual Filing for Bankruptcy (Mar. 29, 2017), thereby terminating the Reservation Agreement between FPL and Westinghouse.

II. PROCEDURAL HISTORY

On April 18, 2017, Petitioners filed the petition to intervene that we now consider, arguing that, due to Westinghouse’s bankruptcy and the corresponding termination of the Reservation Agreement, FPL is no longer financially qualified to construct Turkey Point Units 6 and 7. Specifically, their contention alleges:

The FSER is deficient in concluding that FPL has demonstrated that it possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs and FPL has failed to indicate source(s) of funds to cover these costs.

Petition at 7.

On May 15, 2017, FPL and the NRC Staff filed answers opposing Petitioners’ request to intervene. *See* [FPL’s] Answer Opposing [Petitioners’] Petition to Intervene and Request for Hearing Regarding the [COL] Application for Turkey Point Units 6 & 7 (May 15, 2017) [hereinafter FPL Answer]; NRC Staff Answer to Petition for Leave to Intervene and New Contention (May 15, 2017) [hereinafter NRC Staff Answer].

On May 22, 2017, Petitioners filed a reply to FPL’s and the NRC Staff’s answers. *See* Petitioners’ Reply to NRC Staff and FPL’s Answers to Petition for Leave to Intervene in a Hearing on [FPL’s] [COL] Application for Turkey Point Units 6 & 7 and File a New Contention (May 22, 2017) [hereinafter Petitioners’ Reply].

On June 1, 2017, the NRC Staff filed an unopposed motion for permission to file a response to Petitioners’ reply, *see* NRC Staff’s Unopposed Motion for Leave to File a Response to New Arguments Raised in Petitioners’ Reply

(June 1, 2017) [hereinafter NRC Staff Motion], which we granted. *See* Licensing Board Order (Granting NRC Staff’s Unopposed Motion) (June 6, 2017) (unpublished).

Also on June 1, 2017, FPL filed a motion seeking to strike portions of Petitioners’ reply and an accompanying affidavit. *See* [FPL’s] Motion to Strike Portions of Petitioners’ Reply and Affidavit of Mark W. Crisp (June 1, 2017) [hereinafter FPL’s Motion to Strike]. Petitioners opposed FPL’s motion. *See* Petitioners’ Response to FPL’s Motion to Strike Portions of Petitioners’ Reply and Affidavit of Mark W. Crisp (June 12, 2017) [hereinafter Petitioners’ Response to FPL’s Motion].

On June 20, 2017, this Board held oral argument on the parties’ filings. *See* Licensing Board Order (Scheduling and Providing Instructions for Oral Argument) (June 8, 2017) (unpublished); *see also* Oral Argument Transcript at 910-98 (June 20, 2017) [hereinafter Tr.].

III. ANALYSIS

An entity seeking to intervene in an ongoing licensing proceeding must demonstrate standing and proffer a contention that is timely and that satisfies this agency’s contention-admissibility standards. *See* 10 C.F.R. § 2.309(a)-(d), (f). As discussed below, we conclude that Petitioners have standing and that their contention is timely. Their contention fails, however, to satisfy the NRC’s contention-admissibility standards.⁴

Before analyzing Petitioners’ intervention request, we consider FPL’s motion to strike portions of Petitioners’ reply and the accompanying affidavit of Mark W. Crisp (Exhibit 8 to Petitioners’ Reply). We agree with FPL that Mr. Crisp’s affidavit should be struck in its entirety, *see* FPL’s Motion to Strike at 6-7, because it improperly “attempt[s] to backstop elemental deficiencies in [Petitioners’] original petition to intervene.” *Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 262 (2008) (internal quotation marks omitted). “While a petitioner need not introduce at the contention phase every document on which it will rely in a hearing, if the contention as originally pled did not cite adequate documentary support, a petitioner cannot remediate the deficiency by introducing in the reply documents that were available to it during the time frame for initially

⁴In their reply, in addition to arguing that their contention should be admitted, Petitioners advanced for the first time several requests for relief, including requests to issue a license condition and to stay this proceeding. *See* Petitioners’ Reply at 13; *see also* Tr. 917-18. We reject their requests as untimely and meritless. *See* NRC Staff Motion, Attach., NRC Staff’s Response to New Arguments Raised in Petitioners’ Reply at 2-4.

filing contentions.” *Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 732 (2006). Petitioners do not assert that Mr. Crisp’s affidavit could not have been included as part of their original petition. *See* Petitioners’ Response to FPL’s Motion at 5-7. Accordingly, we will not consider the belated affidavit at this juncture.⁵ We decline, however, to strike the other material identified in FPL’s motion. *See* FPL’s Motion to Strike at 4-6, 8-12. In our view, that material bears a sufficient nexus to the facts and arguments in the initial petition to warrant being included in Petitioners’ reply.⁶

A. Petitioners Satisfy Standing Requirements

To participate in an NRC licensing proceeding, a petitioner must establish standing. *See* 10 C.F.R. § 2.309(a), (d). However, “[i]f the party or participant has already satisfied the requirements for standing . . . in the same proceeding in which the new or amended contentions are filed, it does not need to do so again.” *Id.* § 2.309(c)(4). As defined in NRC regulations, a “participant” includes “any interested . . . local governmental body . . . that seeks to participate in a proceeding under § 2.315(c).” *Id.* § 2.4. Because the City of Miami and the Village of Pinecrest previously satisfied the requirements for standing in this proceeding, *see* LBP-15-19, 81 NRC 815, 818-19, 828 (2015); LBP-11-6, 73 NRC 149, 248 (2011), they “do[] not need to do so again.” 10 C.F.R. § 2.309(c)(4).⁷

Regarding the City of South Miami, as stated *supra* note 7, in licensing actions involving COL applications, “we presume that a petitioner has standing to intervene if the petitioner lives within . . . approximately 50 miles of the

⁵ Mr. Crisp’s affidavit concerns the substance of Petitioners’ contention by primarily discussing the construction problems and cost overruns experienced at other AP1000 reactor sites and how the Westinghouse bankruptcy exacerbated those issues. Thus, our decision to strike it does not run afoul of Commission precedent holding that a petitioner may, to an extent, use a reply brief to cure deficiencies in an original petition regarding a claim of standing. *See, e.g., South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-1, 71 NRC 1, 7 (2010).

⁶ FPL states that if we do not grant in full its motion to strike, it “should be afforded an opportunity [to file a substantive answer] to demonstrate why nothing in [Petitioners’] reply renders the original contention admissible.” *See* FPL’s Motion to Strike at 12. FPL’s request to file a substantive answer is rendered moot by our determination that Petitioners’ proffered contention is not admissible.

⁷ The City of Miami and the Village of Pinecrest are located less than 50 miles from the Turkey Point site. *See* Petition at 4-5. Accordingly, even if they were required to make a fresh showing of standing, they could do so pursuant to the proximity, or geographic, presumption, which dispenses with the need for a petitioner who lives within 50 miles of the facility at issue to make an affirmative showing of injury, causation, and redressability in certain proceedings, including COL applications. *See, e.g., 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).

facility in question.” *Calvert Cliffs*, CLI-09-20, 70 NRC at 915-16. Because the City of South Miami is located less than 50 miles from the Turkey Point site, *see* Petition at 5, it satisfies the requirements for standing pursuant to the agency’s proximity, or geographic, presumption.

B. Petitioners’ Contention Is Timely

Where, as here, a petitioner seeks to intervene in a licensing proceeding after the original deadline prescribed in 10 C.F.R. § 2.309(b) has lapsed, the petitioner must satisfy the “good cause” standard in section 2.309(c)(1) for its belated filing by showing that

- (i) The information upon which the filing is based was not previously available;
- (ii) The information upon which the filing is based is materially different from information previously available; and
- (iii) The filing has been submitted in a timely fashion based on the availability of the subsequent information.

10 C.F.R. § 2.309(c)(1).

We agree with the NRC Staff that Petitioners’ newly proffered contention satisfies the “good cause” standard. *See* NRC Staff Answer at 10-12. First, the information on which the contention is based — i.e., Westinghouse’s recent declaration of bankruptcy — “was not previously available.” 10 C.F.R. § 2.309(c)(1)(i). Second, the fact that Westinghouse declared bankruptcy “is materially different from information previously available.” *Id.* § 2.309(c)(1)(ii). Third, Petitioners submitted their contention “in a timely fashion based on the availability” of the new information. *Id.* § 2.309(c)(1)(iii). Specifically, they filed their petition on April 18, 2017, or 20 days after Westinghouse filed for bankruptcy on March 29, 2017. *See* Petition at 12-13. The timing of their filing comported with this Board’s Scheduling Order, which specified that a newly proffered contention would be deemed timely if filed within 30 days of the date when the new and materially different information on which it is based became available. *See* Licensing Board Initial Scheduling Order and Administrative Directives (Prehearing Conference Call Summary, Grant of Joint Motion Regarding Mandatory Disclosures, Initial Scheduling Order, and Administrative Directives) (Mar. 30, 2011) at 8 (unpublished), *amended by* Licensing Board Notice (Granting Joint Motion to Modify Initial Scheduling Order) (Sept. 12, 2012) (unpublished).

FPL argues that the contention fails to satisfy the “good cause” standard because “Westinghouse’s March 2017 bankruptcy is not material to the substance of the contention, and, therefore does not justify the Petitioners’ late filing.” FPL Answer at 16-17. Restated, FPL argues that the “materially different” standard

in section 2.309(c)(1)(ii) requires Petitioners to show that the new information is material to the substance of their contention. *See id.*; *see also* Tr. at 943-45. We disagree.

FPL's argument is incompatible with the regulatory language, which does *not* require a petitioner to show that the new information is material to the contention. Rather, a petitioner satisfies section 2.309(c)(1)(ii) simply by showing that the new information upon which the contention is based is "materially different" from previously available information. "Materially" in this context describes the type or degree of difference between the new information and previously available information that a petitioner must establish, and it is synonymous with, for example, "significantly," "considerably," or "importantly."⁸ In arguing that section 2.309(c)(1)(ii) also requires a petitioner to show that the new information is material to the contention, FPL effectively asks this Board to engraft a new requirement onto the regulation. This we cannot do.⁹

C. Petitioners' Contention Is Not Admissible

1. *The Six-Factor Contention-Admissibility Standard*

For a contention to be admissible, it must satisfy the six-factor admissibility standard in section 2.309(f)(1), which requires a petitioner to

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

⁸ *See* Amendments to Adjudicatory Process Rules and Related Requirements, 77 Fed. Reg. 46,562, 46,566 (Aug. 3, 2012) (addressing concern that the good cause standard will allow petitioners to use old information repackaged in a new document as a basis for a new contention by stating that petitioners must still show that "the new information . . . is 'materially' different from information that was previously available"); *see also* *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-10-1, 71 NRC 165, 183 n.9 (2010) (Materiality in the context of section 2.309(c)(1)(ii) "relates to the magnitude of the difference between previously available information and currently available information.").

⁹ FPL advances a policy argument in support of its interpretation of section 2.309(c)(1)(ii), asserting that such an interpretation is necessary to prevent petitioners from filing new contentions "[j]ust because some new event occurred." Tr. at 944. FPL's policy argument ignores that (1) the new contention must be "based" on the new information, *see* 10 C.F.R. § 2.309(c)(1)(i), (ii); and (2) the "materially different" standard in section 2.309(c)(1)(ii) will itself act as a check to prevent petitioners from filing new contentions based on new information that is insignificantly different from previously available information. *See supra* note 8. Additionally, the NRC's strict contention-admissibility standard will prevent the admission of contentions that are not material to the findings the NRC Staff must make to support a licensing action. *See* 10 C.F.R. § 2.309(f)(1)(iv), (vi).

FPL advances several other arguments challenging the timeliness of Petitioners' contention. *See* FPL Answer at 13-17. None of them provides a basis for rejecting Petitioners' contention as untimely.

- (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 . . . , together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; [and]
- (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 . . . that the petitioner disputes and the supporting reasons for each dispute

10 C.F.R. § 2.309(f)(1). This standard is “strict by design,” *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001), and a licensing board must reject contentions that do not meet all six criteria. *See USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 437 (2006).

2. *Petitioners’ Contention Is Not Admissible Because Petitioners Fail to Show That a Genuine Dispute Exists on a Material Issue of Law or Fact*

Petitioners’ contention alleges that, in light of changed circumstances arising from Westinghouse’s recent bankruptcy filing, FPL’s COL application no longer demonstrates that FPL is financially qualified to cover the construction and fuel cycle costs for Units 6 and 7, as required by 10 C.F.R. § 50.33(f)(1). *See* Petition at 7.¹⁰ Petitioners advance two arguments in support of their con-

¹⁰ As stated *supra* Part II, Petitioners’ contention alleges:

The FSER is deficient in concluding that FPL has demonstrated that it possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs and FPL has failed to indicate source(s) of funds to cover these costs.

Petition at 7. Pursuant to Commission case law, safety-related contentions must challenge the adequacy of a license application, not the adequacy of the NRC Staff’s review of that application. *See, e.g., Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-12, 53 NRC 459, 472 (2001). Despite that rule, Petitioners’ contention alleges a deficiency in the FSER, which is an NRC Staff review document. Although the NRC Staff states that this Board could summarily reject Petitioners’ contention on this ground, *see* NRC Staff Answer at 10, the NRC Staff nevertheless treats the contention as a challenge to FPL’s showing of financial qualification in its COL application. *See id.* We will do the same, because notwithstanding the contention’s

(Continued)

tention. First, they assert that Westinghouse's bankruptcy has jeopardized FPL's ability to recover construction costs under Florida law, thereby casting doubt on whether FPL continues to be financially qualified to cover construction costs. *See* Petition at 10-11. Second, they assert that Westinghouse's bankruptcy casts doubt on FPL's ability to secure external funding for construction costs, thus raising a genuine dispute about whether FPL remains financially qualified. *See id.* at 11-12.

As discussed below, we agree with FPL and the NRC Staff that Petitioners' contention is not admissible because, contrary to 10 C.F.R. § 2.309(f)(1)(vi), neither of the arguments underlying the contention raises a genuine dispute on a material issue of law or fact. *See* FPL Answer at 22-23; NRC Staff Answer at 12-16.¹¹

a. Petitioners' Claim That FPL Will Be Unable to Recover Construction Costs from Florida Does Not Raise a Genuine Dispute on a Material Issue Because FPL's COL Application Does Not Rely on Cost Recovery as Part of Its Financial Qualification Statement

Petitioners assert that, as a result of Westinghouse's bankruptcy, "the ability for FPL to recover any costs . . . under [Florida Statute section 366.93] has vanished and a major source of funding the construction of the nuclear facilities has disappeared as well." Petition at 11. Petitioners therefore argue that "a genuine dispute exists as to whether FPL is still financially qualified to carry out this project." *Id.* We disagree.¹²

Petitioners' argument is based on an erroneous interpretation of FPL's COL application, which — contrary to Petitioners' understanding — does not rely on cost recovery from Florida as a source of construction funding. FPL's COL application states in relevant part:

improvident reference to the FSER, it is clear that Petitioners are challenging whether FPL is entitled to a COL, not whether the NRC Staff's safety review of the COL application was adequate. Under these circumstances, to summarily reject Petitioners' contention based solely on its reference to the FSER would, in our judgment, constitute an overly formalistic application of NRC regulations. *See Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974) (stating that the Commission refuses to apply its rules of procedure in an "overly formalistic manner").

¹¹ Because Petitioners' failure to satisfy section 2.309(f)(1)(vi), standing alone, mandates the rejection of their contention, we need not address the other grounds advanced by FPL and the NRC Staff for rejecting Petitioners' contention as inadmissible. *See* FPL Answer at 18-22; NRC Staff Answer at 17-18.

¹² For a discussion of (1) the financial qualification standard established by NRC regulations; and (2) the cost recovery procedures in Florida Statute section 366.93 and its implementing regulations, *see supra* Part I.A.

FPL will recover the cost of constructing the facility in accordance with Florida Statute [section] 366.93, Cost recovery for the siting, design, licensing, and construction of nuclear and integrated gasification combined cycle power plants . . . and Florida Administrative Code R. 25-6.0423, Nuclear or Integrated Gasification Combined Cycle Power Plant Cost Recovery

The sources of long-term construction funding for Units 6 & 7 will be a mixture of internally generated cash and external funding. The external funding will come from a mix of debt and equity capital. FPL currently uses first mortgage bonds and equity contributions from NextEra Energy, Inc. to finance long-term utility assets.

COL Application Part 1 at 5. Petitioners infer from the above paragraphs that FPL intends to rely on costs recovered from Florida pursuant to Florida Statute section 366.93 as a source of funding for construction costs. *See* Petitioners' Reply at 6-7. Based on this premise, Petitioners assert that, as a result of Westinghouse's bankruptcy, FPL's ability to recover construction costs from Florida is now in jeopardy and, accordingly, FPL's financial qualification to cover construction costs is questionable. *See* Petition at 10-11.

But FPL's COL application, properly construed, does not represent that FPL will rely on cost recovery from Florida as a source of construction funding. As explained *supra* Part I.A, NRC regulations state that an established organization (such as FPL) can demonstrate financial qualification by including in its COL application a brief statement identifying the sources of funds that the applicant will rely on for construction, namely, "internal sources such as undistributed earnings and depreciation accruals, or external sources such as borrowings." 10 C.F.R. pt. 50, app. C; *see supra* note 2. The second paragraph of the above-quoted portion of FPL's COL application explicitly addresses "sources of long-term construction funding for Units 6 & 7," and it mirrors Appendix C's requirements, stating that such funding "will be a mixture of internally generated cash and external funding." COL Application Part 1 at 5. This paragraph does not identify cost recovery from Florida as a source of construction cost funding for purposes of demonstrating financial qualification. FPL's application states that FPL intends to use Florida Statute section 366.93 as a source of construction cost *recovery*, not as a source of construction cost *funding*. *See id.*

We observe that Appendix C does not prohibit applicants from endeavoring to rely on cost recovery as a source of construction cost funding for purposes of demonstrating financial qualification. The salient point here is that, as explained above, FPL's COL application does *not* purport to rely on cost recovery to

demonstrate that FPL is financially qualified to construct Units 6 and 7. *See* COL Application Part 1 at 5; *see also* Tr. at 951-52; FPL Answer at 22-23.¹³

In short, because FPL does not purport to rely on cost recovery from Florida as a source of construction funding, Petitioners' claim that FPL will be unable to recover construction costs from Florida does not controvert FPL's statement in its COL application regarding FPL's sources of construction funding. Thus, FPL's ability to recover such construction costs is not material to FPL's financial qualification pursuant to 10 C.F.R. § 50.33(f)(1). Because Petitioners' argument neither controverts FPL's COL application nor casts doubt on FPL's financial qualification, it does not create a genuine dispute on a material issue of law or fact. Petitioners' contention is therefore inadmissible pursuant to section 2.309(f)(1)(vi) to the extent it is grounded on that argument.

b. Petitioners' Claim That Westinghouse's Bankruptcy May Impair FPL's Ability to Secure External Funding for Construction Costs Does Not Raise a Genuine Dispute on a Material Issue

Petitioners also argue that, as a result of Westinghouse's bankruptcy and the termination of the Reservation Agreement, it can reasonably be inferred that FPL's ability to secure external funding for construction costs will be impaired. *See* Petition at 11.¹⁴ In support of their argument, Petitioners cite to a January 31, 2017 newspaper article stating that Westinghouse is moving away from construction activities in the United States; specifically, that "Westinghouse will continue to design nuclear reactors . . . and it is expected to complete construction work at two U.S. nuclear facilities . . . in Georgia and South Carolina," but that going forward it would "let other companies handle the risk of building the facilities." *See* Petition, Ex. C, Wall St. J., *Toshiba to Exit Nuclear Construction Business* at 2 (Jan. 31, 2017). Petitioners allege that, with no current foreseeable way to construct Turkey Point Units 6 and 7, it will be more difficult for FPL to secure external sources of funding. *See id.* at 11-12.

¹³Notably, although the FSER acknowledges that FPL plans to recover the cost of constructing Units 6 and 7 pursuant to Florida Statute section 366.93, it determines that FPL's financial qualification to fund this project is unrelated to FPL's ability to recover construction costs from Florida. *See* FSER at 1-38 to 1-39. Rather, as the FSER concludes, "both FPL and NextEra Energy have sufficient financing capacity to fund this project from . . . internally generated operating cash flows, commercial paper and bank facilities, and long-term debt and equity capital markets." *Id.* at 1-39; *see also* Tr. at 965-66, 970. Although the FSER is not at issue here, *see supra* note 10, its conclusion that FPL's financial qualification is independent of FPL's ability to recover construction costs from Florida undercuts Petitioners' argument that FPL's COL application relies on cost recovery as part of its financial qualification statement.

¹⁴For a discussion of the now-terminated Reservation Agreement between FPL and Westinghouse, *see supra* Part I.B.

Westinghouse's bankruptcy might, as Petitioners allege, impact some external funders' decisions to finance the project. However, the mere allegation that the external funding might be impacted is insufficient to raise a genuine dispute as to whether FPL is financially qualified to construct Units 6 and 7 — that is, whether FPL “possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs.” 10 C.F.R. § 50.33(f)(1).

In the context of section 50.33(f)(1), the Commission has stated that “‘reasonable assurance’ does not mean a demonstration of near certainty that an applicant will never be pressed for funds in the course of construction,” but instead must merely “have a reasonable financing plan in the light of relevant circumstances.” *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 18 (1978). Petitioners' claim that Westinghouse's bankruptcy *might* jeopardize some external sources' willingness to fund the construction of Units 6 and 7 is insufficient to impugn the reasonableness of FPL's financial plan, which contemplates that the sources of construction funding will be (1) internally generated cash; and (2) external funding from a mix of debt and equity capital, including first mortgage bonds and equity contributions from its parent company, NextEra Energy, Inc. See COL Application Part 1 at 5. Petitioners have not presented direct support — by factual affidavits, expert declarations, or documentary evidence — for their assertion that Westinghouse's bankruptcy will necessarily jeopardize FPL's external sources of funding. Instead, they rely on “bare assertions and speculation” to support their proffered contention. *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000). “This is not enough to trigger an adversary hearing on [FPL's] financial qualifications.” *Id.*¹⁵

In short, Petitioners have not provided adequate facts to cast legitimate doubt on the reasonableness of FPL's financing plan or FPL's ability to implement that plan. Accordingly, their speculative claim that Westinghouse's bankruptcy will potentially impair FPL's ability to secure external funding for construction costs does not raise a genuine dispute on a material issue of law or fact.¹⁶

¹⁵In its answer, the NRC Staff correctly states that “Petitioners fail to demonstrate the existence of a nexus between Westinghouse's bankruptcy and the financial capability of FPL.” NRC Staff Answer at 17. In particular, Petitioners do not provide any credible facts to support a conclusion that Westinghouse's bankruptcy will impair the financial capacity of FPL or its parent company, NextEra Energy, Inc. Any argument challenging FPL's financial capacity is particularly deficient in light of the assumed financial stability of established utilities under NRC regulations. See 10 C.F.R. pt. 50, app. C, I.A.2; *Seabrook Station*, CLI-78-1, 7 NRC at 10 & n.14.

¹⁶To the extent that new and materially different information were to come to light casting legitimate doubt on FPL's financial qualifications to construct Units 6 and 7, Petitioners would not

(Continued)

IV. CONCLUSION

For the foregoing reasons, this Board *denies* Petitioners' request to intervene and file a new contention, thereby terminating this proceeding at the Board level. *See supra* note 1.

Petitioners may file an appeal of this Memorandum and Order with the Commission within 25 days of service of this order. Any party opposing the appeal may file a brief in opposition within 25 days after service of the appeal. *See* 10 C.F.R. § 2.311(b).

It is so ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

E. Roy Hawkens, Chairman
ADMINISTRATIVE JUDGE

Dr. Michael F. Kennedy
ADMINISTRATIVE JUDGE

Dr. William C. Burnett
ADMINISTRATIVE JUDGE

Rockville, Maryland
July 31, 2017

be foreclosed from seeking to reopen the record. *See* 10 C.F.R § 2.326. Alternatively, if FPL's COL application is ultimately granted, Petitioners may raise any concerns about putative safety deficiencies through a 10 C.F.R. § 2.206 petition. *See Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-15-20, 82 NRC 211, 230 (2015) (“[S]ection 2.206 provides a process for stakeholders to advance concerns and obtain full or partial relief, or written reasons why the requested relief is not warranted.”) (internal quotation marks omitted).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Stephen G. Burns

In the Matter of

**Docket Nos. 50-228-LR
50-228-LT
50-228-EA**

**AEROTEST OPERATIONS, INC.
(Aerotest Radiography and Research
Reactor)**

October 30, 2017

MEMORANDUM AND ORDER

Today we address a motion jointly filed by the NRC Staff, Aerotest Operations, Inc., and Nuclear Labyrinth, LLC to terminate the three captioned proceedings.¹ The procedural history of these matters has been recounted in detail in previous decisions, and we do not repeat it here.² In short, Aerotest and Nuclear Labyrinth sought hearings on three Staff actions: (1) the denial of Aerotest and Nuclear Labyrinth's application for an indirect transfer of the facility operating license for the Aerotest Radiography and Research Reactor (ARRR) from Aerotest to Nuclear Labyrinth; (2) the denial of Aerotest's application to renew the facility operating license for the ARRR; and (3) an enforcement order prohibiting operation of the ARRR.³

¹ Joint Motion to Terminate Proceedings (Aug. 14, 2017) (Joint Motion).

² See CLI-15-26, 82 NRC 408 (2015); CLI-14-5, 79 NRC 254 (2014).

³ Joint Demand for Hearing on Denial of License Renewal and Indirect License Transfer Regarding Aerotest Radiography and Research Reactor Facility Operating License No. R-98 (Aug. 13, 2013);

(Continued)

The Staff denied the license transfer application after it determined that neither Aerotest nor Nuclear Labyrinth had demonstrated possession of or reasonable assurance of obtaining the funds necessary to cover estimated operating costs for the term of the ARRR license.⁴ Absent the transfer to Nuclear Labyrinth, Aerotest could not cure its noncompliance with the foreign ownership provisions of section 104d. of the Atomic Energy Act of 1954, as amended, and our implementing regulation, 10 C.F.R. § 50.38.⁵ Accordingly, the Staff denied the license renewal application and issued the associated enforcement order prohibiting operation of the ARRR and directing Aerotest to begin the decommissioning process.⁶

We granted a hearing on the Staff's denial of the license transfer application and held in abeyance the hearing demands on the license renewal and enforcement order.⁷ The Chief Administrative Judge of the Atomic Safety and Licensing Board Panel served as Presiding Officer for the license transfer hearing.⁸

Aerotest and Nuclear Labyrinth presented new information at the hearing to satisfy the agency's financial qualifications requirements.⁹ Upon consideration of the hearing record,¹⁰ we remanded the license transfer application to the Staff, directing the Staff to consider Aerotest and Nuclear Labyrinth's new information and to afford them "an opportunity to supplement the application and submit any

Joint Answer to and Demand for Hearing on Order Prohibiting Operation of Aerotest Radiography and Research Reactor Facility Operating License No. R-98 (Aug. 13, 2013); *see* Order Prohibiting Operation of Aerotest Radiography and Research Reactor, 78 Fed. Reg. 46,618 (Aug. 1, 2013) (Order Prohibiting Operation).

⁴ Safety Evaluation by the Office of Nuclear Reactor Regulation; Indirect License Transfer of Aerotest Radiography and Research Reactor due to the Proposed Acquisition of Aerotest Operations, Inc. by Nuclear Labyrinth, LLC; Facility Operating License No. R-98; Docket No. 50-228 (July 24, 2013), at 9 (ADAMS accession no. ML13129A001).

⁵ The noncompliance stemmed from the May 2000 acquisition of Aerotest by Autoliv ASP, Inc., a wholly-owned subsidiary of Autoliv, Inc., the majority of whose stock was held by non-U.S. citizens and the majority of whose board of directors and executive officers were likewise non-U.S. citizens. *See* Joint Motion at 1-2; Letter from Eric. J. Leeds, NRC, to Michael Anderson, Aerotest, "Aerotest Operations, Inc. — Denial of License Renewal, Denial of License Transfer, and Issuance of Order to Modify License No. R-98 to Prohibit Operation of the Aerotest Radiography and Research Reactor, Facility Operating License No. R-98 (TAC Nos. ME8811 and MC9596)" (July 24, 2013), at 1-2 (ML13120A598) (Denial Letter). The transfer of ownership to Autoliv occurred without prior NRC review and approval.

⁶ Denial Letter at 1-2; Order Prohibiting Operation, 78 Fed. Reg. at 46,620.

⁷ CLI-14-5, 79 NRC at 265.

⁸ *Id.*; *see* 10 C.F.R. § 2.1319(a).

⁹ *See* CLI-15-26, 82 NRC at 411.

¹⁰ *See* 10 C.F.R. § 2.1319(f) (providing that the presiding officer's jurisdiction terminates upon certification of the hearing record to the Commission); LBP-14-10, 80 NRC 85, 85-124 (2014).

additional relevant information within a time frame established by the Staff.”¹¹ On remand, the Staff determined that the application, as supplemented over the course of several months, met the requirements for license transfer, including the financial qualifications requirements.¹² The Staff therefore consented to the license transfer subject to certain conditions.¹³ Shortly after completion of the transfer of ownership to Nuclear Labyrinth,¹⁴ the Staff withdrew its denial of the license renewal application and withdrew its enforcement order.¹⁵ The Staff has resumed its review of the license renewal application.¹⁶

The Staff, Aerotest, and Nuclear Labyrinth now seek to terminate these proceedings because the matters at issue have been resolved.¹⁷ In view of the Staff’s approval of the now-completed transfer of the ARRR license to Nuclear Labyrinth, the Staff’s withdrawal of its denial of the license renewal application, and the Staff’s withdrawal of the related enforcement order, we *grant* the joint motion and *terminate* the captioned proceedings.

IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 30th day of October 2017.

¹¹ CLI-15-26, 82 NRC at 412.

¹² See Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Indirect License Transfer and Conforming Amendment to Facility Operating License No. R-98 for Aerotest Radiography and Research Reactor Due to Proposed Acquisition of Aerotest Operations, Inc. by Nuclear Labyrinth, LLC, Docket No. 50-228 (Feb. 28, 2017), at 2, 11, 15 (ML16333A449). The Staff issued a fresh notice of opportunity to comment or request a hearing on the license transfer application; no comments or hearing requests were filed. Aerotest Operations, Inc.; Aerotest Radiography and Research Reactor; Consideration of Approval of Indirect License Transfer and Conforming Amendment, 81 Fed. Reg. 65,677, 65,679 (Sept. 23, 2016).

¹³ See In the Matter of Aerotest Operations, Inc.; Aerotest Radiography and Research Reactor; Order Approving Indirect Transfer of Facility Operating License and Conforming Amendment, 82 Fed. Reg. 13,366 (Mar. 10, 2017).

¹⁴ See Letter from Spyros A. Traiforos, NRC, to Dr. David M. Slaughter, Nuclear Labyrinth, LLC (July 17, 2017), at 1-2 (ML17138A310) (amending license with conforming administrative changes associated with the approved license transfer).

¹⁵ Letter from Patricia Holahan, NRC, to Dr. David M. Slaughter, Aerotest Operations, Inc. (Aug. 10, 2017), at 3-4 (ML17138A306); Letter from Brian E. Holian, NRC, to Dr. David M. Slaughter, Aerotest Operations, Inc. (Aug. 8, 2017), at 3-4 (ML17138A309) (Letter Withdrawing Denial of License Renewal Application).

¹⁶ See Letter Withdrawing Denial of License Renewal Application at 4; Joint Motion at 9-10.

¹⁷ See Joint Motion at 9-10.

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)

October 6, 2017

This proceeding involves a petition for leave to intervene and a request for a hearing by C-10 Research & Education Foundation, Inc. (C-10) in response to a License Amendment Request (LAR) by NextEra Energy Seabrook, LLC. The Board found that C-10 has standing to intervene and has submitted five admissible contentions, Contentions A, B, C, D, and H, which were reformulated by the Board into one contention for purposes of efficiency and clarity. Alternatively, the Board found that even if none of C-10's independent contentions are admissible, the reformulated contention appropriately consolidates C-10's arguments into an admissible contention. The Board therefore granted C-10's motion and admitted it as a party to the proceeding.

**RULES OF PRACTICE: GENERAL REQUIREMENTS TO OBTAIN
A HEARING**

A hearing request will be granted if the petitioner meets the standing requirements of 10 C.F.R. § 2.309(d) and has proffered at least one contention that meets the requirements of 10 C.F.R. § 2.309(f)(1).

RULES OF PRACTICE: STANDING TO INTERVENE

In determining whether a petitioner has the requisite interest to satisfy standing requirements, the Commission has long applied contemporaneous judicial concepts of standing, requiring a showing of a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision.

RULES OF PRACTICE: STANDING; ORGANIZATIONS

When an organization seeks to intervene, it may establish standing either in its own right or as a representative for an individual.

RULES OF PRACTICE: STANDING; ORGANIZATIONS

To intervene in its own right, an organization must satisfy the same standing requirements of injury, traceability, and redressability as an individual seeking to intervene.

RULES OF PRACTICE: STANDING; REPRESENTATIONAL

An organization may intervene based on the interests, germane to the purpose of the organization, of a member or members injured by the proposed actions. Associational standing, generally referred to as representational standing, requires that at least one injured member authorize the organization to represent the member's interests.

RULES OF PRACTICE: STANDING; PROXIMITY PRESUMPTION

In operating license or construction permit proceedings, the Commission has additionally adopted a proximity presumption that allows an individual or group living, having frequent contacts, or having a significant property interest within 50 miles of a nuclear power reactor to establish standing without the need to make an individualized showing of injury, causation, and redressability. The presumption rests on our 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.

RULES OF PRACTICE: STANDING; PROXIMITY PRESUMPTION

An organization, like an individual, is entitled to the benefit of the proximity presumption when it applies because an organization, like an individual, is

considered a person as we have defined that word in 10 C.F.R. § 2.4 and as we have used it in 10 C.F.R. § 2.309 regarding standing. Thus, in deciding standing, regardless of whether the petitioner seeking to intervene is an individual or an organization, the same showing is required.

RULES OF PRACTICE: STANDING; PROXIMITY PRESUMPTION; BURDEN

The petitioner has the burden to show that the proximity presumption should apply.

RULES OF PRACTICE: STANDING; PROXIMITY PRESUMPTION; LICENSE AMENDMENT PROCEEDINGS

In a license amendment case, a petitioner cannot base his or her standing simply upon a residence or visits near the plant, unless the proposed action quite obviously entails an increased potential for offsite consequences. In such a case, whether and at what distance a petitioner can be presumed to be affected must be judged on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source.

RULES OF PRACTICE: STANDING; MERITS

Standing is a threshold legal question that does not require an assessment of the petitioner's case on the merits. At the pleading stage, it is generally sufficient if the petitioner provides plausible factual allegations that satisfy each element of standing, and the Board must accept as true all material allegations of the petition.

RULES OF PRACTICE: STANDING; FAVORABLE CONSTRUCTION

The Commission has ruled that licensing boards should construe the petition in favor of the petitioner when evaluating whether a petitioner has met its burden to establish standing.

RULES OF PRACTICE: STANDING (*PRO SE* PETITIONERS)

Pro se petitioners are held to less rigid pleading standards, so that parties with a clear — but imperfectly stated — interest in the proceeding are not excluded.

**RULES OF PRACTICE: STANDING; PROXIMITY PRESUMPTION;
ORGANIZATIONS**

An office location, as well as a residence, may serve as the basis of standing under the proximity presumption.

**RULES OF PRACTICE: STANDING; PROXIMITY PRESUMPTION;
LICENSE AMENDMENT PROCEEDINGS**

When alleging that a license amendment will entail an increased potential for offsite consequences, it is sufficient if the petitioner has identified some plausible chain of causation, some scenario suggesting how the particular license amendments would result in a distinct new harm or threat to the petitioner.

RULES OF PRACTICE: STANDING; PROXIMITY PRESUMPTION

Under the proximity presumption a petitioner need not expressly establish the traditional standing elements of injury, causation, or redressability. Instead, proximity standing rests on the presumption that an accident associated with the nuclear facility could adversely affect the health and safety of people working or living offsite but within a certain distance of that facility.

**RULES OF PRACTICE: STANDING; PROXIMITY PRESUMPTION;
LICENSE AMENDMENT PROCEEDINGS**

The first element of proximity standing in license amendment cases, the obvious potential for offsite consequences, requires that the kind of action at issue, when considered in light of the radioactive sources at the plant, justifies a presumption that the licensing action could plausibly lead to the offsite release of radioactive fission products from the reactors.

**RULES OF PRACTICE: STANDING; ORGANIZATIONAL;
CONCRETE INJURY**

To claim a concrete injury to an organizational interest, an organization must allege that the defendant's conduct perceptibly impaired the organization's ability to provide services in order to establish injury in fact. An organization's ability to provide services has been perceptibly impaired when the defendant's conduct causes an inhibition of the organization's daily operations. However, frustration of an organization's objectives is the type of abstract concern that does not impart standing.

**RULES OF PRACTICE: STANDING; ORGANIZATIONAL;
CONCRETE INJURY**

Under judicially recognized concepts of standing, the magnitude, as distinct from the directness, of the injury is not critical to the concerns that underlie the requirement of standing.

RULES OF PRACTICE: STANDING; REPRESENTATIONAL

The Commission recognizes that not even *inherently* representative organizations qualify for automatic standing, but that they must instead satisfy certain requirements before being permitted to represent others.

**RULES OF PRACTICE: STANDING; REPRESENTATIONAL;
EVIDENCE**

The Commission generally requires evidence that an organization has been authorized to represent one or more of its members. In most cases an organization claiming representational standing must provide an affidavit specifically authorizing the organization to represent the interest of a named member. However, it has been enough for standing purposes that the petition has been signed by a ranking official of the organization who himself had the requisite personal interest to support an intervention petition.

RULES OF PRACTICE: SCOPE OF REPLY

The Commission prohibits the introduction of new arguments in a reply when doing so would unfairly deprive other participants of an opportunity to rebut new claims. However, the Commission has allowed a petitioner to provide additional facts and/or argument related to standing in its reply, provided that the new information is reasonably related to the allegations originally presented.

**LICENSING BOARDS: AUTHORITY TO REFORMULATE
CONTENTIONS**

The Commission expects licensing boards to reformulate contentions to eliminate extraneous issues or to consolidate issues for a more efficient proceeding. The Commission has affirmed licensing boards' reformulation of a contention where the petition was not a model of clarity or organization and where an argument was not clearly articulated within the four corners of the original proffered contention.

LICENSING BOARD(S): AUTHORITY TO REASONABLY INTERPRET THE PETITION

The Commission also permits boards to consider the readily apparent legal implications of a *pro se* petitioner's arguments, even if not expressly stated in the petition. A reformulated contention is acceptable if it reasonably interprets a petitioner's arguments. The petitioner, however, must provide the information necessary to satisfy the contention admissibility criteria.

ADJUDICATORY PROCEEDINGS: AUTHORITY OF NRC STAFF TO PROPOSE REFORMULATED CONTENTIONS

The Staff is authorized to propose a reformulation of a petitioner's contentions pursuant to 10 C.F.R. § 2.319(i)(1) as part of its authority to address its view of the admissibility of the petitioner's proffered contentions. The Staff's perspective on whether the Board should reformulate a petitioner's proffered contentions is especially valuable, given that the Staff provides an independent regulatory perspective for the record, and its perspective is that of public servants, serving the public interest.

REGULATIONS; INTERPRETATION OF SECTION 2.319

Section 2.319 of 10 C.F.R. provides that "[a board] has the duty to conduct a fair and impartial hearing according to law" and has "all powers necessary to those ends." That regulation requires the Board to fairly and impartially judge all issues before it, which necessarily includes thoroughly reviewing and considering agency precedent and drawing its own conclusions based on that precedent.

RULES OF PRACTICE: CONTENTION ADMISSIBILITY; SCOPE — LICENSE AMENDMENT PROCEEDINGS

In a license amendment proceeding, a petitioner's contentions must focus on the issues identified in the hearing notice, the license amendment application, and the Staff's environmental responsibilities relating to the application.

REGULATIONS: INTERPRETATION OF SECTION 2.309

The materiality requirement of section 2.309(f)(1)(iv) requires a significant link between the claimed deficiency in the application and the agency's ultimate determination whether the applicant will adequately protect the health and safety of the public and the environment.

RULES OF PRACTICE: SCOPE OF REVIEW IN LICENSE AMENDMENT PROCEEDINGS

NRC regulations define the 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. 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.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS; EVIDENTIARY STANDARD

At the contention admissibility stage, petitioners are not required to prove their case on the merits. Also, petitioners are not required to provide expert or factual support in the form or of the quality necessary to withstand a summary disposition motion. The requirement to demonstrate a genuine dispute of material fact at the summary disposition stage requires a more rigorous evidentiary showing than that required to establish an admissible contention. The petitioner also need not set forth all the evidence on which it may rely at later stages of the proceeding.

RULES OF PRACTICE: CONTENTIONS; *PRO SE* PETITIONERS

The board will not reject a contention filed by a *pro se* petitioner because it did not use specific words to connect its allegation to the Staff's ultimate findings.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

At the contention admissibility stage, the Board does not decide which side has the better argument on the merits.

LICENSING BOARDS: AUTHORITY TO REFORMULATE CONTENTIONS

Pursuant to 10 C.F.R. §§ 2.319(j) and 2.329(c)(1), licensing boards have the authority to hold conferences in order to simplify and clarify the petitioner's contentions for adjudication. Pursuant to this authority, boards possess the authority

to reformulate contentions in order to consolidate multiple similar contentions, trim out extraneous or inadmissible portions of contentions, and clarify issues.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

At the contention admissibility stage, the Board admits contentions, not bases.

LICENSING BOARDS: AUTHORITY TO REFORMULATE CONTENTIONS

While boards may not provide the threshold information required for contention admissibility, they have reformulated a wide range of contentions in order either to eliminate extraneous issues or to consolidate related issues for a more efficient proceeding.

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MEMORANDUM AND ORDER
(Ruling on Standing and Admission of Contentions)

I. INTRODUCTION

Before the Licensing Board is a Petition for Leave to Intervene filed by *pro se* petitioner C-10 Research & Education Foundation, Inc. (C-10 or Petitioner).¹ Petitioner seeks a hearing on the License Amendment Request (LAR) filed by NextEra Energy Seabrook, LLC (NextEra),² concerning the operating license for Seabrook Station, Unit 1 (Seabrook), located in Seabrook, New Hampshire. The

¹C-10 Research and Education Foundation, Inc. Petition for Leave to Intervene: Nuclear Regulatory Commission Docket No. 50-443 (Apr. 10, 2017) [hereinafter Petition].

²License 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, 1-3 of 73 (unnumbered) (Aug. 1, 2016) (ADAMS Accession No. ML16216A240). ML16216A240 is a 73-page PDF with unnumbered pages that also contains the following documents:

1. Affidavit in Support of Application for Withholding Proprietary Information from Public Disclosure, 4-5 of 73 (unnumbered) (Aug. 1, 2016);
2. SBK-L-16071 Enclosure 7, “NextEra Energy Seabrook’s Evaluation of the Proposed Change (Non-Proprietary),” 6-40 of 73 (unnumbered) (undated) [hereinafter Evaluation of Proposed Change];
3. SBK-L-16071 Enclosure 8, “Affidavit in Support of Application for Withholding Proprietary Information from Public Disclosure,” 41-42 of 73 (unnumbered) (undated);
4. Attachment 1, “Markup of UFSAR Pages,” 43-73 of 73 (unnumbered) (undated) [hereinafter Markup of UFSAR Pages].

These documents are enclosures to the LAR and are considered part of the LAR. For ease of access to citations, we will cite to all documents included in the LAR package with the identified name above and the page number out of 73 unnumbered pages.

LAR would revise the Unit 1 Updated Final Safety Analysis Report (UFSAR) to include methods for analyzing the impact of concrete degradation caused by an alkali-silica reaction (ASR) affecting Seismic Category I reinforced concrete structures³ (i.e., structures that are constructed of concrete that is reinforced with steel bars or rods called rebars).⁴

For the reasons set forth below, we conclude that C-10 has standing to intervene and we admit five of C-10's contentions. Because those contentions are closely related, we have combined them into one reformulated contention similar to that proposed by the Staff. C-10's remaining contentions are not admitted.

A. ASR and the Investigation of Its Effects at Seabrook

ASR is a chemical reaction in susceptible concrete that causes the concrete to expand in volume and potentially reduces the structural capacity of concrete structures.⁵ The presence of water promotes ASR. The reaction produces an alkali-silicate gel that expands as it absorbs moisture. The expansion exerts stress on the surrounding concrete and results in cracking.⁶ The LAR seeks to account for the effects of ASR in the design basis of Seismic Category I structures at Seabrook.

The expansion of concrete and resulting cracking caused by ASR can potentially impact both the material properties of a concrete structure and the load-bearing capacity of the structure.⁷ These material properties include: (1) compressive strength (maximum external force per unit area applied inwardly to the two end faces of a cylindrical sample before failure); (2) tensile strength

³ Seismic Category I structures, systems, and components include those necessary to control the release of radioactive material or otherwise mitigate the consequences of an accident. *See* Regulatory Guide RG 1.29, Seismic Design Classification for Nuclear Power Plants, Rev. 5 at 5 (July 2016) (ADAMS Accession No. ML1618A148).

⁴ Evaluation of Proposed Change at 7 of 73. The proprietary version of the Evaluation of Proposed Change is also Enclosure 1 to the LAR, but we cite to the non-proprietary version included in the LAR package. *See supra* note 2.

Appendix A to 10 C.F.R. Part 50, "General Design Criteria for Nuclear Power Plants," contains general design criteria (GDC) for nuclear power plants. GDC 2, "Design Bases for Protection Against Natural Phenomena," requires that nuclear power plant structures, systems, and components important to safety must be designed to withstand the effects of earthquakes and other natural phenomena without loss of capability to perform their safety functions. Structures that must remain functional in the event of a safe shutdown earthquake are referred to as "Category I structures." Regulatory Guide, 1.29, Rev. 5, at 5 (July 2016).

⁵ Evaluation of Proposed Change at 7 of 73.

⁶ *Id.* at 8 of 73.

⁷ *Id.*

(maximum external force per unit area applied outwardly to the two end faces of a cylindrical sample before failure); and (3) elastic modulus (measured in units of pressure as the ratio of the force per unit area applied to the two end faces of a cylindrical sample to its fractional change in length).⁸ Concrete expansion caused by ASR can also lead to deformation of a structure, and can cause stresses where the expansion is resisted internally by steel reinforcement or externally by supports, other structures, or adjoining parts of the same structure that are outside the ASR-affected region.⁹

NextEra initially identified pattern cracking typical of ASR at Seabrook in the “B” Electrical Tunnel in 2009, and, subsequently, in several other Seismic Category I structures.¹⁰ A root cause investigation into ASR at Seabrook concluded that the original concrete mix designs used a coarse aggregate that was susceptible to ASR. This, in combination with groundwater intrusion during plant life, appears to have resulted in the observed ASR in several Seabrook structures.¹¹

NextEra conducted an interim structural assessment in 2012, which evaluated the structural adequacy of reinforced concrete structures at Seabrook affected by ASR and system/component anchorages in ASR-affected concrete. The evaluation concluded that, given the extent of ASR identified at that time, the reinforced concrete structures at Seabrook remained suitable for continued service for an interim period. The evaluation noted that additional testing was required, and that the testing would produce the data necessary to assess fully the design compliance of the concrete structures at Seabrook.¹²

NextEra also assessed ASR-affected concrete to determine the impact on the operability of systems, structures, and components at Seabrook. Prompt operability determinations for the affected structures concluded that the structures and concrete anchors are operable but degraded, and structures, systems, and components housed within the structures are operable.¹³

At Seabrook, safety-related structures other than the containment were designed and constructed to comply with the 1971 edition of American Concrete Institute (ACI) Standard 318, *Building Code Requirements for Reinforced Concrete* (ACI 318-71).¹⁴ The containment structure was 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

⁸ *Id.* at 9 of 73.

⁹ *Id.*

¹⁰ *Id.* at 8 of 73.

¹¹ *Id.* at 9 of 73.

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.* at 12 of 73.

CC.¹⁵ Neither code contains methods to address the effects of ASR on the structural properties used in the design of concrete structures,¹⁶ and publicly available test data related to ASR effects on structures focus primarily on the science of ASR rather than the structural implications.¹⁷ NextEra therefore devised its own methodology. It concluded that “[I]oad testing of the as-built structures is impractical for the Seabrook Station ASR issue.”¹⁸ It thus decided to conduct a strength evaluation by analysis to demonstrate that, despite the effects of ASR, Seabrook structures “will have strength close to or in excess of that envisaged in the original design or as required by the code.”¹⁹

NextEra’s methodology is based on “large-scale test programs”²⁰ and its review of the existing technical literature.²¹ The large-scale test program involved testing concrete specimens constructed by MPR Associates — a consultant to NextEra — to reflect the structural characteristics of ASR-affected structures at Seabrook.²² The tests on those specimens were performed at the Ferguson Structural Engineering Laboratory (FSEL), part of the University of Texas at Austin. FSEL completed tests reflecting various levels of ASR cracking to assess the impact on selected “limit states,” where “limit state” is a condition of a structure beyond which it no longer fulfills the relevant design criteria.²³ These include “all relevant limit states except compression (i.e., flexure and reinforcement anchorage, shear, and anchor bolts and structural attachments to concrete).”²⁴ “The 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 large-scale test programs.”²⁵

The expansion of concrete from ASR increases the compressive stress in the concrete, and the additional compressive stress reduces the capacity of compression elements to react to external loads.²⁶ As mentioned above, the effect of ASR on compressive strength was not assessed in the large-scale test program.

¹⁵ *Id.* at 13 of 73.

¹⁶ *Id.* at 10 of 73.

¹⁷ *Id.* at 15 of 73.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ The LAR uses the terms “large-scale test programs” and “large-scale test program” interchangeably. *See e.g., id.* at 14 of 73. We will use the term “large-scale test program.” Some of the quotations in this order refer to the test program as the large-scale test programs, but all refer to the same test program performed by FSEL.

²¹ *Id.* at 9 of 73.

²² *Id.* at 14 of 73.

²³ *Id.* at 15 of 73.

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.* at 19 tbl.2 of 73.

Instead, that ASR effect was evaluated using existing data from published literature sources.²⁷ The evaluation concluded that ASR expansion in reinforced concrete results in a compressive load that should be combined with other loads already included in design calculations.²⁸ The LAR includes proposed modifications to Tables 3.8-1, 3.8-14, and 3.8-16 of the UFSAR to include the loads from ASR expansion in design calculations.²⁹ Those calculations, modified to include the loads from ASR expansion and other changes, will be used to determine whether (1) the containment continues to meet the acceptance criteria in the ASME Code and (2) the other safety-related structures continue to meet the acceptance criteria in ACI 318-71.³⁰

Although the specimens used in the large-scale test program experienced levels of ASR more severe than those found at Seabrook, “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.”³¹ 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 large-scale test program remain valid and that the level of ASR does not exceed that considered under the test programs.”³² The test program therefore identified methods for monitoring ASR.³³ LAR Table 4 and proposed UFSAR Table 3.8-18 provide ASR expansion limits that are intended to ensure that expansion will remain within the parameters validated by the large-scale test program results for Seabrook structures (i.e., that the assessed limit states are not reduced by ASR).³⁴ According to the LAR, the periodic monitoring of in-plane expansion in accordance with the frequencies in LAR Table 5 will ensure that NextEra can take “appropriate action” before the ASR expansion criteria are exceeded.³⁵

NextEra’s proposed methodology for analyzing the effects of ASR and monitoring ASR in concrete structures at Seabrook is the basis for the LAR at issue in this proceeding.

B. The Petition to Intervene and Responses

On February 7, 2017, the NRC published a *Federal Register* notice of oppor-

²⁷ *Id.* at 16 of 73.

²⁸ *Id.* at 19 tbl.2 of 73.

²⁹ Markup of UFSAR Pages at 69-71 of 73.

³⁰ Evaluation of Proposed Change at 36 of 73.

³¹ *Id.* at 16 of 73.

³² *Id.*

³³ The specific monitoring methods are discussed *infra* Part IV.A.2.a at p. 93.

³⁴ Evaluation of Proposed Change at 16, 31 tbl.4 of 73.

³⁵ *Id.* at 32 of 73.

tunity to request a hearing on the LAR.³⁶ 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).³⁷ On April 10, C-10 timely filed a petition to intervene in this proceeding, including ten proposed contentions.³⁸ C-10, which has been shortened from the organization’s original name, “Citizens Within the 10-Mile Radius (of Seabrook Station),” is a nonprofit 501(c)(3) membership organization with the mission to protect public health and the environment surrounding Seabrook Station.³⁹ On May 5, the Staff and NextEra filed answers to the Petition.⁴⁰ Both the Staff and NextEra argued that the Petition failed to demonstrate standing and should be denied.⁴¹ NextEra further argued that C-10 failed to submit an admissible contention.⁴² The Staff argued that, while none of C-10’s contentions were independently admissible, portions of certain contentions could be combined to produce one admissible contention challenging the representativeness of the testing that serves as a basis for the LAR. The Staff maintains that C-10’s remaining contentions are inadmissible.⁴³

On May 12, C-10 submitted a reply to the Staff’s and NextEra’s answers.⁴⁴ On May 22, the Staff filed a motion to strike portions of C-10’s Reply, arguing that the Reply provided “entirely new details and standing arguments,” and therefore should not be considered by the Board.⁴⁵

Also on May 12, NextEra filed a motion seeking leave to reply to the Staff’s Answer to the Petition, claiming that the Staff had impermissibly proposed that

³⁶ 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. 9601, 9604 (Feb. 7, 2017).

³⁷ *Id.*

³⁸ See Petition at 1.

³⁹ C-10 Research and Education Foundation, Inc. Response to U.S. NRC Staff’s Answer to C-10 Foundation’s Petition for Leave to Intervene: Nuclear Regulatory Commission Docket No. 50-443 at 2 (May 12, 2017) [hereinafter C-10’s Reply].

⁴⁰ NRC Staff’s Answer to C-10 Research and Education Foundation, Inc. Petition for Leave to Intervene (May 5, 2017) [hereinafter Staff’s Ans. to Petition]; NextEra’s Answer Opposing C-10 Research & Education Foundation’s Petition for Leave to Intervene and Hearing Request on NextEra Energy Seabrook, LLC’s License Amendment Request 16-03 (May 5, 2017) [hereinafter NextEra’s Ans. to Petition].

⁴¹ Staff’s Ans. to Petition at 14; NextEra’s Ans. to Petition at 13-15.

⁴² NextEra’s Ans. to Petition at 16.

⁴³ Staff’s Ans. to Petition at 26.

⁴⁴ C-10’s Reply.

⁴⁵ NRC Staff Motion to Strike Portions of C-10’s Reply (May 22, 2017) at 1 [hereinafter Staff’s Motion to Strike]. The Motion was accompanied by an attachment showing proposed portions of C-10’s Reply to be stricken. Staff’s Motion to Strike, Attachment A, Redline Strike-Out Excerpts of C-10’s Reply (May 22, 2017).

the Board admit a “New/Amended Contention” consisting of various contentions or parts thereof from C-10’s petition that are not independently admissible.⁴⁶ Neither the Staff nor C-10 opposed NextEra’s Motion for Leave.⁴⁷ NextEra filed its Reply together with the Motion for Leave to Reply.⁴⁸ On May 26, the Board granted NextEra’s Motion and also ordered the Staff and C-10 to file any response to the new arguments raised by NextEra within 10 days, accompanied by a motion seeking leave to file any such response.⁴⁹ On June 5, the Staff timely filed an unopposed motion for leave to respond to NextEra’s Reply,⁵⁰ accompanied by the Staff’s response (labeled the Staff’s “Sur-Reply”).⁵¹ The Board granted the Staff’s Motion for Leave to Sur-Reply on June 6.⁵²

On June 29, 2017, the Board heard oral argument from representatives for C-10, the Staff, and NextEra on standing and contention admissibility regarding C-10’s Petition.⁵³ During the argument, the Staff stated that it plans to decide whether to grant the LAR “towards the fall of 2018.”⁵⁴

II. STANDING

Under section 189a of the Atomic Energy Act, the NRC is required to grant a hearing in a license amendment proceeding “upon the request of any person whose interest may be affected by the proceeding.”⁵⁵ A hearing request will be granted if the petitioner meets the standing requirements of 10 C.F.R. § 2.309(d), which states that the petitioner’s hearing request must contain:

- (i) The name, address and telephone number of the requestor or petitioner;

⁴⁶ NextEra’s Motion for Leave to File a Reply to NRC Staff’s Answer to C-10’s Petition for Leave to Intervene at 1-2 (May 12, 2017).

⁴⁷ *Id.* at 5.

⁴⁸ NextEra’s Reply to NRC Staff’s Answer to C-10’s Petition for Leave to Intervene (May 12, 2017) [hereinafter NextEra’s Reply to Staff’s Ans.].

⁴⁹ Licensing Board Order (Granting NextEra’s Motion to File a Reply) at 2 (May 26, 2017) (unpublished).

⁵⁰ NRC Staff’s Motion for Leave to File a Sur-Reply to NextEra’s Reply to NRC Staff’s Answer to C-10’s Petition for Leave to Intervene (June 5, 2017). C-10 did not file a response to NextEra’s Reply.

⁵¹ NRC Staff’s Sur-Reply to NextEra’s Reply to NRC Staff’s Answer to C-10’s Petition for Leave to Intervene (June 5, 2017) [hereinafter Staff’s Sur-Reply].

⁵² Licensing Board Order (Granting NRC Staff’s Motion to File a Reply to NextEra’s Response) at 2 (June 7, 2017) (unpublished).

⁵³ *See* Tr. at 4; Licensing Board Order (Scheduling Oral Argument and Providing Instructions) (June 5, 2017) (unpublished).

⁵⁴ Tr. at 60.

⁵⁵ 42 U.S.C. § 2239(a)(1)(A) (2017).

- (ii) The nature of the requestor's/petitioner's right under the [Atomic Energy Act or National Environmental Policy Act] 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.⁵⁶

In determining whether a petitioner has the requisite interest to satisfy these requirements, the Commission has long applied contemporaneous judicial concepts of standing, requiring a showing of a “concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision.”⁵⁷

When an organization such as C-10 seeks to intervene, it may establish standing either in its own right or as a representative for an individual.⁵⁸ To intervene in its own right, an organization must satisfy the same standing requirements of injury, traceability, and redressability as an individual seeking to intervene.⁵⁹ Alternatively, an organization may intervene based on the interests, germane to the purpose of the organization, of a member or members injured by the proposed actions.⁶⁰ Associational standing, generally referred to as representational standing, requires that at least one injured member authorize the organization to represent the member's interests.⁶¹

In operating license or construction permit proceedings, the Commission has additionally adopted a proximity presumption that allows an individual or group

⁵⁶ 10 C.F.R. § 2.309(d)(1).

⁵⁷ *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993) (citing *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 561 (1992)); *see, e.g., Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 195 (1998); *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995).

⁵⁸ *E.g., Yankee Nuclear*, CLI-98-21, 48 NRC at 195; *Ga. Tech.*, CLI-95-12, 42 NRC at 115.

⁵⁹ *Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 411 (2007) (citing *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 528, *aff'd in relevant part*, CLI-91-13, 34 NRC 185, 187-88 (1991)).

⁶⁰ *See Hunt v. Washington State Apple Advert. Comm'n*, 432 U.S. 333, 343 (1977); *Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 258-59 (2008).

⁶¹ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999).

living,⁶² having frequent contacts,⁶³ or having a significant property interest⁶⁴ within 50 miles of a nuclear power reactor to establish standing without the need to make an individualized showing of injury, causation, and redressability.⁶⁵ “The presumption rests on our 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.”⁶⁶ An organization, like an individual, is entitled to the benefit of the presumption when it applies because “an organization, like an individual, is considered a ‘person’ as we have defined that word in 10 C.F.R. § 2.4 and as we have used it in 10 C.F.R. § 2.309 regarding standing.”⁶⁷ Thus, in deciding standing, “[r]egardless of whether the petitioner seeking to intervene is an individual or an organization, the same showing is required.”⁶⁸

The petitioner has the burden to show that the proximity presumption should apply.⁶⁹ In a license amendment case, “a petitioner cannot base his or her standing simply upon a residence or visits near the plant, unless the proposed action quite ‘obvious[ly]’ entails an increased potential for offsite consequences.”⁷⁰ In such a case, “[w]hether and at what distance a petitioner can be presumed to be affected must be judged on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source.”⁷¹

⁶² *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989) (“[L]iving within a specific distance from the plant is enough to confer standing on an individual or group in proceedings for construction permits, operating licenses, or significant amendments thereto . . .”).

⁶³ *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 (1994) (stating that the proximity presumption also applies to “persons who have frequent contacts in the area near a nuclear power plant.”).

⁶⁴ *USEC Inc.* (American Centrifuge Plant), CLI-05-11, 61 NRC 309, 314 (2005).

⁶⁵ *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, 915-17 (2009).

⁶⁶ *Id.* 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)).

⁶⁷ *Palisades*, CLI-07-18, 65 NRC at 411. The Staff acknowledged that the proximity presumption could apply to an organization. See Staff’s Ans. to Petition at 21-22; Tr. at 63-65 (“It is potentially a fair reading of the regulation [B]ecause the regulations do . . . account for corporations being treated as [a] person . . .”).

⁶⁸ *Turkey Point*, ALAB-952, 33 NRC at 529.

⁶⁹ *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).

⁷⁰ *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 191 (1999) (alteration in original) (rejecting proximity presumption argument in license amendment proceeding due to plant’s shutdown and defueled status).

⁷¹ *Ga. Tech.*, CLI-95-12, 42 NRC at 116-17; accord *Peach Bottom*, CLI-05-26, 62 NRC at 580
(Continued)

Standing is a threshold legal question, however, that does not require an assessment of the petitioner's case on the merits.⁷² At the pleading stage, "it is generally sufficient if the petitioner provides plausible factual allegations that satisfy each element of standing,"⁷³ and the Board must accept as true all material allegations of the Petition.⁷⁴ In deciding standing, we do not decide the admissibility or merits of the petitioner's contentions. The Commission has identified a clear distinction between standing and the ultimate merits of a proposed contention, concluding that a "full-blown factual inquiry" is not required for the "threshold legal question" of standing.⁷⁵ The Commission has adopted the "often-repeated admonition to avoid the familiar trap of confusing the standing determination with the assessment of petitioner's case on the merits."⁷⁶ It follows "the fundamental principle that the ultimate merits of the case have no bearing on the threshold question of standing."⁷⁷

("In ruling on claims of 'proximity standing,' we decide the appropriate radius on a case-by-case basis.").

⁷² See *Sequoyah Fuels Corp.* (Gore, Oklahoma Site Decommissioning), CLI-01-2, 53 NRC 9, 15 (2001).

⁷³ *U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island of Hawaii, Haw.), LBP-10-4, 71 NRC 216, 229-30 (2010) (citing *Lujan*, 504 U.S. at 561), *aff'd*, CLI-10-20, 72 NRC 185 (2010); see also *Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), LBP-12-3, 75 NRC 164, 177 (2012) (referencing "plausible factual allegations" standard).

⁷⁴ *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 286 (1995) (citing *Warth v. Seldin*, 422 U.S. 490, 501 (1975), and *Kelly v. Selin*, 42 F.3d 1501, 1507-08 (6th Cir. 1995)), *aff'd*, CLI-95-12, 42 NRC 111 (1995).

⁷⁵ *Sequoyah*, CLI-01-2, 53 NRC at 15; see also *Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-07-14, 66 NRC 169, 188 (2007) ("Petitioners are not required to demonstrate their asserted injury with 'certainty,' nor to 'provide extensive technical studies' in support of their standing argument. Resolving standing questions is an entirely different matter than adjudicating the ultimate merits of a contention." (citation omitted)). The Supreme Court has made clear that "when considering whether a plaintiff has Article III standing, a federal court must assume *arguendo* the merits of his or her legal claim." *Parker v. District of Columbia*, 478 F.3d 370, 377 (D.C. Cir. 2007), *aff'd sub nom. District of Columbia v. Heller*, 554 U.S. 570 (2008) (citing *Warth v. Seldin*, 422 U.S. at 501-02); see also *Sierra Club v. EPA*, 292 F.3d 895, 898-99 (D.C. Cir. 2002).

⁷⁶ *Sequoyah Fuels*, CLI-01-2, 53 NRC at 15 (quoting *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site Decontamination and Decommissioning Funding), LBP-94-5, 39 NRC 54, 68 (1994), *aff'd*, CLI-94-12, 40 NRC 64 (1994)).

⁷⁷ *Id.* (quoting *Campbell v. Minneapolis Pub. Hous. Auth.*, 168 F.3d 1069, 1074 (8th Cir. 1999)); see also *Blackhawk Heating & Plumbing Co. v. Driver*, 433 F.2d 1137, 1140 (D.C. Cir. 1970) ("[T]he question of standing is a preliminary matter which does not go to the merits of the case."). Thus, "[a]t the pleading stage, 'general factual allegations of injury resulting from the defendant's conduct may suffice,' and the court 'presum[es] that general allegations embrace the specific facts that are necessary to support the claim.'" *Sierra Club*, 292 F.3d at 898-99 (quoting *Lujan*, 504 U.S. at 561).

The Commission has also ruled that licensing boards should “construe the petition in favor of the petitioner” when evaluating whether a petitioner has met its burden to establish standing.⁷⁸ Additionally, “*pro se* petitioners are held to less rigid pleading standards, so that parties with a clear — but imperfectly stated — interest in the proceeding are not excluded.”⁷⁹ In this case, the Petition did not expressly refer to either organizational standing or representational standing, but, as detailed below, C-10 provided sufficient factual information for the Board to evaluate C-10’s standing under both those bases. In its Reply, C-10 confirmed that it claims both organizational standing and representational standing.⁸⁰ We consider both grounds for C-10’s standing below.

A. Organizational Standing

1. Organizational Standing Under the Proximity Presumption

As discussed above, in license amendment proceedings, the standing requirements can be satisfied through the proximity presumption if there is an obvious potential for offsite consequences, and the petitioner lives, has frequent contacts, or owns property within an appropriate radius of the nuclear power plant. Without this potential for offsite consequences, “the standing inquiry reverts to the traditional standing analysis.”⁸¹

The Staff argues that C-10 fails to satisfy the proximity presumption despite the location of its office within 10 miles of the Seabrook plant because it “never factually alleges an obvious potential for offsite radiological consequences to itself,” instead alleging such consequences only “to the public” and failing to “attempt to explain how [its] activities would be affected by the Seabrook LAR.”⁸² At oral argument, the Staff clarified its position “that this license amendment is not going to result in an obvious potential for offsite consequences” because “the concrete . . . is not being proposed to be modified in any way. The actual analysis of record that is being applied to the concrete is remaining the same

⁷⁸ *Ga. Tech.*, CLI-95-12, 42 NRC at 115.

⁷⁹ *U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island of Hawaii, Haw.), CLI-10-20, 72 NRC 185, 192 (2010); *accord Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 394 (2015) (“While we generally place ‘[t]he burden of setting forth a clear and coherent argument for standing’ on the petitioner, we do not hold CASE, a *pro se* petitioner, to the same ‘standards of clarity and precision to which a lawyer might reasonably be expected to adhere.’” (footnotes omitted)).

⁸⁰ C-10’s Reply at 4. The Staff filed a motion to strike certain portions of C-10’s Reply. *See supra* Part I.B at p. 72. The Staff, however, did not move to strike C-10’s claim of both organizational standing and representational standing. *See Staff’s Motion to Strike*, Attachment A at 4.

⁸¹ Staff’s Ans. to Petition at 13-14.

⁸² *Id.* at 19, 21.

and . . . all NextEra is attempting to do is provide sufficient technical analysis” to demonstrate that they can analyze ASR.⁸³ NextEra argues more strictly that “Petitioner’s failure to provide physical addresses for any members precludes the Board from evaluating the proximity presumption’s potential applicability.”⁸⁴

The Board disagrees. The requirement to provide affidavits from individual members applies when the organization asserts standing to represent the interests of those members.⁸⁵ An organization, however, can establish standing in its own right under the proximity presumption.⁸⁶ We conclude that C-10 has provided sufficient facts to demonstrate that the presumption applies.

An office location, as well as a residence, may serve as the basis of standing under the presumption.⁸⁷ The Petition provides the address of C-10’s office, which is located within the 10-mile plume exposure pathway Emergency Planning Zone (EPZ) for Seabrook.⁸⁸ C-10’s executive director, Ms. Natalie Treat, works at the office.⁸⁹ The Staff does not dispute that C-10’s office is located within 10 miles of the Seabrook plant.⁹⁰ We will therefore decide C-10’s standing under the proximity presumption based on that location.

We next must determine whether the Petition alleges an obvious potential for offsite consequences if the LAR is granted. The LAR applies to concrete in Seismic Category I structures, which include those Seabrook structures necessary to control the release of radioactive material or otherwise mitigate the consequences of an accident.⁹¹ Among the Seabrook Category I structures affected by ASR is the containment structure, the purpose of which is to confine radiation and fission products that might otherwise be released to the atmosphere in the event of an accident. Moreover, the Staff reports that there are twenty-six Seismic Category I concrete structures at Seabrook that are or could be affected

⁸³ Tr. at 63.

⁸⁴ NextEra’s Ans. to Petition at 15.

⁸⁵ *Palisades*, CLI-07-18, 65 NRC at 409-10.

⁸⁶ See *supra* Part II at pp. 74-75.

⁸⁷ *Ga. Tech.*, LBP-95-6, 41 NRC at 286-87, *aff’d*, CLI-95-12, 42 NRC at 115-17.

⁸⁸ Petition at 1. The Staff explains that under 10 C.F.R. § 50.33(g),

“[t]he exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries”; however, “[g]enerally, the plume exposure pathway EPZ for nuclear power reactors shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius.”

Staff’s Ans. to Petition at 21 n.98.

⁸⁹ See Petition at 1, 17; C-10’s Reply at 2.

⁹⁰ Tr. at 66.

⁹¹ See Regulatory Guide, 1.29, Rev. 5, at 5 (July 2016).

by ASR.⁹² In order to ensure safe operation, those safety-related structures must be able to withstand an earthquake and other natural disasters within the design basis of the plant.⁹³

C-10 contends, however, that the LAR would “allow[] NextEra to continue to operate Seabrook Station’s nuclear reactor with no way to adequately remedy the plant’s deteriorating concrete.”⁹⁴ The Petition is particularly concerned with the impact of ASR on Seabrook’s safety-related structures.⁹⁵ C-10 argues that the LAR does “not provide for accurate assessment of the current, actual, physical condition of the concrete structural components of Seabrook Station[,] [and b]y logical extension . . . does not provide for the accurate assessment of [ASR] on the plant structures going forward.”⁹⁶ The Petition includes contentions, supported by expert opinion, alleging that: (1) the LAR’s monitoring program lacks sufficient tools for determining the presence and extent of ASR in safety-related structures at Seabrook; (2) the LAR ignores the potential for microcracking in reinforced concrete and the resulting abrupt loss of mechanical properties; (3) the large-scale test program on which the LAR is based yielded data that are not representative of the progression of ASR at Seabrook, and therefore it fails to support the LAR’s proposed methodology; and (4) the LAR’s monitoring intervals are too long and too fixed to effectively measure the ongoing effects of ASR on Seabrook Category I structures.⁹⁷ C-10 contends that “[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.”⁹⁸ The decision not to require the testing C-10 argues for, “especially for safety-related structures,” leaves NRC inspectors and surrounding communities with an “incomplete picture of the actual state of concrete degradation, and could endanger the public health and safety.”⁹⁹

If C-10’s arguments are valid, granting the LAR would allow the plant to continue to operate without adequate methods to detect unacceptable levels of ASR-induced degradation of Seismic Category I structures. This would put the plant and the surrounding population at risk in the event of a design-basis event because those structures may not be able to perform their safety-related functions. As C-10 puts it, “it is obvious that a protocol for strength analysis of

⁹² Tr. at 85.

⁹³ 10 C.F.R. pt. 50, app. A (Criterion 2).

⁹⁴ Petition at 1.

⁹⁵ *See id.* at 3, 6, 8, 9, 12, 17.

⁹⁶ *Id.* at 2.

⁹⁷ *Id.* at 3, 5, 8, 15.

⁹⁸ *Id.* at 5.

⁹⁹ *Id.* at 6.

concrete that misrepresents the extent of degradation due to ASR attack could lead to catastrophic airborne and/or waterborne radioactive releases.”¹⁰⁰

The Commission and licensing boards have found an obvious potential for offsite consequences where the risk was less compelling. For example, in a case involving the relicensing of a research reactor, the Commission determined that the petitioner had standing under the proximity presumption despite the licensee’s argument that the hypothetical accident scenarios underlying the standing argument were “incredible” because they would “first require three independent redundant safety systems to fail.”¹⁰¹ Similarly, licensing boards have found standing in cases where the proximity presumption was based on “unlikely” but plausible risk scenarios.¹⁰² The Board therefore finds that C-10’s allegations adequately demonstrate an obvious potential for offsite harm if the LAR is granted.

We are unpersuaded by the Staff’s argument that there is no potential for offsite consequences because the plant will have to shut down if an unacceptable level of concrete degradation is reached.¹⁰³ This argument assumes that the LAR’s reliance on the results of the large-scale test program, including its monitoring program, monitoring intervals, and criteria for determining an acceptable level of concrete deterioration, provides an adequate methodology for detecting unacceptable levels of ASR advancement in Seabrook Category I structures. But the Petition contests all those aspects of the LAR. If C-10 is correct, the plant may in fact continue to operate even after an unacceptable level of concrete degradation is reached. As explained, our ruling on standing is not the point at which we resolve disputes that go to the merits of a petitioner’s contentions. It is sufficient that C-10 has identified “some ‘plausible chain of causation,’ some scenario suggesting how [the] particular license amendments would result in a distinct new harm or threat” to the petitioner.¹⁰⁴

We are also not persuaded by the Staff’s argument that the LAR does not create a potential for offsite consequences because the concrete itself will not be physically changed as the result of the license amendment. It is clear from the LAR itself that Seabrook concrete has changed as a result of ASR and

¹⁰⁰ C-10’s Reply at 3. The Staff’s Motion to Strike did not ask the Board to strike this statement. Staff’s Motion to Strike, Attachment A at 3.

¹⁰¹ See *Ga. Tech.*, CLI-95-12, 42 NRC at 117.

¹⁰² See *MOX Servs.*, LBP-07-14, 66 NRC at 187-88 (concluding based on “the Application and the Board’s own technical expertise” that nuclear criticality was a “legitimate concern” in the context of license to operate a mixed oxide fuel fabrication facility); *CFC Logistics, Inc.*, LBP-03-20, 58 NRC 311, 320 (2003) (identifying an “unlikely, yet plausible, scenario in which an accident of some sort could damage the armored pool containing the cobalt-60 at the [food processing irradiator] facility”).

¹⁰³ Tr. at 72-73.

¹⁰⁴ *Zion*, CLI-99-4, 49 NRC at 192.

that further ASR-induced degradation is expected to occur. C-10 maintains that the LAR fails to provide a methodology adequate to assess both the changes to Seabrook concrete that have occurred and the future changes that may result from the continuing effects of ASR. That alleged deficiency is sufficient to establish an obvious potential for offsite consequences. The Commission and licensing boards have upheld application of the proximity presumption in cases that did not involve new construction or the replacement of existing structures. For example, the Commission determined that the proximity presumption applied even though the challenged license amendment affected only the petitioner's right to request a hearing on any changes to the material specimen testing schedule that might be proposed at some future date.¹⁰⁵ Also, in a case involving the relicensing of a research reactor that did not involve new construction, the Commission determined that the petitioner had standing under the proximity presumption.¹⁰⁶ When the Commission has found no obvious potential for offsite consequences, it was because there were no changes to "the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel."¹⁰⁷ Thus, the Commission has rejected proximity standing for license transfers,¹⁰⁸ license amendments associated with shutdown and defueled reactors,¹⁰⁹ and certain changes to worker-protection requirements.¹¹⁰ Here, however, the proposed amendment provides a methodology and procedures for determining whether Seismic Category I structures are able to perform their safety-related functions. Thus, the LAR has significant implications for the safety of the plant and the nearby population.

In ruling on proximity standing, we must also decide whether C-10 is located within an appropriate radius of the Seabrook plant, "taking into account the nature of the proposed action and the significance of the radioactive source."¹¹¹ The Petition provides the address of its office, located within the 10-mile plume exposure pathway EPZ for Seabrook.¹¹² The radioactive source, an operating nuclear power reactor and spent fuel storage site, is significant, and the nature of the proposed action, a license amendment that would allow continuing reactor operations despite the acknowledged potential for ASR advancement, creates a

¹⁰⁵ *Perry*, CLI-93-21, 38 NRC at 90-96.

¹⁰⁶ *See Ga. Tech.*, CLI-95-12, 42 NRC at 116-17.

¹⁰⁷ *See Peach Bottom*, CLI-05-26, 62 NRC at 582 (stating that the license transfer did not implicate these concerns).

¹⁰⁸ *Id.* at 581.

¹⁰⁹ *Zion*, CLI-99-4, 49 NRC at 191.

¹¹⁰ *St. Lucie*, CLI-89-21, 30 NRC at 329-30.

¹¹¹ *Peach Bottom*, CLI-05-26, 62 NRC at 580-81 (quoting *Ga. Tech.*, CLI-95-12, 42 NRC at 116-17).

¹¹² Petition at 1, 17.

potential for offsite consequences that would likely affect the geographic area in which C-10's office is located.¹¹³

The Staff argues that C-10 does not satisfy the proximity presumption because it “never factually alleges an obvious potential for offsite radiological consequences to itself.”¹¹⁴ We reject this argument because it confuses the showing required under the proximity presumption of standing with that required under the traditional test for standing. The traditional test requires that the petitioner make a particularized showing of injury-in-fact caused by the challenged action.¹¹⁵ By contrast, under the proximity presumption “a petitioner need not expressly ‘establish the [traditional] standing elements of injury, causation or redressability.’”¹¹⁶ Instead, proximity standing “rests on the presumption that an accident associated with the nuclear facility could adversely affect the health and safety of people working or living offsite but within a certain distance of that facility.”¹¹⁷ As previously noted, an organization, like an individual, is considered a “person” for the purpose of determining standing under 10 C.F.R. § 2.309.¹¹⁸

The first element of proximity standing in license amendment cases, the obvious potential for offsite consequences, requires that “the kind of action at issue, when considered in light of the radioactive sources at the plant, justifies a presumption that the licensing action ‘could plausibly lead to the offsite release of radioactive fission products from . . . the . . . reactors.’”¹¹⁹ The Staff criticizes the Petition because it “only” alleges offsite radiological consequences to the public, including “‘potentially disastrous [safety] consequences’ to the ‘surrounding communities’ posed by the ‘radioactive substances contained within the [containment structures and spent fuel pool] walls.’”¹²⁰ In fact, such alle-

¹¹³ See, e.g., *Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 18-19 (2007) (finding that an extended power uprate “directly associated with continuing reactor operations” was an action similar to that which supports a 50-mile presumption in operating license proceedings); see also *Zion*, CLI-99-4, 49 NRC at 191 (finding that because the reactor units were “shutdown and defueled,” a license amendment relating to that defueled status did not show obvious danger of offsite consequences).

¹¹⁴ Staff’s Ans. to Petition at 21.

¹¹⁵ *Calvert Cliffs*, CLI-09-20, 70 NRC at 915.

¹¹⁶ *Peach Bottom*, CLI-05-26, 62 NRC at 580 (quoting *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 150, *aff’d*, CLI-01-17, 54 NRC 3 (2001)).

¹¹⁷ *Id.*

¹¹⁸ *Palisades*, CLI-07-18, 65 NRC at 411.

¹¹⁹ *Id.* at 581 (quoting *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), LBP-98-27, 48 NRC 271, 277 (1998), *aff’d*, CLI-99-4, 49 NRC 185 (1999), petition for review denied; *Dienethal v. NRC*, 203 F.3d 52 (D.C. Cir. 2000)).

¹²⁰ Staff’s Ans. to Petition at 21-22 (quoting Petition at 1-2, 6, 8).

gations are plainly sufficient to establish the obvious potential for radiological consequences. The likelihood that an offsite release of radioactive fission products will impact the petitioner is evaluated under the second element of proximity standing, which, as just explained, requires that the petitioner’s location or sufficient contacts be within an appropriate radius of the nuclear power plant.¹²¹ In this case, C-10 has provided sufficient allegations to show the obvious potential for offsite consequences, and the location of C-10’s office within the 10-mile plume exposure pathway EPZ for Seabrook means that it would “‘face a realistic threat of harm’ if a release from the facility of radioactive material were to occur.”¹²² By satisfying the elements of the proximity presumption, C-10 has shown the threat of “radiological consequences to itself.”¹²³ In arguing that C-10 must make a further demonstration of injury to itself, the Staff is attempting to require C-10 to satisfy the traditional test for standing in addition to the requirements of the proximity presumption. But that is precisely what the Commission has held is not required.¹²⁴

2. *Organizational Standing Under the Traditional Test*

Even if the proximity presumption does not apply, C-10 satisfies the traditional elements necessary to demonstrate organizational standing. The Petition alleges a concrete injury to an organizational interest. To claim such an injury, “an organization must allege that the defendant’s conduct ‘perceptibly impaired’ the organization’s ability to provide services in order to establish injury in fact.”¹²⁵ “An organization’s ability to provide services has been perceptibly impaired when the defendant’s conduct causes an ‘inhibition of [the organization’s] daily operations.’”¹²⁶ However, “frustration of an organization’s objectives ‘is the type of abstract concern that does not impart standing.’”¹²⁷

While the Petition does make reference to a more generalized organizational “vision” of “a clean, safe, sustainable energy future” and its concerns that the LAR “could put the public at serious risk,” it also describes C-10’s very specific organizational functions and services.¹²⁸ C-10 is not merely a nuclear watchdog

¹²¹ *Peach Bottom*, CLI-05-26, 62 NRC at 580 (quoting *Ga. Tech.*, CLI-95-12, 42 NRC at 116-17).

¹²² *Calvert Cliffs*, CLI-09-20, 70 NRC at 917 (quoting *Calvert Cliffs*, LBP-09-4, 69 NRC 170 at 183).

¹²³ Staff’s Ans. to Petition at 22.

¹²⁴ *Calvert Cliffs*, CLI-09-20, 70 NRC at 915; *Peach Bottom*, CLI-05-26, 62 NRC at 580.

¹²⁵ *Turlock Irrigation Dist. v. FERC*, 786 F.3d 18, 24 (D.C. Cir. 2015).

¹²⁶ *Food & Water Watch, Inc. v. Vilsack*, 808 F.3d 905, 919 (D.C. Cir. 2015) (alteration in original) (quoting *People for the Ethical Treatment of Animals v. USDA*, 797 F.3d 1087, 1094 (2015)).

¹²⁷ *Id.* (quoting *Nat’l Taxpayers Union, Inc. v. United States*, 68 F.3d 1428, 1433 (D.C. Cir. 1995)).

¹²⁸ Petition at 1.

or general environmental group; it is an organization focused on the safe operation of the Seabrook plant, and only that plant.¹²⁹ It maintains and operates “a field monitoring network to measure real-time radiological emissions from the plant, under contract with the Massachusetts Department of Public Health’s Bureau of Environmental Health.”¹³⁰ Its “more than 700 members” include an “overwhelming majority” who live within 10 miles of Seabrook.¹³¹ The Petition also provides the address of C-10’s office,¹³² which is located within the 10-mile plume exposure EPZ for Seabrook.

Assuming for the purposes of standing that C-10’s allegations concerning the deficiencies in the LAR are correct, an accident within the design basis has the potential to injure C-10 as an organization. As the Staff acknowledged, such a nuclear accident could impact C-10’s office, potentially requiring that it be evacuated.¹³³ The Staff suggested that C-10’s activities such as monitoring, education, and providing information to the public could still be performed even if the office had to be evacuated.¹³⁴ It is likely, however, that those activities would be “perceptibly impaired”¹³⁵ if a radiological release from Seabrook made C-10’s office unsafe or inaccessible. That is sufficient to show a realistic threat of injury to the organization’s activities because, under judicially recognized concepts of standing, “[t]he magnitude, as distinct from the directness, of the injury is not critical to the concerns that underlie the requirement of standing.”¹³⁶

Moreover, a radiological release from Seabrook would also likely impact the organization’s “core service,” operating a network of monitoring stations in the vicinity of Seabrook.¹³⁷ In the event of a radiological release from Seabrook, C-10 could be prevented from providing those services for which it is under contract with the State of Massachusetts because “it could become impossible to visit crucial C-10 monitoring sites to perform needed maintenance and repairs, without suffering the consequences of radiation exposure.”¹³⁸

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ C-10’s Reply at 2. The Staff filed a motion to strike certain portions of C-10’s Reply. *See supra* Part I.B at p. 72. However, this statement by C-10 was not included in the portions the Staff sought to strike.

¹³² Petition at 17.

¹³³ Tr. at 71.

¹³⁴ *Id.*

¹³⁵ *Turlock Irrigation Dist.*, 786 F.3d at 24.

¹³⁶ *Am. Bottom Conservancy v. U.S. Army Corps of Eng’rs*, 650 F.3d 652, 656 (7th Cir. 2011); *see also LaFleur v. Whitman*, 300 F.3d 256, 270-71 (2d Cir. 2002); *Sierra Club v. Cedar Point Oil Co., Inc.*, 73 F.3d 546, 557 (5th Cir. 1996); *Conservation Council of North Carolina v. Costanzo*, 505 F.2d 498, 501 (4th Cir. 1974).

¹³⁷ Petition at 1.

¹³⁸ C-10’s Reply at 3.

We therefore conclude that C-10 has demonstrated a risk of organizational injury in the event of a nuclear accident at Seabrook resulting from the ongoing effects of ASR. The requested amendment of Seabrook's license to allow continued operation given the facility's current condition creates the potential for injury to C-10 as an organization. The details of that amendment are based on testing that C-10 alleges is not representative of Seabrook concrete and is therefore inadequate to account for ASR degradation at Seabrook. Denial of the LAR would redress C-10's injury as an organization. Having demonstrated injury, traceability, and redressability, C-10 satisfies the requirements of the traditional standing analysis.

B. Representational Standing

Although we have concluded that C-10 has organizational standing, we will briefly review the argument that it also has representational standing.¹³⁹

The Commission recognizes "that not even *inherently* representative organizations qualify for automatic standing, but that they must instead satisfy certain requirements before being permitted to represent others."¹⁴⁰ The Commission generally requires evidence that an organization has been authorized to represent one or more of its members.¹⁴¹ In most cases an organization claiming representational standing must provide an affidavit specifically authorizing the organization to represent the interests of a named member.¹⁴² Both the Staff and NextEra argue that C-10 failed to identify a specific member with standing to intervene that has authorized C-10 to represent his or her interests in a hearing.¹⁴³ Therefore, they assert that C-10 cannot claim representation standing.¹⁴⁴

¹³⁹ *Id.* at 4.

¹⁴⁰ *Palisades*, CLI-08-19, 68 NRC at 264.

¹⁴¹ *See, e.g., GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 202 (2000) ("[A]n organization seeking representation standing . . . must show (preferably by affidavit) that the organization is authorized to request a hearing on behalf of that member.").

¹⁴² *Compare id., with Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 396 (1979) ("This does not mean that, in the case of all organizations, there need be supplied a specific representational authorization of a member with personal standing. To the contrary, in some instances the authorization might be presumed."), and *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-536, 9 NRC 402, 404-05 n.2 (1979) ("[W]e reject the argument . . . that [an organization is] required to produce a specific authorization to represent the interests of at least one of its members shown to possess personal standing. To be sure, such an authorization is normally an ingredient of a demonstration of representational standing. But the authorization may be presumed in the case of members of organizations . . ." (citation omitted)).

¹⁴³ *See* Staff's Ans. to Petition at 14; NextEra's Ans. to Petition at 14.

¹⁴⁴ Staff's Ans. to Petition at 14; NextEra's Ans. to Petition at 14.

However, it has been enough ““for standing purposes that the petition had been signed by a ranking official of the organization who himself had the requisite personal interest to support an intervention petition.””¹⁴⁵ Ms. Natalie Treat signed C-10’s Petition as the Executive Director of C-10, which shows that she is a ranking official of the organization. In order to uphold standing on this ground, we must find that Ms. Treat herself meets the standing requirements as an individual. Underneath Ms. Treat’s signature, the Petition provides her work address at C-10’s office in Newburyport, Massachusetts,¹⁴⁶ and it also states that the office “is located within the EPZ of Seabrook Station Nuclear Power Plant.”¹⁴⁷ C-10 confirms in its Reply that Ms. Treat “works within the [Emergency Planning Zone] (Newburyport) in her capacity as C-10 director.”¹⁴⁸ Ms. Treat’s signature on the Petition and Reply is a certification that those documents are true and correct,¹⁴⁹ meaning in this instance that Ms. Treat certifies that she works at C-10’s office as the organization’s Executive Director. It is undisputed that the office at which she works is located within Seabrook’s plume exposure pathway EPZ. These work-related contacts alone are sufficient to confer standing on Ms. Treat individually through the proximity presumption (given our finding *supra* that C-10 has shown an obvious potential for offsite consequences).¹⁵⁰ Therefore, Ms. Treat’s signature on the Petition, together with her requisite personal interest, is sufficient to support the organization’s standing to represent her interest in this proceeding.

III. MOTION TO STRIKE

The Staff filed a Motion to Strike large portions of C-10’s Reply as “providing entirely new details and standing arguments for the first time.”¹⁵¹ Of the

¹⁴⁵ *Consolidated Edison Co. of New York* (Indian Point, Unit 2), LBP-82-25, 15 NRC 715, 728 (1982) (quoting *Duke Power Co.* (Amendment to Materials License SNM-1773 — Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station), ALAB-528, 9 NRC 146, 151 (1979)). At oral argument, C-10 quoted this rule from the Staff’s Practice and Procedure Digest Number 15, Pre-Hearing Matter 78 (Jan. 2010). Tr. at 13. The Staff responded that this principle had been overruled in *PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133 (2010). Tr. at 62. *Bell Bend* held that standing can only be determined based on the pleadings in the case at hand. *Bell Bend*, CLI-10-7, 71 NRC at 138. Because Ms. Treat’s signature and information are found in the Petition and C-10’s Reply in this case, that holding of *Bell Bend* does not apply here.

¹⁴⁶ Petition at 17.

¹⁴⁷ *Id.* at 1.

¹⁴⁸ C-10’s Reply at 2.

¹⁴⁹ 10 C.F.R. § 2.304(d).

¹⁵⁰ See *supra* Part II.A.1 at pp. 78-81.

¹⁵¹ Staff’s Motion to Strike at 1; see also *id.*, Attachment A at 2.

cases cited by the Staff,¹⁵² only *Palisades* directly addresses the extent to which a petitioner may include new information on standing in its reply.¹⁵³ In that case, the Commission ruled that the petitioner could not attach an authorization affidavit for standing to its reply because this would deprive the opposing party of the opportunity to challenge the sufficiency of the affidavit.¹⁵⁴

The Staff, however, failed to mention subsequent Commission rulings that allow a petitioner to provide additional facts and/or argument related to standing in its reply, provided that the new information is reasonably related to the allegations originally presented.¹⁵⁵ In *Summer*, the Commission allowed persons who had filed declarations demonstrating their standing and cited their affiliation with the petitioner organization to submit revised declarations authorizing the organization to represent them.¹⁵⁶ In *Bell Bend*, the Commission held that a petitioner who made only “vague and generalized claims” supporting his argument for proximity standing “had the opportunity to cure on reply the defects in his initial petition.”¹⁵⁷ We asked the Staff to explain at oral argument why this precedent should not apply in the present case.¹⁵⁸ The Staff agreed that both decisions apply, but argued that the cases only allow supplementation if it is “in direct relationship to the arguments that were made in the initial pleading.”¹⁵⁹

We have cited only the following disputed information in our ruling on organizational standing: (1) Ms. Treat works at C-10’s office within the EPZ;¹⁶⁰ and (2) in the event of a radiological release from Seabrook, “it could become impossible to visit crucial C-10 monitoring sites to perform needed maintenance and repairs, without suffering the consequences of radiation exposure.”¹⁶¹ In arguing that these and other statements in C-10’s Reply constitute an entirely new argument on organizational standing, the Staff repeats its erroneous claim that “the Petition only asserted hypothetical injuries to the public in general,” and not to C-10.¹⁶² As explained in our ruling on organizational standing, the Petition

¹⁵² *Id.* at 3 nn.10-14.

¹⁵³ *Id.* at 2 (citing *Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 261-62 (2008)).

¹⁵⁴ *Palisades*, CLI-08-19, 68 NRC at 261-62.

¹⁵⁵ *South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-1, 71 NRC 1, 7 (2010); *Bell Bend*, CLI-10-7, 71 NRC at 139-40.

¹⁵⁶ *Summer*, CLI-10-1, 71 NRC at 7.

¹⁵⁷ *Bell Bend*, CLI-10-7, 71 NRC at 139-40.

¹⁵⁸ Licensing Board Memorandum (Identifying Oral Questions for Oral Argument), at 2 (June 5, 2017) (unpublished).

¹⁵⁹ *Tr.* at 69.

¹⁶⁰ *See supra* Part II.B. at p. 86 (citing C-10’s Reply at 2).

¹⁶¹ *See supra* Part II.A.2 at p. 84 (citing C-10’s Reply at 3).

¹⁶² Staff’s Motion to Strike at 6.

provides facts sufficient to show a risk of injury to the organization itself from a radiological release at Seabrook.¹⁶³

Viewing the contested new information in that context, C-10 has “simply used its reply to clarify and to develop information included in its initial petition.”¹⁶⁴ Ms. Treat’s signature on the Petition as C-10’s Executive Director immediately above the address of the organization’s office at least suggests that she works at the organization’s office, and the Petition also states that the office “is located within the EPZ of Seabrook Station nuclear power plant.”¹⁶⁵ C-10’s Reply merely confirms that Ms. Treat works at C-10’s office in the EPZ. The Petition also states that C-10 operates a field monitoring network to measure real-time radiological emissions from Seabrook, and, as the Staff itself emphasizes, the Petition stresses the public health risk in the event of a radiological release from Seabrook.¹⁶⁶ C-10’s Reply simply confirms the reasonable inference that a significant radiological release from Seabrook would impair C-10’s ability to maintain its monitoring network due to the risk of radiation exposure. The disputed statements are therefore permissible under *Bell Bend*.¹⁶⁷ Moreover, both statements are responsive to the Staff’s and NextEra’s arguments in their answers that C-10 failed to demonstrate organizational standing, and they are therefore consistent with Commission policy that replies should be “narrowly focused on the legal or logical arguments presented in the [answers].”¹⁶⁸

We further note that while the Commission prohibits the introduction of new arguments in a reply when doing so “would unfairly deprive other participants of an opportunity to rebut the new claims,”¹⁶⁹ both the Staff and NextEra took full advantage of the opportunity to rebut C-10’s Reply during oral argument, so neither has been placed in an unfair position by our limited use of information from C-10’s Reply.¹⁷⁰

The Staff also moves to strike various statements in C-10’s Reply related to representational standing,¹⁷¹ but, other than the claim that Ms. Treat works at C-10’s office within the EPZ, we have not relied on any of those disputed statements in our ruling on representational standing. As we have explained, representational standing can be established without an authorization affidavit

¹⁶³ See *supra* Part II.A.2 at p. 83.

¹⁶⁴ *U.S. Department of Energy (High-Level Waste Repository)*, LBP-09-6, 69 NRC 367, 434 (2009), *aff’d*, CLI-09-14, 69 NRC 580 (2009).

¹⁶⁵ Petition at 1, 17.

¹⁶⁶ Staff’s Motion to Strike at 6.

¹⁶⁷ *Bell Bend*, CLI-10-7, 71 NRC at 139-40.

¹⁶⁸ Final Rule: Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2203 (Jan. 14, 2004).

¹⁶⁹ *Nuclear Management Co., LLC (Palisades Nuclear Plant)*, CLI-06-17, 63 NRC 727, 732 (2006).

¹⁷⁰ *E.g.*, Tr. at 61-79, 99-102.

¹⁷¹ Staff’s Motion to Strike at 4.

or declaration when the petition has been signed by a ranking official of the organization who herself has standing.¹⁷² The Staff's objections therefore do not affect our ruling on representational standing.

The Board therefore concludes that the limited information from C-10's Reply that we have cited as support for our standing ruling is within the appropriate scope of a reply. The Staff's Motion to Strike is moot as to the remaining information in C-10's Reply. We therefore deny the Staff's Motion to Strike.

IV. CONTENTION ADMISSIBILITY

To participate as a party in a licensing proceeding, a petitioner for intervention such as C-10 must not only establish standing, but must also proffer at least one contention that meets the requirements of 10 C.F.R. § 2.309(f)(1).¹⁷³ An admissible contention must: (1) provide a specific statement of the legal or factual issue; (2) provide a brief explanation of the basis for the contention; (3) demonstrate that the issue is within the scope of the proceeding; (4) demonstrate that the issue is material to the findings the NRC must make to support the action that is involved in the proceeding; (5) provide a concise statement of the alleged facts or expert opinions, including references to specific sources and documents, that support the petitioner's position and upon which the petitioner intends to rely at the hearing; and (6) provide sufficient information to show a genuine dispute concerning a material issue of law or fact, including references to specific portions of the application that the petitioner disputes, or, in the case where the application is alleged to be deficient, the identification of such deficiencies and supporting reasons for this belief.¹⁷⁴

C-10's Petition includes ten contentions (Contentions A–J). According to NextEra, none of the contentions is admissible. The Staff takes a different position. Although the Staff maintains that none of C-10's contentions is independently admissible,¹⁷⁵ the Staff proposed a reformulated contention that combines C-10's Contentions A, B, C, D, G, and H. The Staff argues that its reformulated contention is admissible. C-10 does not object to the admission of the reformulated contention.¹⁷⁶

We conclude that a simplified version of the reformulated contention pro-

¹⁷² *Indian Point*, LBP-82-25, 15 NRC at 728.

¹⁷³ *See* 10 C.F.R. § 2.309(a).

¹⁷⁴ *Id.* § 2.309(f)(1)(i)–(vi).

¹⁷⁵ Staff's Ans. to Petition at 26.

¹⁷⁶ *See* Tr. at 35-36.

posed by the Staff is admissible.¹⁷⁷ We reach this conclusion on two independent grounds. First, we conclude that five of C-10's individually proposed contentions are admissible, but, for purposes of efficiency and clarity, we consolidate the contentions into a reformulated contention similar to that proposed by Staff. *Infra* Part IV.A. Alternatively, we conclude that, even assuming *arguendo* that none of C-10's contentions could be admitted as a stand-alone contention, a simplified version of the Staff's proposed reformulated contention satisfies the contention admissibility criteria, and we find it admissible for hearing. *Infra* Part IV.B. Finally, we explain our reasons for concluding that C-10's remaining contentions are inadmissible. *Infra* Part IV.C. We therefore admit the following reformulated 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.

A. The Reformulated Contention Appropriately Consolidates C-10's Contentions and Is Consistent with Commission Precedent

In this Part, we explain our application of the contention admissibility criteria to Contentions A, B, C, D, and H and our decision to consolidate the contentions into a single reformulated contention. First, we outline our general authority to reasonably interpret C-10's arguments and reformulate contentions. Second, we address the admissibility of the individual contentions. Finally, we consolidate the individual contentions into one reformulated contention. Because of the interrelated nature of the five admissible contentions, consolidation will promote a more efficient proceeding.

1. The Board's Authority to Reasonably Interpret the Petition

Before we address the admissibility of C-10's contentions and their consolidation, we address NextEra's arguments concerning the Board's authority to reasonably interpret a petitioner's arguments in order to admit contentions.

¹⁷⁷The Staff's proposed reformulation included the consolidation of Contentions A, B, C, D, G, and H. As we conclude in more detail *infra* in Part IV.A.2, Contentions A, B, C, D, and H are all independently admissible, and thus we accept the Staff's proposal to consolidate them into a single reformulated contention. However, as we conclude *infra* in Part IV.C.3, Contention G is inadmissible. Thus, as we explain *infra* in Part IV.A.3, our adoption of a simplified version of the Staff's reformulated contention incorporates Contentions A, B, C, D, and H, but does not incorporate the inadmissible Contention G.

NextEra claims that Commission precedent, and especially the Commission’s decision in *Fermi 2*,¹⁷⁸ established that the Board may not: (1) provide any “legal support” or “a reasoned basis or explanation for a conclusion” not provided by the petitioners,¹⁷⁹ or (2) connect arguments or support from separate contentions in a manner that is not clearly and explicitly pled by the petitioner.¹⁸⁰ In effect, NextEra appears to argue that the Board is limited to virtually the exact words used by a *pro se* petitioner, with no interpretive authority and without the ability to consider even controlling Commission decisions or agency regulations (i.e., legal support) unless cited by the petitioner. The Staff, conversely, offers a more robust view on the limits of the Board’s authority, asserting that the key limitation is that the Board may not provide new or missing information to render a contention admissible.¹⁸¹

We conclude that the Staff’s views more accurately summarize agency precedent. Nothing in *Fermi 2* convinces us that the Commission intended to circumscribe the Board’s authority to consider legal support not cited by petitioners or to provide a reasoned explanation for the Board’s ruling not explicitly stated by the petitioner. This is consistent with *Turkey Point*, decided after *Fermi 2*, in which the Commission affirmed that board’s reformulation of a contention even though the petition was “not a model of clarity or organization,” noting that *pro se* petitioners are not held to the same standards as parties represented by counsel.¹⁸² In that case, the applicant and the Staff both objected to the board’s reformulation on the grounds that it converted “a challenge to the 2012 extended power uprate to a challenge to the Environmental Assessment for the instant license amendments.”¹⁸³ However, given the context of the petition and the petitioner’s statements at the prehearing conference, the Commission concluded that the board did not err in construing the contention as a challenge to the Environmental Assessment — despite the fact that this argument was not clearly articulated within the four corners of the originally proffered contention.¹⁸⁴

Moreover, because the *Turkey Point* board reasonably interpreted Contention 1 as a challenge to the Environmental Assessment, the Commission found “no error in the Board’s combination of similar issues submitted . . . in support of two separate contentions.”¹⁸⁵ Far from prohibiting such action, the Commission

¹⁷⁸ *DTE Electric Co.* (Fermi Nuclear Power Plant, Unit 2), CLI-15-18, 82 NRC 135 (2015).

¹⁷⁹ NextEra’s Ans. to Petition at 12-13.

¹⁸⁰ See Tr. at 119-20.

¹⁸¹ See Staff’s Sur-Reply at 12, 15.

¹⁸² *Turkey Point*, CLI-15-25, 82 NRC at 397 (internal quotation marks omitted).

¹⁸³ *Id.* at 398-99.

¹⁸⁴ *Id.* at 399-400.

¹⁸⁵ *Id.* at 401.

“expect[s] . . . licensing boards to ‘reformulate contentions to eliminate extraneous issues or to consolidate issues for a more efficient proceeding.’”¹⁸⁶

The Commission’s ruling also permits boards to consider the readily apparent legal implications of a *pro se* petitioner’s arguments, even if not expressly stated in the petition. The Commission upheld the board’s determination that the petition implicitly challenged the Staff’s Finding of No Significant Impact under NEPA even though it did not expressly so state. It was sufficient, according to the Commission, that the challenge to the Staff’s Finding was implicit in the petitioner’s allegations concerning the significant environmental impacts of the proposed action.¹⁸⁷

Thus, *Turkey Point* reaffirms that a reformulated contention is acceptable if it reasonably interprets a petitioner’s arguments. If *pro se* petitioners must invariably present their arguments in clear and explicit terms, there would never be any cause to reformulate contentions to clarify their meaning. Thus, in admitting individual contentions or in reformulating contentions, the Board may reasonably interpret a *pro se* petitioner’s arguments. The petitioner, however, must provide the information necessary to satisfy the contention admissibility criteria.¹⁸⁸

We also conclude that nothing in *Fermi 2* or 10 C.F.R. § 2.309(f)(1)’s contention admissibility requirements prohibits a board from citing Commission decisions, agency regulations, or other relevant legal support not cited by a petitioner, or from providing its own reasoned explanation for its conclusions. Such a prohibition cannot be reconciled with 10 C.F.R. § 2.319, which provides that “[a board] has the duty to conduct a fair and impartial hearing according to law” and has “all the powers necessary to those ends.”¹⁸⁹ That regulation requires the Board to fairly and impartially judge all issues before it, which necessarily includes thoroughly reviewing and considering agency precedent and drawing our own conclusions based on that precedent.

2. Contentions A, B, C, D, and H Are Independently Admissible

a. Contention A

Contention A states:

¹⁸⁶ *Id.* (citing *Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 552-53 (2009) (quoting *Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 482 (2008))).

¹⁸⁷ *Turkey Point*, CLI-15-25, 82 NRC at 401-02.

¹⁸⁸ *Fermi 2*, CLI-15-18, 82 NRC at 145-46.

¹⁸⁹ 10 C.F.R. § 2.319; *see also* Model Code of Judicial Conduct, § 2.2 (Am. Bar Ass’n 2011) (requiring that “[a] judge shall uphold and apply the law”).

Visual inspection, crack width indexing, and extensometer deployment are not sufficient tools for determining the presence and extent of Alkali-Silica Reactor (ASR) in safety-related structures at Seabrook Station.¹⁹⁰

In Contention A, C-10 contests the sufficiency of the methods proposed in the LAR for monitoring the anticipated progression of ASR at Seabrook. Those methods include monitoring in-plane (parallel to the underlying rebars¹⁹¹) and through-thickness (perpendicular to the underlying rebars¹⁹²) expansion of Seabrook structures in order to characterize the significance of ASR in those structures. In-plane expansion is monitored using a “Combined Cracking Index (CCI) methodology based on crack width summation,” while through-thickness expansion is monitored using “[s]nap ring borehole extensometers (SRBEs).”¹⁹³ Table 5 of the LAR designates inspection frequencies for areas affected by ASR, with more frequent inspections for areas with greater in-plane expansion.¹⁹⁴ Under Table 5, an area is classified in Tier 1, 2, or 3 based on its level of in-plane expansion.¹⁹⁵ Tier 1 structures are those that show no indications of pattern cracking or water ingress and will be inspected according to the current Structural Monitoring Program (SMP). Tier 2 structures consist of “areas with pattern cracking that cannot be accurately measured” and areas with up to 0.05-0.1% in-plane expansion. They will be inspected every 30 months. Finally, Tier 3 areas are those exhibiting in-plane expansion of 0.1% or more; they will be inspected every 6 months.¹⁹⁶ For Tier 3 areas, NextEra will install extensometers to monitor through-thickness expansion.¹⁹⁷

C-10 argues that “[c]ontinued reliance on visual inspection and crack width indexing as gauges of the extent of ASR is neither appropriate nor reliable,

¹⁹⁰ Petition at 3.

¹⁹¹ Evaluation of Proposed Change at 15 of 73.

¹⁹² *Id.*

¹⁹³ *Id.* at 16 of 73. The Staff explains that

an extensometer is an instrument 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. Extensometers will be used to measur[e] through-thickness expansion of plant structures. Specifically, expansion is monitored by measuring the distance between the end of the rod and the reference surface on the anchor near the surface.

Staff’s Ans. to Petition at 29 n.132 (citing Evaluation of Proposed Change at 30 of 73).

¹⁹⁴ Evaluation of Proposed Change at 32 tbl.5 of 73.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ *Id.* at 31 of 73 (“The [Structural Monitoring Program] requires installation of extensometers in the ASR affected locations that are classified as Tier 3.”).

especially with regard to safety-related structures at Seabrook Station.”¹⁹⁸ C-10 also maintains that although extensometers, another monitoring tool proposed in the LAR, can measure overall dimensional change, they may completely miss localized ASR damage propagating in planes parallel to the planes of the walls.¹⁹⁹ C-10 asserts that while visual inspection, crack width indexing, and extensometer deployment are each legitimate tools “that can, and should, be used to analyze the advancement of ASR, only sample testing of in-situ concrete can accurately gauge the extent of ASR within a given concrete matrix.”²⁰⁰ Therefore, according to Contention A, the monitoring methods proposed in the LAR fail to assure that the presence and extent of ASR will be accurately measured.

The Staff states that “Contention A is admissible to the extent that it challenges the representativeness of the MPR/FSEL large-scale test program.”²⁰¹ Contention A, the Staff agrees, is within the scope of this proceeding “to the extent that it challenges the LAR’s reliance on visual inspections, crack width indexing, and extensometers to assess ASR at Seabrook based on the results of the test program.”²⁰² The admissible portion of Contention A, the Staff explains, “is material to the extent that the Staff must verify the representativeness of the test program to determine whether the use of visual inspections, crack width indexing, and extensometers is appropriate for Seabrook’s ASR monitoring program.”²⁰³ Contention A, the Staff notes, is supported by reports disputing the reliability of using a crack width index and Dr. Brown’s 2016 commentary disputing the reliability of extensometers.²⁰⁴ And Contention A “raises a genuine dispute with the LAR as to whether the test program is sufficiently representative such that it can provide a valid basis for NextEra’s conclusion that visual inspections, crack width indexing, and extensometers are effective methods for assessing and monitoring ASR at Seabrook.”²⁰⁵

The Staff argues, however, that Contention A is inadmissible to the extent it argues that the proposed monitoring program, even if sufficient, must be replaced by a program of in-situ sampling of the Seabrook concrete.²⁰⁶ We do not understand Contention A to make such an argument; rather, it is based on

¹⁹⁸ Petition at 3.

¹⁹⁹ *Id.* at 4.

²⁰⁰ *Id.*

²⁰¹ Staff’s Ans. to Petition at 30.

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ *Id.* at 30-31.

the alleged insufficiency of the monitoring methods proposed in the LAR. We will not reject Contention A on the basis of an argument C-10 does not make.

NextEra argues that Contention A is inadmissible.²⁰⁷ According to NextEra, C-10 “appears unaware that NextEra is already doing what it seeks: removing cores and testing Seabrook’s concrete as part of its efforts to monitor the progression of ASR. In fact, it is a key element of the LAR.”²⁰⁸ NextEra further maintains that the opinions of Dr. Brown cited by C-10 actually concern “now-superseded iterations of NextEra’s ASR assessment program and other outdated information rather than the current LAR.”²⁰⁹ Accordingly, NextEra claims, Contention A fails to demonstrate a genuine dispute with the application and lacks the “requisite support.”²¹⁰

We conclude that Contention A is inadmissible to the extent it concerns visual inspections, because we have found no respect in which the LAR’s monitoring methodology depends on visual inspections. We also conclude, however, that Contention A is admissible as to the utilization of combined crack width indexing and extensometer deployment.

To satisfy contention admissibility requirements, a contention must identify the specific issues intended to be raised, the basis for each issue, the facts and expert opinions on which it relies, and the specific sections of the LAR challenged.²¹¹ C-10 contests the LAR’s reliance on crack width indexing to monitor ASR.²¹² It notes that the LAR endorses the use of such an index, claiming that “[e]xpansion measurements from the large-scale test programs have shown that crack index provides a reasonable and conservative approximation of true engineering strain for reinforced concrete members undergoing ASR expansion.”²¹³ C-10 contends, however, that utilizing an index that only considers crack width can give a false indication of the rate of ASR advancement because concrete restrained by reinforcement will cause microcracks of greater number without restricting the length of cracks.²¹⁴ C-10 supports its argument with a March 2013 report reflecting the opinion of Dr. Paul Brown,²¹⁵ described in the Petition as

²⁰⁷ NextEra’s Ans. to Petition at 19-28.

²⁰⁸ *Id.* at 20.

²⁰⁹ *Id.*

²¹⁰ *Id.* (citing 10 C.F.R. § 2.309(f)(1)(v)).

²¹¹ 10 C.F.R. § 2.309(f)(1)(i), (ii), (v), (vi).

²¹² Petition at 3 (quoting the Evaluation of Proposed Change at 28 of 73).

²¹³ *Id.*

²¹⁴ *Id.* at 3-4.

²¹⁵ UCS Report at 1 n.1. *Id.* at 3 (quoting Dr. Paul Brown, Commentary on “Seabrook Station: Impact of Alkali-Silica Reaction on Concrete Structures and Attachments,” at 6 of 7 (unnumbered) (March 2013), <http://www.C-10.org/research/wp-content/uploads/2013/11/C-10.UCSMarch2013commentary.pdf> [hereinafter Brown 2013 Commentary]).

a retired Professor of Ceramic Science and Engineering at Pennsylvania State University.²¹⁶ Another Union of Concerned Scientists (UCS) document cited in the Petition describes Dr. Brown as an ASR concrete expert who has worked for the National Institute of Standards and Technology in Gaithersburg, Maryland, and who has advised the NRC.²¹⁷ Dr. Brown “was a contributor to the newly released report *Codes and Standards for Nuclear Plant Concrete for Nuclear Power Plants*, and is serving on an American Concrete Institute (ACI) ASR Task Group.”²¹⁸ Dr. Brown opines that:

A crack index that only considers crack width is not an appropriate measure of an expansive reaction in a structure restrained by steel reinforcement. Because of the restraint, an index that instead reflects the total lengths of cracks on a given cross sectional plane is expected to be a more reliable indicator of the extent of ASR.²¹⁹

C-10 also contends that an NRC Inspection Report concerning tests conducted at FSEL supports its argument that a crack width index may not accurately measure the rate of ASR advancement.²²⁰ According to the NRC Inspection Report, the “preliminary implication” of the test specimen expansion measurement trends is that:

[T]he X- and Y-expansion measurement methods (CCI and crack width) currently used for monitoring the progression of ASR on Seabrook Station structure surfaces (per the Structures Monitoring Program) may not provide alone, an adequate means to monitor (1) ASR progression and (2) by inference (pending the completion of the testing program), the ASR impact on the affected building’s structural performance.²²¹

C-10 also questions the LAR’s proposed use of extensometers, calling it “another valuable tool being used to make determinations about the interior changes to concrete structures that they are not designed to accomplish.”²²² Specifically,

²¹⁶ Petition at 3.

²¹⁷ UCS Report at 1 n.1. *Id.* (citing Union of Concerned Scientists, Continuing Problems with Monitoring Concrete Damage at Seabrook at 1 n.1 (Nov. 4, 2013), http://www.ucsusa.org/sites/default/files/legacy/assets/documents/nuclear_power/Seabrook-concrete-damage-report-2013.pdf).

²¹⁸ *Id.*

²¹⁹ Brown 2013 Commentary at 6 of 7.

²²⁰ *Id.* at 4 (quoting Letter from Glenn T. Dentel, Division of Reactor Projects, NRC Integrated Inspection Report 05000443/2014002 at 21 (May 6, 2014) (ADAMS Accession No. ML14127A376) [hereinafter NRC Inspection Report]).

²²¹ NRC Inspection Report at 21.

²²² Petition at 4 (citing Evaluation of Proposed Change at 15-16 of 73).

C-10 argues that extensometers may miss localized ASR damage, relying on the opinion of Dr. Brown, who states that extensometers “can only provide information as to the overall dimensional change; they cannot determine the specific locations of expansion. Consequently, very localized and intensely damaging expansion could occur in planes parallel to the planes of the walls which would not result in a significant through-wall dimensional change.”²²³

Turning to the other admissibility requirements, a contention must be within the scope of the proceeding,²²⁴ which is defined by the Commission in its initial hearing notice.²²⁵ In a license amendment proceeding, a petitioner’s contentions must focus on the issues identified in the hearing notice, the license amendment application, and the Staff’s environmental responsibilities relating to the application.²²⁶ In this instance, the *Federal Register* notice provided an opportunity for a hearing on the LAR, which would revise the Seabrook UFSAR to include methods for analyzing Seismic Category I structures with concrete affected by ASR.²²⁷ Contention A is within the scope of this proceeding because it challenges the sufficiency of the LAR.

The materiality requirement of section 2.309(f)(1)(iv) requires a significant link between the claimed deficiency in the application and the agency’s ultimate determination whether the applicant will adequately protect the health and safety of the public and the environment.²²⁸ NRC regulations define the 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

²²³ *Id.* (quoting Dr. Paul Brown, Commentary on Seabrook Station License Amendment Request 16-03 at 2 (Sept. 30, 2016) (ADAMS Accession No. ML16306A248) [hereinafter Brown 2016 Commentary]).

²²⁴ 10 C.F.R. § 2.309(f)(1)(iii).

²²⁵ *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790 (1985) (“The various hearing notices are the means by which the Commission identifies the subject matters of the hearings and delegates to the boards the authority to conduct proceedings.” (footnotes omitted)).

²²⁶ *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-91-39, 34 NRC 273, 282 (1991).

²²⁷ 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. 9601, 9604 (Feb. 7, 2017).

²²⁸ See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179-80 (1998), *aff’d*, CLI-98-13, 48 NRC 26 (1998).

to the extent applicable and appropriate.”²²⁹ 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.”²³⁰ As the Staff explained, in order to grant the LAR it must find

that there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, that there is reasonable assurance that such activities will be conducted in compliance with the Commission’s regulations, and that the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.²³¹

Contention A alleges that the monitoring methods proposed in the LAR, without appropriate in-situ testing of the concrete, are inadequate to measure ASR advancement in safety-related structures at Seabrook.²³² Accurate measurement of ASR advancement is necessary to determine whether it remains within the expansion limits in LAR Table 4 and proposed UFSAR Table 3.8-18, and thus that the large-scale test program results for Seabrook safety-related structures remain valid. The LAR itself acknowledges that, “because there is no testing data for . . . more advanced levels of ASR, periodic monitoring of ASR at Seabrook is necessary to ensure that the conclusions of the large-scale test program remain valid and that the level of ASR does not exceed that considered under the test program[s].”²³³ Thus, “[o]ne of the objectives of the test program was to identify effective methods for monitoring ASR.”²³⁴ If the Staff is not assured that the proposed monitoring program will accurately monitor ASR advancement, the Staff could not plausibly conclude that the monitoring program will

²²⁹ 10 C.F.R. § 50.92(a). As the Commission has referred this proceeding to the Atomic Safety and Licensing Board Panel without limitations, the Board operates under the same scope of review as the Commission. *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, 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.”).

²³⁰ *Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 1), LBP-02-14, 56 NRC 15, 35 (2002); *see also Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1, 2, and 3), ALAB-664, 15 NRC 1, 15-16 (1982) (“Prior to license issuance 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); *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 44 (1978).

²³¹ Staff’s Ans. to Petition at 47 (citing 10 C.F.R. § 50.40).

²³² Petition at 3-4.

²³³ Evaluation of Proposed Change at 16 of 73.

²³⁴ *Id.*

provide “reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner,” or that “the issuance of the amendment will not be inimical to the . . . health and safety of the public.”²³⁵ Contention A is therefore material to the Staff’s findings.

Finally, under section 2.309(f)(1)(vi), C-10 must provide sufficient information to show a genuine dispute concerning a material issue of law or fact, including references to specific portions of the application that the petitioner disputes.²³⁶ We have previously noted the specific parts of the LAR’s proposed monitoring program that Contention A disputes. For the reasons just explained, those disputes concerning the adequacy of the monitoring program are material to the findings the Staff must make to issue the license amendment. Therefore, Contention A identifies disputes of material fact with the LAR.²³⁷

NextEra nonetheless claims that Contention A fails to demonstrate a genuine dispute with the application, as required by section 2.309(f)(1)(vi), because it is performing or will perform the core sampling that C-10 demands.²³⁸ NextEra agrees with C-10 that “it is insufficient to rely solely ‘on visual inspection and crack width indexing as gauges of the extent of ASR.’”²³⁹ But it states that, at “Tier 3” locations, it has performed material property testing of cores removed from the structure to determine the current elastic modulus of the concrete, and that it is installing extensometers at those locations to monitor future through-thickness expansion (“Z-direction” expansion).²⁴⁰ The “Tier 3 locations” referenced by NextEra are identified based on Table 5 of the LAR.²⁴¹ NextEra will combine 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.”²⁴² To determine the expansion prior to instrument installation, NextEra will test the cores removed from the boreholes in which the extensometers will be installed to measure the current elastic modulus of those core samples. It will then use “an empirical correlation developed in the large-scale test program[s] to correlate concrete elastic modulus measurements with the through-thickness expansion to date.”²⁴³ According

²³⁵ Staff’s Ans. to Petition at 47 (citing 10 C.F.R. § 50.40).

²³⁶ See 10 C.F.R. § 2.309(f)(1)(vi).

²³⁷ U.S. Department of Energy (High-Level Waste Repository), CLI-09-14, 69 NRC 580, 588 (2009) (demonstrating a genuine dispute of fact or law requires a petitioner to show “specific ties to NRC regulatory requirements, or to safety in general” (emphasis added)).

²³⁸ NextEra’s Ans. to Petition at 20.

²³⁹ *Id.* at 22 (quoting Petition at 3).

²⁴⁰ *Id.* at 21-22.

²⁴¹ Evaluation of Proposed Change at 32 tbl.5 of 73.

²⁴² *Id.* at 30 of 73.

²⁴³ *Id.*

to NextEra, combining past expansion with that detected by the extensometers will provide a total measure of through-thickness expansion in areas affected by ASR.²⁴⁴ NextEra thus argues that, because it is performing such sample testing of Seabrook concrete, Contention A fails to raise a dispute of material fact with the LAR.²⁴⁵

In fact, C-10's argument for testing actual concrete samples at Seabrook is not resolved by the core testing to which NextEra refers. NextEra's testing of core samples is to provide a means to measure ASR advancement in the boreholes in which extensometers are to be installed. C-10, however, wants sample testing of in-situ concrete because it contends that extensometers are not a sufficient means of determining future ASR advancement.²⁴⁶ As explained above, Dr. Brown's opinion is that extensometers cannot determine certain specific locations of expansion, and consequently that "very localized and intensely damaging expansion could occur in planes parallel to the planes of the walls which would not result in a significant through-wall dimensional change."²⁴⁷ If Dr. Brown's argument is correct, combining past expansion with that detected by the extensometers may not provide an accurate measurement of total ASR expansion in the Tier 3 areas where the extensometers are installed. NextEra's testing to measure past expansion in Tier 3 boreholes is therefore insufficient to resolve C-10's argument that extensometers are not a sufficient means to measure future ASR advancement in Seabrook Category I structures.

In addition, because NextEra will use "an empirical correlation developed in the large-scale test program" to correlate the concrete elastic modulus measurements it obtains from core sample testing with the through-thickness expansion to date,²⁴⁸ the validity of NextEra's calculations depends on whether the test program[s'] specimens were representative of Seabrook concrete.²⁴⁹ The LAR also 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.²⁵⁰ NextEra justifies its crack width methodology on that basis.²⁵¹ Contention D, however, maintains that the test programs' data are not

²⁴⁴ See *id.* at 30-31 of 73.

²⁴⁵ NextEra's Ans. to Petition at 20.

²⁴⁶ Petition at 4.

²⁴⁷ *Id.* (quoting Brown 2016 Commentary at 2).

²⁴⁸ Evaluation of Proposed Change at 30 of 73.

²⁴⁹ As discussed *infra* Part IV.A.2.d at pp. 114, 117-19, the LAR acknowledges that application of the results of the test program requires that the test specimens be representative of Seabrook's reinforced concrete.

²⁵⁰ Staff's Ans. to Petition at 28 & n.127 (quoting Evaluation of Proposed Change at 16, 30 of 73).

²⁵¹ NextEra's Ans. to Petition at 25.

representative of the progression of ASR at Seabrook, and for the reasons explained below that contention is admissible.²⁵² Thus, as the Staff's proposed reformulated contention recognizes, 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.

Furthermore, extensometers will be installed only to monitor through-thickness expansion in those areas where such CCI measurements show in-plane expansion of 0.1% or more. But C-10 contests the LAR's exclusive reliance on a CCI that measures only crack width, relying on Dr. Brown's opinion that a CCI test is not an appropriate measure of an expansive reaction in structures (such as those at Seabrook) that are restrained by reinforcement. He believes that an index which instead reflects the total lengths of cracks on a given cross-sectional plane would be a more reliable indicator of the extent of ASR.²⁵³ If Dr. Brown's argument is correct, then some areas with ASR advancement that are actually above the Tier 3 threshold may not be classified in Tier 3, and therefore will not undergo core sample testing or extensometer installation. Thus, the monitoring program may fail to detect ASR advancement exceeding the acceptable ASR expansion limits identified in Table 4.²⁵⁴ If any one of those limits is exceeded, the conclusions of the test program concerning the safety of continued operations at Seabrook would no longer be valid.

NextEra argues that Dr. Brown did not provide a reasoned basis for his opinion that a combined crack index that only considers crack width is not an appropriate measure for the reinforced concrete at Seabrook.²⁵⁵ We have, however, reviewed the accompanying analysis, and it adequately explains his conclusion.²⁵⁶ Similarly, Dr. Brown's 2016 Commentary provides a reasoned basis for his opinion that extensometers may fail to detect very localized and intensely damaging expansion.²⁵⁷ Underlying both opinions is Dr. Brown's position that ASR expansion in reinforced concrete will eventually result in high-density cracking that reduces the strength of the concrete, but such cracking may

²⁵² See *infra* Part IV.A.2.d at pp. 112-21.

²⁵³ Petition at 3 (quoting Brown 2013 Commentary at 6 of 7).

²⁵⁴ Thus, NextEra's argument that Dr. Brown does not dispute the Tier 3 threshold misses the point. NextEra's Ans. to Petition at 24. The relevance of Dr. Brown's criticism of the crack width index is that NextEra may fail to detect areas that should be classified in Tier 3.

²⁵⁵ NextEra's Ans. to Petition at 25.

²⁵⁶ Brown 2013 Commentary at 1-2, 5-6 of 7.

²⁵⁷ Brown 2016 Commentary at 1-3.

be missed or underestimated by extensometers or an index that only considers crack width.²⁵⁸

This is not the point at which to resolve the disputes as to the validity of Dr. Brown's conclusions. At the contention admissibility stage, petitioners are not required to prove their case on the merits. Also, petitioners are not required to provide expert or factual support in the form or of the quality necessary to withstand a summary disposition motion.²⁵⁹ The requirement to demonstrate a genuine dispute of material fact at the summary disposition stage requires "a more rigorous evidentiary showing than that required to establish an admissible contention."²⁶⁰ The petitioner also need not set forth all the evidence on which it may rely at later stages of the proceeding.²⁶¹ At this initial pleading stage, C-10 has provided sufficient expert opinion to demonstrate a dispute concerning the adequacy of NextEra's monitoring program, and, given the acknowledged likelihood of continued ASR advancement at the Seabrook plant, the adequacy of that monitoring program is clearly a material issue.

Accordingly, Contention A is admissible as to crack width indexing and extensometer deployment.

b. Contention B

Contention B states:

Expansion occurring within a reinforced concrete structure due to Alkali-Silica

²⁵⁸ Brown 2013 Commentary at 1-2, 5-6 of 7; Brown 2016 Commentary at 1-3. The issue of high-density cracking is discussed in more detail *infra* in Part IV.A.2.b.

²⁵⁹ *Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), CLI-11-8, 74 NRC 214, 221 (2011); *Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 51 (1994); *USEC Inc.* (American Centrifuge Plant), LBP-05-28, 62 NRC 585, 596-97 (2005).

²⁶⁰ *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 442 & n.81 (2011) (citing Final Rule: Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2190 (Jan. 14, 2004) ("The contention standard does not contemplate a determination of the merits of a proffered contention."); and then citing Final Rule: Rules of Practice for Domestic Licensing Proceedings - Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989) ("[A]t the contention filing stage the factual support necessary to show that a genuine dispute exists need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand a summary disposition motion.")).

²⁶¹ *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 of a proceeding, intervenors need not marshal their evidence as though preparing for an evidentiary hearing."); *U.S. Department of Energy* (High-Level Waste Repository), LBP-09-6, 69 NRC 367, 416 (2009) (requiring petitioners to proffer conclusive support for the effect of their proposed contention "would improperly require . . . Boards to adjudicate the merits of contentions before admitting them.").

Reaction is not equivalent to a pre-stressing effect. Any mitigation of lost structural capacity, due to reinforcement, is temporary and unpredictable.²⁶²

Contention B disputes the LAR's claim that "[w]hen reinforcement is present to restrain the tensile force exerted by ASR expansion, an equivalent compressive force develops in the concrete that is comparable to prestressing."²⁶³ C-10 also disputes the LAR's claim that "the change in material properties does not necessarily result in a corresponding decrease in capacity of a reinforced concrete structure [because] ASR-induced expansion in reinforced concrete has a pre-stressing effect that mitigates the loss of structural capacity that would be assumed based on the change in material properties."²⁶⁴ According to C-10, NextEra's claim that ASR-impacted concrete held under "restraint" by steel rebar increases in strength "reflects a false understanding of the forces at work;" the concrete may show "a temporary increase in certain measures of strength, but irrevocably will advance toward failure."²⁶⁵ C-10 further alleges that "[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."²⁶⁶

In support of its argument, C-10 relies on Dr. Brown's 2016 critique of NextEra's LAR.²⁶⁷ According to Dr. Brown,

It appears that the central argument being advanced by NextEra to support a license amendment is that ASR, in a highly reinforced concrete, does not result in a significant loss of structural capacity — at least under the conditions of the tests carried out at the University of Texas. While there is no basis to question the results obtained in these particular tests, there is a strong basis to question their relevance to the Seabrook facility.²⁶⁸

Dr. Brown explains that "[w]hile the course of ASR in unrestrained samples will be to eventually introduce networks of cracks, the course of ASR in highly reinforced concrete will be to produce a concrete fabric wherein aggregate is embedded in a clay-like paste with minimal mechanical properties."²⁶⁹ Dr. Brown

²⁶² Petition at 4.

²⁶³ *Id.* at 5 (quoting MPR Associates, MPR-4288, "Seabrook Station: Impact of Alkali-Silica Reaction on Structural Design Evaluations," July 2016 at 4-1, 4-3 (rev. 0, July 31, 2016) (ADAMS Accession No. ML16216A241) [hereinafter MPR-4288]). MPR-4288 is Enclosure 2 (Non-Proprietary) and Enclosure 5 (Proprietary) to the LAR, and is therefore part of the LAR.

²⁶⁴ *Id.* (quoting Evaluation of Proposed Change at 8-10 of 73).

²⁶⁵ *Id.* (emphasis removed).

²⁶⁶ *Id.*

²⁶⁷ *Id.* (quoting Brown 2016 Commentary at 3-4).

²⁶⁸ Brown 2016 Commentary at 2.

²⁶⁹ *Id.*

alleges that the test program avoided “establishing the extent of this heterogeneity both on local mechanical properties and on microstructure.”²⁷⁰ He maintains that “restraint does not stop the progress of the reaction” and that while “[t]he course of ASR in restrained samples is known to initially cause pore filling, resulting in densification, which will for some period of time counteract the loss of structural capacity,” eventually cracking does occur “with an abrupt loss of mechanical properties.”²⁷¹ He recommends that tests be performed on the test program specimens at varying locations and at the plant itself in order to provide an adequate comparison of the specimens to the concrete at Seabrook.²⁷² Dr. Brown argues that the failure to perform the tests he recommends “severely limits the ability to predict such a possible change in behavior or, more relevantly, provide a firm basis to assert that abrupt changes in structural capacity will not occur during the operating life of the facility.”²⁷³

As further support for the contention, C-10 cites a March 2013 UCS report noting Dr. Brown’s opinion that expansive ASR reaction in concrete under restraint eventually results in higher densities of microcracks, which reduces the strength of the concrete.²⁷⁴ C-10 also cites Dr. Brown’s commentary, submitted to the Advisory Committee on Reactor Safeguards in 2012, stating that a degradation mechanism such as ASR has an “autocatalytic” aspect, so that “the worse it gets, the worse it gets.”²⁷⁵ Dr. Brown explains that “[t]his is because the cracks serve as high conductivity paths for the movement of water and aggressive species.”²⁷⁶

Contention B provides a specific statement of the issue of law or fact to be raised or controverted.²⁷⁷ C-10 has also explained the basis of the contention,²⁷⁸ arguing that: (1) any mitigation of lost structural capacity due to reinforcement is temporary at best; (2) failure of the concrete due to microcracking will inevitably occur; and (3) because the LAR misconstrues the effects of ASR acting within the restraint imposed by reinforcing steel, serious and rapid degradation of the Seabrook concrete may go unnoticed.²⁷⁹ Contention B challenges a spe-

²⁷⁰ *Id.*

²⁷¹ *Id.* at 3.

²⁷² *Id.* at 2.

²⁷³ *Id.* at 3.

²⁷⁴ Petition at 4 (quoting Brown 2013 Commentary at 2 of 7).

²⁷⁵ *Id.* at 5 (quoting Dr. Paul Brown, Commentary on Advisory Committee on Reactor Safeguards Transcript ML122070401 at 6 (Sept. 15, 2012), *included as* Attachment A to Staff’s Ans. to Petition).

²⁷⁶ *Id.*

²⁷⁷ 10 C.F.R. § 2.309(f)(1)(i).

²⁷⁸ *Id.* § 2.309(f)(1)(ii).

²⁷⁹ Petition at 5.

cific aspect of the LAR,²⁸⁰ and therefore is within the scope of this proceeding as defined by the Commission in its initial Federal Register notice.²⁸¹ Contention B identifies the expert opinions of Dr. Brown on which C-10 relies²⁸² and the specific sections of the LAR it disputes.²⁸³

We must also decide whether Contention B presents a dispute of material fact affecting the Staff's licensing decision.²⁸⁴ NextEra argues that the LAR's discussion of prestressing "merely provides background information; it is not an element of the methodology for which NextEra is seeking NRC approval in the LAR."²⁸⁵ Therefore, according to NextEra, the argument that ASR-induced expansion within a reinforced concrete structure is not equivalent to a prestressing effect is not material to any finding the NRC must make to approve the LAR.²⁸⁶ The Staff also maintains that the argument concerning the prestressing effect is not material to its findings "because the LAR depends on limits derived from the MPR/FSEL large-scale test program such that, as long as the test program was bounding of the Seabrook concrete, then the limits would also be bounding regardless of which theory correctly explains the forces giving rise to these limits."²⁸⁷

Unlike NextEra, however, the Staff recognizes that "portions of Contention B could be admissible to the extent that C-10 is challenging the representativeness of the test program itself."²⁸⁸ It further concludes that "this aspect of Contention B is material because, in order to approve the LAR, the Staff must determine that NextEra's evaluation of ASR behavior (including any prestressing effect) based on its test program is representative of the structures at Seabrook."²⁸⁹ The Staff concluded that a portion of Contention B does "argue how a non-representative test program could affect the findings that the Staff must make on the LAR," and that it could therefore be included in a reformulated contention that includes Contentions A, C, D, G, and H.²⁹⁰

We agree that the Staff need not resolve the theoretical question whether ASR-induced expansion within a reinforced concrete causes an effect that is equivalent to prestressing. Therefore, that specific issue is not material to the

²⁸⁰ 10 C.F.R. § 2.309(f)(1)(iii).

²⁸¹ *Id.* § 2.309(f)(1)(iii).

²⁸² *See id.* § 2.309(f)(1)(v).

²⁸³ *See id.* § 2.309(f)(1)(vi).

²⁸⁴ *Id.* § 2.309(f)(1)(iv), (vi).

²⁸⁵ NextEra's Ans. to Petition at 33.

²⁸⁶ *Id.* at 29.

²⁸⁷ Staff's Ans. to Petition at 32.

²⁸⁸ *Id.* at 33.

²⁸⁹ *Id.*

²⁹⁰ *Id.* at 26.

findings the Staff must make on the LAR. But the contention is not limited to that specific issue. Instead, reading the full contention together with the statement of its basis, we understand the contention to allege that the LAR misconstrues the effects of ASR acting within the restraint imposed by reinforcing steel, and that, as a result, significant microcracking and resulting concrete degradation may go unnoticed unless there is additional analysis not contemplated under the LAR. C-10 argues that, contrary to the claims made in the LAR, any mitigation of lost structural capacity due to reinforcement is merely temporary and unpredictable, and that the eventual result of ASR-induced expansion in reinforced concrete will be high-density microcracking that reduces the strength of the concrete. C-10 further alleges that “[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.”²⁹¹

The claim that, because of the alleged misunderstanding of the effects of ASR, significant concrete degradation may go unnoticed is 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.²⁹² C-10 has provided adequate support for its claim that the LAR’s analysis is inadequate through the opinion of Dr. Brown discussed above. Dr. Brown’s analysis challenges “the representativeness of the test program itself,”²⁹³ because it alleges that further testing is necessary to ensure that the results of the test program do in fact apply to the Seabrook plant. This implicates the representativeness of the test program results, the issue the Staff recognizes as material to its findings on the LAR. For example, because the LAR’s expansion limits are derived from the test program, the argument that further testing is necessary to ensure that the test program results apply to the Seabrook plant is material to determining whether the expansion limits will assure adequate protection of public health and safety. C-10 has therefore properly pled a dispute of material fact.

NextEra additionally claims that, even if the mitigating effect of concrete reinforcement is unpredictable, the LAR includes monitoring intervals and sets expansion limits that ensure it can take corrective action before there is any unacceptable impact on structural integrity.²⁹⁴ The adequacy of the monitoring intervals, however, is challenged in Contention H, and the adequacy of the monitoring program for ensuring that ASR expansion remains within the limits of LAR Table 4, is challenged in Contention A. As explained in detail above, one of the components of the monitoring program is the use of extensometers to

²⁹¹ Petition at 5 (emphasis in original).

²⁹² See *Private Fuel Storage*, LBP-98-7, 47 NRC at 180.

²⁹³ Staff’s Ans. to Petition at 33.

²⁹⁴ NextEra’s Ans. to Petition at 33.

measure through-thickness expansion.²⁹⁵ According to Dr. Brown, extensometers cannot determine the specific locations of expansion, and consequently “very localized and intensely damaging expansion could occur in planes parallel to the planes of the walls which would not result in a significant through-wall dimensional change.”²⁹⁶ Thus, if Dr. Brown is correct, NextEra’s monitoring program may overlook ASR-induced microcracking and the resulting deterioration of Seabrook concrete.

While NextEra agrees with C-10 that the mitigating effect of reinforcement is temporary and does not stop the progress of the ASR reaction, it maintains that it has adequately addressed this concern in its LAR and supporting documents.²⁹⁷ Therefore, according to NextEra, Contention B does not identify a genuine material dispute with the LAR. NextEra cites MPR-4288, which indicates that, for the mitigating effect of reinforcement to be overcome, the compressive force that is comparable to prestressing must be completely overcome.²⁹⁸ But the cited discussion does not address whether this change, if and when it occurs, will result in the microcracking and resulting concrete degradation described by Dr. Brown. Rather it merely explains what must occur to overcome the compressive force and does not address what the consequence to the subject concrete structure at Seabrook will be if that point is reached.²⁹⁹ MPR-4288 also does not address Dr. Brown’s concern that absent additional testing of both the test specimens and Seabrook concrete, the LAR lacks “a firm basis to assert that abrupt changes in structural capacity will not occur during the operating life of the facility.”³⁰⁰

We therefore conclude that Contention B is admissible. To eliminate the unnecessary issue of the prestressing effect, we narrow the contention to the following:

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.

c. Contention C

Contention C states:

Thorough petrographic analysis, including core sample testing of Seabrook’s in-situ concrete, must be integral to NextEra’s assessment of the advance of ASR.

²⁹⁵ See *supra* Part IV.A.2.a at p. 93.

²⁹⁶ Petition at 4 (quoting Brown 2016 Commentary at 2).

²⁹⁷ NextEra’s Ans. to Petition at 30.

²⁹⁸ *Id.* at 32 (citing MPR-4288 at 4-2).

²⁹⁹ See MPR-4288 at 4-2.

³⁰⁰ Brown 2016 Commentary at 3.

Because of the extreme danger imposed by the radioactive substances contained within their walls, petrographic analysis of concrete from the Containment structures and the Spent Fuel Pool should be required by NRC. NextEra's choice not to continue core sample testing — especially for safety-related structures — is based on spurious assumptions, leaves inspectors and the surrounding communities with an unnecessarily incomplete picture of the actual state of concrete degradation, and could endanger the public health and safety.³⁰¹

This contention repeats the same demand for “thorough petrographic analysis” that appears in the statement of basis for Contention B. The essence of C-10's claim here is primarily the same argument supporting Contention B; i.e., that the benefit from ASR expansion in reinforced concrete is only temporary and that microcracking will eventually lead to an “autocatalytic collapse of the concrete's properties.”³⁰² Further, just as Contention B argues that “[t]he danger in misconstruing the effects of ASR, acting with the restraint imposed by reinforcing steel, is that serious degradation may go unnoticed without employing thorough petrographic analysis.”³⁰³ Contention C argues that “[u]ntil thorough petrographic analysis is performed on Seabrook's concrete structures, NextEra has no real basis by which it can reassure . . . the NRC[] that Seabrook's ASR progression is truly understood.”³⁰⁴ C-10 also relies upon several opinions of Dr. Brown that C-10 cited in support of Contention B, including his 2016 critique of the LAR.³⁰⁵

If Contention C were merely a restatement of Contention B, we would reject it as duplicative.³⁰⁶ However, some of the arguments in support of Contention C go beyond those offered in support of Contention B. Citing the opinion of Dr. Brown, C-10 disputes NextEra's primary rationale for not undertaking petrographic analysis: that once ASR-affected cores are removed, the behavior of those cores no longer reflects that of the confined structure.³⁰⁷ In disputing NextEra's argument in this regard, C-10 refers to Dr. Brown's opinion asserting that insofar as models have been proposed to predict the path of ASR in reinforced concrete structures, those proposing such models have uniformly also cited the critical need to carry out core testing in reinforced concrete in order to test such models. Dr. Brown faults the LAR for its failure to refer to any of

³⁰¹ Petition at 6.

³⁰² *Id.* at 7-8.

³⁰³ *Id.* at 5.

³⁰⁴ *Id.* at 8.

³⁰⁵ *See id.* at 5-7.

³⁰⁶ *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-15-13, 81 NRC 456, 468 (2015).

³⁰⁷ Petition at 6-7.

those models.³⁰⁸ C-10 also identifies the “testing and analysis protocols” for petrographic analysis that it believes should be followed.³⁰⁹ Thus, we understand the purpose of Contention C to be not merely a restatement of the previous contention, but to provide additional argument in support of C-10’s demand for thorough petrographic analysis.

As explained by the Staff, “Contention D argues that the test program is not representative of the progression of ASR at Seabrook,” and that “to the extent that C-10’s arguments in Contention C pertain to the representativeness of the test program, these portions of Contention C should be admitted.”³¹⁰ We conclude that C-10’s arguments in support of Contention C do pertain in part to the representativeness of the test program. Dr. Brown’s analyses that provide the support for both Contentions B and C challenge the representativeness of the test program itself because he maintains that further testing is necessary to ensure the results of the test program do in fact apply to Seabrook.³¹¹ C-10 summarizes its arguments in support of Contention C by stating that, absent thorough petrographic analysis, NextEra lacks the necessary technical justification to assure the NRC that ASR progression at Seabrook is truly understood.³¹² Therefore, Contention C is material to the question of whether the test program is truly representative of Seabrook concrete and so fulfills the admissibility requirement of section 2.309(f)(1)(iv).

Contention C also satisfies the other admissibility criteria. It provides a specific statement of the issue of law or fact to be raised or controverted.³¹³ C-10 has also explained the basis of the contention,³¹⁴ arguing that “the seeming benefit gained by the ‘confined’ environment — mitigating the deleterious impact of the ASR attack on concrete — is in fact a temporary reprieve from the unpredictable and irreversible march toward structural failure,”³¹⁵ making

³⁰⁸ *Id.* at 7.

³⁰⁹ *Id.* (citing American Concrete Institute, ACI 349.3R, *Evaluation of Existing Nuclear Safety-Related Concrete Structures* (2002), https://global.ihs.com/doc_detail.cfm?rid=IHS&gid=VKLUABAAAAAAAAAA and American Society for Testing & Materials, ASTM C856-11, *Standard Practice for Petrographic Examination of Hardened Concrete* (2011), <https://compass.astm.org/Standards/HISTORICAL/C856-11.htm> [hereinafter ASTM C856-11]). ACI 349.3R has been superseded by ACI 349.3R-02. American Concrete Institute, ACI 349.3R-02, *Evaluation of Existing Nuclear Safety-Related Concrete Structures* (2010), http://civilwares.free.fr/ACI/MCP04/3493r_02.PDF. ASTM C856-11 has been superseded by ASTM C856-17. *Standard Practice for Petrographic Examination of Hardened Concrete* (2017), <https://compass.astm.org/EDIT/html.annot.cgi?C856+17>.

³¹⁰ Staff’s Ans. to Petition at 35.

³¹¹ See *supra* Part IV.A.2.b at pp. 103-04.

³¹² Petition at 8.

³¹³ 10 C.F.R. § 2.309(f)(1)(i).

³¹⁴ *Id.* § 2.309(f)(1)(ii).

³¹⁵ Petition at 7.

thorough petrographic analysis essential to ensure that the progression of ASR at Seabrook is fully understood.³¹⁶ Contention C challenges the LAR,³¹⁷ and therefore is within the scope of this proceeding as defined by the Commission in its initial *Federal Register* notice.³¹⁸ Contention C identifies the expert opinions of Dr. Brown on which C-10 relies.³¹⁹ We understand from Contention C's express reference to pages 4-6 of the Petition (pages which include Contention B) that Contention C is intended to challenge the same parts of the LAR as Contention B.³²⁰ This interpretation is consistent with the fact that Contention C in large part reiterates the arguments of Contention B. Contention C therefore adequately identifies the parts of the LAR in dispute.³²¹ The dispute is material to the Staff's findings on the LAR, for the reasons explained above.

In arguing against the admissibility of Contention C, NextEra repeats its argument in response to Contention A that it is conducting mechanical property testing of sample cores from Seabrook.³²² We have reviewed that argument in our ruling on the admissibility of Contention A, and we discuss it again in connection with Contention D, below. We conclude in both instances that the core sample testing NextEra is conducting is not the only core sample testing that C-10 contends is necessary.³²³

NextEra also implies that the code provisions C-10 cites regarding petrographic analysis, ACI 349.3R and ASTM C 856-11, may not be considered because C-10 filed a petition for rulemaking under 10 C.F.R. § 2.802 asking the NRC to issue a regulation that would require compliance with those standards.³²⁴ NextEra does not claim, however, that the NRC has initiated or is about to initiate a rulemaking in response to the Petition, so the rule prohibiting litigation of such matters does not apply.³²⁵

NextEra also argues that splitting tensile strength testing, recommended by Dr. Brown, was conducted in the large-scale test program and showed little

³¹⁶ *Id.* at 8.

³¹⁷ 10 C.F.R. § 2.309(f)(1)(iii).

³¹⁸ *Id.*; 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. 9601, 9604 (Feb. 7, 2017).

³¹⁹ *See id.* § 2.309(f)(1)(v).

³²⁰ Petition at 7.

³²¹ 10 C.F.R. § 2.309(f)(1)(vi).

³²² NextEra's Ans. to Petition at 36.

³²³ *See supra* Part IV.A.2.a at pp. 99-100; *infra* Part IV.A.2.d at pp. 119-21.

³²⁴ NextEra's Ans. to Petition at 37.

³²⁵ *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 345 (1999).

correlation to ASR.³²⁶ NextEra further maintains that use of the model cited by Dr. Brown is unnecessary because the large-scale test program relies on actual measurements.³²⁷ However, C-10 challenges the reliability of data derived from the test program in Contention D, discussed below, which we conclude is admissible. We will not reject Contention C on the basis of arguments that implicitly presume the validity of data derived from the test program because that is a disputed issue.

For the same reason, we will not reject Contention C based on NextEra's argument that C-10 has not shown a genuine dispute with the LAR supplement submitted to the NRC on September 30, 2016, which included MPR-4153 as an attachment.³²⁸ Referring to MPR-4153, the LAR explains that NextEra will use "an empirical correlation developed in the large-scale test program" to correlate the concrete elastic modulus measurements it obtains from core sample testing with the through-thickness expansion to date.³²⁹ Here also, the validity of NextEra's calculations depends on whether the test program's specimens are representative of Seabrook concrete.³³⁰ By disputing that issue, C-10 necessarily disputes all the results of the test program.

NextEra further argues that the testing recommended by Dr. Brown would not impact structural evaluations at Seabrook that are conducted under ACI 318-71 and the ASME Code.³³¹ We do not understand Dr. Brown to recommend additional testing for that specific purpose. Instead, he recommends that tests be performed on the test program specimens at varying locations and at the plant itself in order to provide an adequate comparison of the large-scale test program specimens to the concrete at Seabrook.³³² He contends this testing is necessary to ensure that the results of the test program do in fact apply to Seabrook.³³³ This is the representativeness issue that the Staff recognizes as material to its findings and that is the subject of Contention D.

We therefore conclude that Contention C is admissible.

³²⁶ NextEra's Ans. to Petition at 38.

³²⁷ *Id.* at 40.

³²⁸ NextEra's Ans. to Petition at 40-41.

³²⁹ Evaluation of Proposed Change at 30 of 73.

³³⁰ As discussed *infra* Part IV.A.2.d at pp. 114, 117-19, the LAR acknowledges that application of the results of the test program requires that the test specimens be representative of Seabrook's reinforced concrete.

³³¹ NextEra's Ans. to Petition at 37, 39.

³³² Brown 2016 Commentary at 2.

³³³ *Id.*

d. Contention D

Contention D states:

The Large-Scale Test Program, undertaken for NextEra at the Ferguson Structural Engineering Laboratory (FSEL), has yielded data that are not “representative” of the progression of ASR at Seabrook Station, and therefore cannot be substituted for the required comprehensive petrographic analysis of in-situ concrete at the Seabrook reactor — now many years overdue.³³⁴

In support of this argument, C-10 repeats the argument of Contentions B and C that NextEra misunderstands the effect of confinement on the advancement of ASR, that concrete degradation due to ASR is not a linear phenomenon, and that comprehensive petrographic analysis of Seabrook concrete should be required.³³⁵ C-10 disputes the test program specimens adequately represent the “non-linear advancement of ASR over the course of 35-40 years,” given that many of the Seabrook structures affected by ASR “have been submerged at their footings by as much as six feet for all of that time; and for some of that time, the water inundating those foundations has had a relatively high salt content.”³³⁶ Furthermore, C-10 stresses “some of those concrete structures have been subjected to significant, even high levels of heat; and some of those structures have been subjected to significant, and even high levels of radiation and the resulting neutron bombardment.”³³⁷ C-10 maintains that the allegedly representative samples of Seabrook concrete used in the test program were not actually representative of Seabrook concrete because the program did not sufficiently account for those factors.³³⁸ For example, C-10 argues that the test program failed to evaluate the contribution of radiation and heat exposure to the progressive weakening of Seabrook concrete through ASR.³³⁹

NextEra contends that Contention D is inadmissible. Its primary argument is that it is, in fact, conducting the core sample testing that C-10 claims is necessary — and hence that Contention D therefore fails to demonstrate a genuine dispute with the LAR.³⁴⁰ The Staff, on the other hand, would admit Contention D as part of its reformulated contention. The Staff notes that Contention D both provides a specific statement of the issue of law or fact to be raised and explains the

³³⁴ Petition at 8.

³³⁵ *Id.* at 8-9.

³³⁶ *Id.* at 10.

³³⁷ *Id.*

³³⁸ *Id.*

³³⁹ *Id.* at 9-10.

³⁴⁰ NextEra’s Ans. to Petition at 49.

basis of the contention.³⁴¹ The Staff also agrees that C-10 has provided alleged facts or expert opinions supporting Contention D, and that the contention shows that a genuine dispute exists with the LAR.³⁴²

The Staff contends, however, that Contention D is not independently admissible because “it does not explain why its representativeness argument is within the scope of the proceeding or material to any of the findings that the Staff must make on the LAR.”³⁴³ Nevertheless, the Staff concludes that

[p]ortions of Contentions A, B, C, G, and H do . . . assert consequences from the alleged lack of representativeness of the test program. For instance, these contentions raise concerns with the monitoring, acceptance criteria, and inspection intervals proposed in the LAR, all of which are based in part on the LAR’s finding that the test program is representative of the Seabrook concrete.³⁴⁴

The Staff therefore submits that Contention D is admissible when combined with the portions of Contentions A, B, C, G, and H that allege defects in the LAR’s monitoring program, acceptance criteria, and inspection intervals.³⁴⁵

We conclude that Contention D is independently admissible. We agree with the Staff that

Contention D provides a specific statement of the issue of law or fact to be raised or controverted (i.e., whether the test program is representative of the Seabrook concrete), [and] it provides the basis for this contention (i.e., that the test program does not sufficiently account for the Seabrook concrete with respect to [its] 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; [and] the effects of radiation).³⁴⁶

The contention thus satisfies 10 C.F.R. § 2.309(f)(1)(i) and (ii).

We further conclude that Contention D is within the scope of the proceeding as required by section 2.309(f)(1)(iii). Contention D challenges the sufficiency of the LAR and is therefore within the scope of the proceeding.

Unlike the Staff, we conclude that Contention D, even if not combined with other contentions, is “material to the findings the NRC must make to support the action that is involved in the proceeding.”³⁴⁷ The Staff faults Contention

³⁴¹ Staff’s Ans. to Petition at 28.

³⁴² *Id.*

³⁴³ *Id.*

³⁴⁴ *Id.*

³⁴⁵ *Id.*

³⁴⁶ *Id.* (internal quotations omitted).

³⁴⁷ 10 C.F.R. § 2.309(f)(1)(iv).

D because it does not include a statement expressly connecting the lack of representativeness issue to any of the findings that the Staff must make on the LAR.³⁴⁸ But we think the connection is readily apparent from what C-10 did say. C-10 quoted the LAR's acknowledgment that "[a]pplication of the results of the [large-scale] test program *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."³⁴⁹ We also think the connection is apparent from what the Staff itself has said. The Staff recognized that "to approve the LAR, the Staff must determine that NextEra's evaluation of ASR behavior based . . . on its test program is representative of the structures at Seabrook."³⁵⁰ The Staff identifies specific statements in the LAR connecting the test program (and thus the representativeness issue) to NextEra's monitoring, acceptance criteria, and inspection intervals.³⁵¹ For example, the LAR attempts to justify NextEra's monitoring program based on a combined cracking index (CCI) and snap ring borehole extensometers because those methodologies were found to be accurate and reliable in the test program.³⁵² NextEra's ASR expansion limits that apply to the structural limit states, identified in LAR Table 4,³⁵³ are also derived from the large-scale test program.³⁵⁴ Thus, if the test program was not sufficiently representative of Seabrook concrete, as Contention D alleges, the LAR's reliance on the test program to support the monitoring program, acceptance criteria, and inspection intervals would be undermined.

Contention D is therefore material to "the agency's ultimate determination whether the applicant will adequately protect the health and safety of the public and the environment."³⁵⁵ Like the *Turkey Point* Board, we will not reject a contention filed by a *pro se* petitioner because it did not use specific words to connect its allegations to the Staff's ultimate findings:

At oral argument, FPL reiterated its argument that CASE's petition fails to tie

³⁴⁸ See Staff's Ans. to Petition at 28.

³⁴⁹ Petition at 9 (emphasis added) (quoting MPR Associates, MPR-4273, "Seabrook Station - Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction," July 2016 at 6-3 (rev. 0, July, 2016) (ADAMS Accession No. ML16216A242) [hereinafter MPR-4273]). MPR-4273 is Enclosure 3 (Non-Proprietary) and Enclosure 6 (Proprietary) to the LAR, and is therefore part of the LAR.

³⁵⁰ Staff's Ans. to Petition at 33.

³⁵¹ *Id.* at 28 n.127.

³⁵² *Id.* at 28 (quoting Evaluation of Proposed Change at 16, 30 of 73).

³⁵³ We understand that the phrase "acceptance criteria," as used by the Staff, refers to the expansion limits in LAR Table 4.

³⁵⁴ Staff's Ans. to Petition at 28 (citing Evaluation of Proposed Change at 31-32 of 73).

³⁵⁵ *Virginia Electric and Power Co.* (North Anna Power Station, Unit 3), LBP-09-27, 70 NRC 992, 1006 (2009) (citing *Private Fuel Storage*, LBP-98-7, 47 NRC at 179).

its contentions to any NEPA requirements or specific citations to the EA, while acknowledging that, “had they said the EA is inadequate because it fails to comply with NEPA by failing to address or failing to adequately address these certain issues, that might be an admissible contention.” . . . [T]he Board will not require such procedural formalism from a *pro se* petitioner in order to reject an otherwise valid contention.³⁵⁶

We next consider whether C-10 has identified the facts and expert opinion on which it relies to support Contention D, as required by section 2.309(f)(1)(v). To support its argument that the test program yielded data that are not representative of the progression of ASR at Seabrook, C-10 relies on a research report prepared for the NRC entitled “A Review of the Effects of Radiation on Microstructure and Properties of Concretes Used in Nuclear Power Plants” (NUREG/CR-7171), which explains that:

It was noted in Section 6.1 of this report that there may be a coupling effect between radiation and ASR that can potentially accelerate ASR activity or cause ASR to occur with aggregates that are not normally reactive. As plants age, the potential of ASR to occur in structures forming the biological shield or support for the reactor pressure vessel may increase as these structures are located in areas in which they are subjected to moderate elevated temperature in combination with radiation.³⁵⁷

The next paragraph of NUREG/CR-7171 identifies methods for detecting ASR-induced expansion of concrete. Primarily, ASR is detected through “visual examinations indicating evidence of expansion, relative movements between structural elements, and cracking.”³⁵⁸ However, if ASR is capable of being de-

³⁵⁶ *Turkey Point*, LBP-15-13, 81 NRC at 472; see also *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 5 (1996) (“[W]e decline the suggestions by the Staff and the Licensee that we dismiss the petition solely on the basis of a technical pleading defect.”); *Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974) (“[W]e refuse to apply our rules of procedure, as the licensee urges, in an overly formalistic manner.”); *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 206 (1993) (“[I]t is clear that the ‘raised threshold’ incorporated by the Commission into its contention rule must be reasonably applied and is not to be mechanically construed. The Commission has long held that its rules of procedure are not to be applied in an ‘overly formalistic’ manner.”).

³⁵⁷ Petition at 10 (quoting Kaspar William, Yunping Xi, & Dan Naus, NUREG/CR-7171, A Review of the Effects of Radiation on Microstructure and Properties of Concretes Used in Nuclear Power Plants, at 88 (Nov. 2013) (ADAMS Accession No. ML13325B077) [hereinafter NUREG/CR-7171]).

³⁵⁸ NUREG/CR-7171 at 89.

tected visually, it is likely in a fairly advanced state of development.³⁵⁹ Thus, other methods of detecting ASR in suspect areas include the removal, examination, and testing of the suspected concrete.³⁶⁰ Two examples of examination and testing methods include (1) “[p]etrographic examinations of thin sections of aggregate materials,” and (2) “tests developed for identification of ASR reactivity products (e.g., use of sodium cobalt nitrite solution to detect potassium and uranyl acetate to detect sodium).”³⁶¹

NextEra does not dispute these statements in NUREG/CR-7171 itself. Instead, it argues that C-10’s pleadings failed to explain how NUREG/CR-7171 exposes a material deficiency in NextEra’s LAR.³⁶² We have no difficulty discerning the connection between these provisions of NUREG/CR-7171 and C-10’s claim that the test program specimens were not representative of Seabrook concrete. Contention D maintains that, for the test program results to apply to Seabrook, the test specimens must be representative of the reinforced concrete at Seabrook.³⁶³ Contention D identifies heat and radiation, together with other factors, as contributing to the “non-linear advancement of ASR over the course of 35-40 years” in the concrete structures at Seabrook.³⁶⁴ NUREG/CR-7171 supports C-10’s argument by noting the “coupling effect between radiation and ASR that can potentially accelerate ASR activity.”³⁶⁵ Contention D further alleges that the test program specimens fail to accurately represent the characteristics of Seabrook concrete because they do not reflect the effects of heat and radiation, among other variables.³⁶⁶

As far as we can determine, ASR has not yet been identified at Seabrook in the structures specifically identified in NUREG/CR-7171 (the biological shield or the support for the reactor pressure vessel). NextEra acknowledges, however, that “Seabrook’s [Structures Monitoring Program] treats all structures that are subject to monitoring as if ASR is present — thus, there is no need to ‘detect’ what it already assumes.”³⁶⁷ NextEra also quotes a letter it sent to the NRC, in which it reported that “all of the concrete structures at Seabrook Station are susceptible to ASR. For this reason, NextEra’s ASR Monitoring Program assumes that every structure has ASR, regardless of whether it has actually been identi-

³⁵⁹ *Id.*

³⁶⁰ *Id.*

³⁶¹ *Id.*

³⁶² NextEra’s Ans. to Petition at 46-47.

³⁶³ Petition at 9 (quoting MPR-4273 at 6-3).

³⁶⁴ *Id.* at 10.

³⁶⁵ NUREG/CR-7171 at 88.

³⁶⁶ Petition at 11.

³⁶⁷ NextEra’s Ans. to Petition at 34-35.

fied and confirmed. As a result, NextEra performs visual ASR examinations of all concrete structures, as though those structures have confirmed ASR.”³⁶⁸

Given that all Seabrook concrete structures are not only susceptible to ASR, but are assumed to have ASR, C-10 has raised a material issue by alleging that the large-scale test program failed to consider the potential impact of heat and radiation on ASR activity in Seabrook concrete structures. NextEra does not claim that the concrete specimens used in the test program were in fact exposed to heat and radiation, much less exposed at levels representative of those at Seabrook. NextEra does state that MPR-4273 “describes the key features of its programmatic design for representativeness.”³⁶⁹ However, after reviewing the cited pages of that document, we have found nothing therein that addresses the impacts of heat and radiation on Seabrook concrete.

Thus, NUREG/CR-7171 supports C-10’s claim of a material deficiency in the test program. This is a disputed issue worthy of examination at an evidentiary hearing, given that the actual Seabrook concrete has been exposed to radiation for decades, even if at low levels in most places.³⁷⁰ The apparent lack of radiation exposure of the large-scale test program samples explains why the Staff included that issue in its reformulated Contention D as one of the reasons why the test results may not be representative of the Seabrook concrete.³⁷¹

Finally, like the Staff, we conclude that C-10 has shown a genuine dispute with the application, as required by 10 C.F.R. § 2.309(f)(1)(vi), by citing the LAR’s claims that the test program is representative of the Seabrook concrete.³⁷² C-10 emphasizes that, in the words of the LAR itself, the large-scale test program was designed to be “representative” of the structural characteristics of safety-related structures at Seabrook.³⁷³ C-10 argues, however, that “[w]hile the testing at FSEL yielded important and valuable data about the behavior of short-term ASR progression in ‘confinement,’ the FSEL data cannot, in any meaningful way, ‘stand in’ for or ‘represent’ the current state of in-situ concrete at the Seabrook reactor, under sustained attack from Alkali-Silica Reaction.”³⁷⁴

³⁶⁸ *Id.* at 35 n.150 (quoting Letter from D. Curtland, NextEra, to NRC Document Control Desk, Response to Request for Voluntary Response to 2.206 Petition Regarding Methods for Identification of Concrete Affected by Alkali-Silica Reaction at 2 (Feb. 23, 2016) (ADAMS Accession No. ML16056A083)).

³⁶⁹ *Id.* at 46 (citing MPR-4273 at 2-6 to 2-7).

³⁷⁰ NUREG/CR-7171 at 88.

³⁷¹ Staff’s Ans. to Petition at 27.

³⁷² *Id.* at 28.

³⁷³ Petition at 8-9 (citing MPR-4288 at 4-1, 4-3).

³⁷⁴ *Id.* at 11.

C-10 has supported this argument by pointing to the test program's apparent failure to consider the effects of heat and radiation.³⁷⁵

NextEra argues that Contention D fails to raise a genuine dispute with the LAR because it allegedly fails to address the bounding and conservative nature of the large-scale test program's results.³⁷⁶ In a similar vein, NextEra also argues that C-10 "fails to address or challenge the conclusion in MPR-4288 that the [ACI 318-71 and ASME Code] equations remain valid and indicate that using the original specified concrete strength and code equations is conservative."³⁷⁷ C-10 responded that "NextEra's contractor for the FSEL project established the relevance of 'representativeness' for all of us," pointing to the statement that "NextEra commissioned MPR/FSEL to perform large-scale structural testing using specimens that were designed and fabricated to be *representative* of structures at Seabrook Station."³⁷⁸ As C-10 puts it, the question that must be resolved is whether the test program achieved a level of representativeness that allows NextEra and its consultant "to use data from the FSEL test program, plugged into the pertinent equations, [to] track the rate of ASR degradation at Seabrook?"³⁷⁹ We agree with C-10 that, given the LAR's acknowledgment that application of the results of the large-scale test program depends on the representativeness of the test specimens, Contention D necessarily challenges all applications of the test program results.

We also note that the LAR itself acknowledges that because "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 . . . periodic monitoring of ASR at Seabrook is necessary to ensure that the conclusions of the large-scale test program remain valid and that the level of ASR does not exceed that considered under the test programs."³⁸⁰ Thus, whether the test program results will continue to be conservative or bounding of Seabrook concrete depends on the results of the monitoring program, and the material dispute raised by Contention D concerning the representativeness of the test program specimens is directly relevant to determining the adequacy of NextEra's proposed monitoring program. As the Staff explains, the monitoring program, as well as the acceptance criteria and inspection intervals proposed in the LAR, "are based in part on the LAR's finding that the test program is representative of the Seabrook concrete."³⁸¹ The Staff identifies specific aspects of the monitoring program that

³⁷⁵ Petition at 11.

³⁷⁶ NextEra's Ans. to Petition at 47 (citing Evaluation of Proposed Change at 16 of 73).

³⁷⁷ *Id.* at 45.

³⁷⁸ C-10's Reply at 4 (quoting MPR-4288 at 4-1) (emphasis in original).

³⁷⁹ *Id.*

³⁸⁰ Evaluation of Proposed Change at 16 of 73.

³⁸¹ Staff's Ans. to Petition at 28.

are based on the test program, and thus are subject to the claim that the test program is not sufficiently representative of Seabrook concrete.³⁸² Of primary relevance to Contention D, the LAR justifies a monitoring program based on the CCI and snap ring borehole extensometers because those methodologies were found to be accurate and reliable in the test program.³⁸³ In addition, because NextEra will use “an empirical correlation developed in the large-scale test program” 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 test program is representative of Seabrook concrete.³⁸⁴ Thus, the dispute concerning the representativeness of the test program specimens is material to the Staff’s determination whether the monitoring program will yield data that accurately represent ASR advancement in Seabrook concrete. The Staff’s reformulated contention expressly recognizes this connection between the representativeness of the large-scale test program and the adequacy of the monitoring program.³⁸⁵

Contention D repeats C-10’s claim in Contentions A–C that NextEra must perform a comprehensive petrographic analysis of Seabrook concrete. NextEra argues that because it is conducting core sample testing, C-10’s claim that NextEra “turned away from core sampling” fails to demonstrate a genuine dispute of material fact with the LAR.³⁸⁶ NextEra’s argument that it is conducting core sample testing substantially reiterates its arguments concerning Contentions A and C, where in response to C-10’s demand for “[t]horough petrographic analysis” of Seabrook concrete,³⁸⁷ NextEra maintains that it is conducting mechanical property testing of sample cores from Seabrook.³⁸⁸ NextEra again argues that it is in fact doing what C-10 wants, referring to its more detailed arguments on Contentions A and C.³⁸⁹ Specifically, NextEra states that it is “conducting material property testing of sample cores from Seabrook to determine the through-thickness expansion to date using the methodology defined in MPR-4153.”³⁹⁰ NextEra further states that “[t]his testing examines the current elastic

³⁸² *Id.* at 28 n.127.

³⁸³ *Id.* (quoting Evaluation of Proposed Change at 16, 30 of 73).

³⁸⁴ Evaluation of Proposed Change at 30 of 73.

³⁸⁵ Staff’s Ans. to Petition at 26.

³⁸⁶ NextEra’s Ans. to Petition at 43 (quoting Petition at 10).

³⁸⁷ Petition at 6.

³⁸⁸ NextEra’s Ans. to Petition at 20, 36.

³⁸⁹ *Id.* at 43-44.

³⁹⁰ *Id.* (citing MPR Associates, MPR-4153, Seabrook Station, Approach for Estimating Through-Thickness Expansion from Alkali Silica Reaction at iv (rev. 1, June 2015) (ADAMS Accession No. ML15183A020) [hereinafter MPR-4153]). MPR-4153 is Enclosure 3 (Non-Proprietary) and Enclosure 5 (Proprietary) to the Supplement to the LAR, and is therefore part of the LAR.

modulus of the concrete, which in turn requires compressive strength testing.”³⁹¹ Because “NextEra interprets Petitioner’s call for the ‘full range’ of testing to mean compressive strength testing and elastic modulus testing for purposes of structural analyses,” it concludes that the core sample testing described in the LAR is equivalent to the core sample testing that C-10 contends is necessary.³⁹²

NextEra’s argument depends on its interpretation of C-10’s demand for comprehensive petrographic analysis as limited to compressive strength and elastic modulus testing of extracted concrete cores to determine expansion to date (i.e., to the date extensometers are installed in specific areas).³⁹³ Contention D does quote Dr. Brown’s opinion that, “[i]n concrete restrained by reinforcement, mechanical testing of extracted concrete cores to establish compressive strength and [elastic] moduli are appropriate.”³⁹⁴ But, critically, that is not the only core sample testing that C-10 contends is necessary. We have already reviewed NextEra’s argument in our ruling on Contention A, where we explained that C-10 wants more than testing of sample cores from Seabrook to determine the through-thickness expansion to date.³⁹⁵ It also wants comprehensive petrographic analysis of Seabrook because of the possibility that “very localized and intensely damaging expansion could occur in planes parallel to the planes of the walls which would not result in a significant through-wall dimensional change,” which according to Dr. Brown would not be detected by the extensometers that will be installed after the core samples are removed.³⁹⁶ It is certainly not apparent to us that compressive strength and elastic modulus testing of extracted concrete cores to determine expansion up to the date of installation of the extensometers would be sufficient to detect the “very localized and intensely damaging expansion” that Dr. Brown contends may not be detected by the extensometers once they are installed. This is a technical issue that should be addressed after the contention is admitted.³⁹⁷

C-10 further maintains, citing the opinion of Dr. Brown, that “although NextEra’s plan to utilize some non-standard tests may have merit, they are incomplete NextEra must also systematically evaluate the concrete via pet-

³⁹¹ *Id.* (citing MPR-4273 at 5-1).

³⁹² *Id.*

³⁹³ *See id.*

³⁹⁴ Petition at 9 (quoting Letter from Dr. David Wright, UCS, to William M. Dean, Regional Administrator, NRC Region 1 at 2 (Sept. 13, 2012) (ADAMS Accession No. ML12265A398) [hereinafter Wright Letter]). Dr. Wright relies on the opinion of Dr. Brown, whom he describes as an expert retained by UCS. Wright Letter at 1.

³⁹⁵ *See supra* Part IV.A.2.a at pp. 100-101.

³⁹⁶ *Id.*; Brown 2016 Commentary at 2-3.

³⁹⁷ *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 156 (1991).

rography and physical testing of cores, and evaluate the expansive capacity of ASR based on [American Society for Testing and Materials (ASTM)] standard tests as promulgated by ASTM Committee C-9 on Concrete and Aggregates.”³⁹⁸ C-10 confirmed at oral argument that it seeks “thorough petrographic analysis of core samples” in conformance with standards ACI 349.3R and ASTM 856-11.³⁹⁹ ASTM 856-11 describes the standard practice under which a trained petrographer examines hardened concrete using a stereomicroscope.⁴⁰⁰ Among other things, laboratory specimens of concrete may be examined under the stereomicroscope “[t]o establish whether alkali-silica reaction has taken place, what aggregate constituents were affected, what evidence of the reaction exists, and what were the effects of the reaction on the concrete.”⁴⁰¹ The petrographic examination of concrete specimens pursuant to ASTM 856-11 appears to involve a quite different procedure from NextEra’s “material property testing of sample cores from Seabrook to determine the through-thickness expansion to date using the methodology defined in MPR-4153.”⁴⁰² The cited part of MPR-4153 does not mention either ASTM 856-11 specifically or stereoscopic examination of concrete specimens in general.

Therefore, we disagree with NextEra’s interpretation that the LAR provides for all of the core sample testing that C-10 claims is necessary. With respect to Contention D, C-10 has demonstrated a genuine dispute of material fact as required by section 2.309(f)(i)(vi) and has otherwise satisfied the admissibility criteria. We therefore admit Contention D.

e. Contention H

Contention H states:

The proposed inspection intervals laid out in LAR 16-03 are too long, and too fixed, to effectively measure the ongoing effects of ASR to structures at the Seabrook Nuclear Power Plant in a timely manner.⁴⁰³

Table 5 of the LAR includes the SMP’s ASR in-plane expansion acceptance criteria and monitoring frequencies.⁴⁰⁴ Regions of structures with signs of ASR are classified based upon the total ASR in-plane expansion to date. Contention

³⁹⁸ Petition at 9 (quoting Wright Letter at 2-3).

³⁹⁹ Tr. at 19, 30, 35.

⁴⁰⁰ See ASTM C856-11.

⁴⁰¹ *Id.* at 5.

⁴⁰² NextEra’s Ans. to Petition at 43 (citing MPR-4153 at iv).

⁴⁰³ Petition at 15.

⁴⁰⁴ Evaluation of Proposed Change at 32 tbl.5 of 73.

H maintains that the monitoring intervals that NextEra proposes for Tier 2 and Tier 3 areas are too long and too fixed to effectively measure the ongoing effects of ASR to structures. C-10 claims that there is no real knowledge of the speed of concrete deterioration caused by advancing ASR, i.e., “there is 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 are not appropriately conservative.⁴⁰⁵ For support, C-10 relies on the comments of Dr. Brown that we have previously reviewed in connection with Contention B.⁴⁰⁶ Dr. Brown questions NextEra’s ability to predict the responses of Seabrook structures to ASR without direct physical testing of concrete from those structures.⁴⁰⁷ Because C-10 maintains that the rate of progression of ASR degradation of concrete at Seabrook has not been adequately tested or evaluated, it argues that NextEra’s proposed monitoring intervals fail to provide adequate protection of public health and safety.⁴⁰⁸

NextEra disputes C-10’s claim that there is insufficient knowledge of the speed of disintegration of concrete caused by advancing ASR. In defense of its proposed monitoring intervals in Table 5, NextEra cites MPR reports that assert that Seabrook’s ASR has a “slow rate of change,”⁴⁰⁹ and an NRC report that describes “the slow progression of the ASR expansion” at Seabrook.⁴¹⁰ The NRC report concluded that Seabrook’s ASR degradation would have been identified at the time of construction had it not been for the slow progression of the ASR. NextEra also argues that its monitoring schedule is consistent with the guidance from the Federal Highway Administration (FHWA) cited in the LAR, which “recommends [for ASR-affected structures] inspections from six months to 5 years depending on the age of the damage to the structure and the rate of change in degradation.”⁴¹¹ As for C-10’s charge that the inspection intervals are “too fixed,” NextEra maintains that if it “determines that the rate of ASR degradation is changing, NextEra will change its monitoring intervals accordingly. In fact, such action is required by the Maintenance Rule.”⁴¹²

On the other hand, the Staff concludes that Contention H is admissible when added to Contention D.⁴¹³ In its discussion of Contention D, the Staff observed that the inspection intervals (as well as the monitoring program and the accep-

⁴⁰⁵ Petition at 15.

⁴⁰⁶ *Id.*; see *supra* Part IV.A.2.b at p. 104.

⁴⁰⁷ See Petition at 15.

⁴⁰⁸ *Id.* at 16.

⁴⁰⁹ See MPR-4288 at 1-2; MPR-4153 at 1-2.

⁴¹⁰ NRC Inspection Report at 3.

⁴¹¹ NextEra’s Ans. to Petition at 65 (citing Evaluation of the Proposed Change at 33 of 73).

⁴¹² *Id.* (citing 10 C.F.R. § 50.65(a)(1)).

⁴¹³ Staff’s Ans. to Petition at 38.

tance criteria) are based in part on the LAR's assertion that the test program is representative of the Seabrook concrete.⁴¹⁴ Thus, if the test program is not sufficiently representative of Seabrook concrete, the LAR's reliance on the test program to support the inspection intervals would be undermined. Referring to Contention H, the Staff notes C-10's argument that there is an insufficient technical rationale for NextEra's proposed inspection intervals because they are derived from the large-scale test program and not from the testing of Seabrook concrete. Thus, the Staff concludes, the "issue in dispute is the representativeness of the test program," and to that extent "C-10's challenge to the appropriateness of the LAR's inspection intervals amounts to an admissible contention when added to Contention D."⁴¹⁵

We conclude that Contention H is admissible in part, as explained below. The specific factual issue that C-10 raises is the adequacy of the proposed inspection schedule in Table 5 of the LAR for monitoring ASR degradation in Seabrook Category 1 structures.⁴¹⁶ Given the uncertainty about the speed of ASR degradation, the timing of an abrupt concrete failure, and whether the large-scale test program accurately assesses the rate of concrete degradation at Seabrook, C-10 maintains that Table 5 should be ruled invalid until such time as adequate tests of Seabrook's concrete are completed and properly analyzed.⁴¹⁷ C-10 has thus identified both the issue in dispute and the basis of Contention H as required by section 2.309(f)(1)(i) and (ii).

Contention H is within the scope of this proceeding as defined by the Commission in its initial *Federal Register* notice, which provided an opportunity for a hearing on LAR 16-03 that would revise the Seabrook UFSAR to include methods for analyzing Seismic Category I structures with concrete affected by ASR.⁴¹⁸ Contention H challenges the monitoring intervals of Table 5 of the LAR and is therefore within the scope of the proceeding in accordance with section 2.309(f)(1)(iii). Contention H is material to the findings that the NRC must make relative to the adequacy of Table 5 in section 3.5.1 of LAR 16-03, and thus satisfies section 2.309(f)(1)(iv). The NRC must determine that Table 5 will not be inimical to the common defense and security or to the health and safety of the public.

⁴¹⁴ *Id.* at 28 & n.127 (citing Evaluation of the Proposed Change at 31-32 of 73).

⁴¹⁵ *Id.* at 38.

⁴¹⁶ Petition at 15.

⁴¹⁷ *Id.* at 15-16.

⁴¹⁸ 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. 9601, 9604 (Feb. 7, 2017).

Consistent with section 2.309(f)(1)(v), C-10 has also identified the expert opinions on which it relies. Dr. Brown’s opinions are sufficient to create a genuine material dispute as to the adequacy of inspection time intervals delineated in Table 5, as required by section 2.309(f)(1)(vi). NextEra points out that Dr. Brown does not directly address the monitoring intervals in the LAR.⁴¹⁹ But Dr. Brown does state that “[t]he course of ASR in restrained samples is known to initially cause pore filling, resulting in densification, which will for some period of time counteract the loss of structural capacity. . . . However, eventually cracking does occur with an abrupt loss of mechanical properties.”⁴²⁰ Dr. Brown questions whether NextEra has the ability to predict such a sudden change due to advancing ASR in the absence of actually testing the Seabrook concrete.⁴²¹ His opinion supports C-10’s challenge to NextEra’s proposed monitoring intervals in Table 5, which assumes a slow progression of ASR expansion at Seabrook.⁴²²

NextEra criticizes C-10 for failing to “acknowledge, discuss, or dispute” the FHWA guidance cited in the LAR.⁴²³ But NextEra’s criticism misses the point. Although the LAR does refer to the FHWA guidance, it does so only to support the monitoring intervals in Table 6, “Structure Deformation Monitoring Requirements.”⁴²⁴ In contrast, Contention H (and the technical support proffered in support of Contention H) does not challenge the monitoring intervals in Table 6 — rather it challenges the monitoring intervals in Table 5, “ASR Expansion Acceptance Criteria and Condition Monitoring Frequencies.”⁴²⁵ Because the FHWA guidance was not cited in support of Table 5, C-10 had no reason to address it.

NextEra cites two MPR reports that refer to “low level of observed cracking and the apparent slow rate of change” of ASR expansion at Seabrook,⁴²⁶ and an NRC inspection report from 2013 referring to the “slow progression of the ASR expansion” at Seabrook.⁴²⁷ NextEra relies on these statements to support the assumption of a continuously slow rate of ASR expansion not only in the past but through the termination of the current Seabrook license in 2030.⁴²⁸ Dr.

⁴¹⁹ NextEra’s Ans. to Petition at 66.

⁴²⁰ Brown 2016 Commentary at 3.

⁴²¹ *Id.*

⁴²² NextEra’s Ans. to Petition at 64.

⁴²³ *Id.* at 65.

⁴²⁴ Evaluation of the Proposed Change at 33 of 73.

⁴²⁵ Petition at 15; Evaluation of the Proposed Change at 32 of 73.

⁴²⁶ NextEra’s Ans. to Petition at 64 (citing MPR-4288 at 1-2; MPR-4153 at 1-2).

⁴²⁷ *Id.* (quoting Letter from R. Lorson, NRC, to K. Walsh, NextEra, “Seabrook Station, Unit No. 1 - Confirmatory Action Letter Follow-up Inspection - NRC Inspection Report 05000443/2012010,” at 3 (Aug. 9, 2013) (ADAMS Accession No. ML13221A172)).

⁴²⁸ *Id.*

Brown clearly disputes the reasonableness of that assumption. He maintains that a slow rate of ASR progression may eventually give way to more rapid deterioration that the test program failed to address. According to Dr. Brown, when the mitigating effect of restraint is lost, rapid microcracking and accelerating concrete degradation are likely, with the potential for rapid loss of structural integrity.⁴²⁹ Because the LAR's monitoring intervals assume a consistent and slow rate of ASR progression, Dr. Brown's opinion identifies a clear dispute of material fact that has significant implications for the Staff's evaluation of NextEra's monitoring intervals. At the contention admissibility stage, we do not decide which side has the better argument on the merits.⁴³⁰ We need only conclude, as we do, that C-10 has demonstrated a genuine dispute of material fact sufficient to support the admission of Contention H.

We agree with NextEra, however, that C-10's claim in Contention H that the monitoring intervals are "too fixed" is inadmissible. NextEra acknowledges that it is obligated by NRC regulation to change the monitoring intervals if it determines that the rate of ASR degradation is changing.⁴³¹ Therefore, the claim that the monitoring intervals are "too fixed" is based on a misunderstanding of the governing regulation that, in any event, is not subject to challenge in this proceeding absent a waiver request showing of special circumstances, which C-10 has not provided in this instance.⁴³²

Accordingly, Contention H is admissible but limited to the appropriate length of monitoring intervals.

3. *The Reformulated Contention*

Pursuant to 10 C.F.R. §§ 2.319(j) and 2.329(c)(1),⁴³³ licensing boards have the authority to hold conferences in order to simplify and clarify the petitioner's contentions for adjudication.⁴³⁴ Pursuant to this authority, boards possess the authority to reformulate contentions in order to consolidate multiple similar contentions, trim out extraneous or inadmissible portions of contentions, and

⁴²⁹ See Brown 2016 Commentary at 2-3.

⁴³⁰ *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 443 (2011).

⁴³¹ NextEra's Ans. to Petition at 65 (citing 10 C.F.R. § 50.65(a)(1)).

⁴³² See 10 C.F.R. § 2.335(b).

⁴³³ Section 2.319(j) authorizes Boards to "[h]old conferences before or during a hearing for . . . [the] simplification of contentions," while section 2.329(c)(1) authorizes Boards to hold a prehearing conference to consider matters including the "[s]implification, clarification, and specification of the issues."

⁴³⁴ *Crow Butte*, CLI-09-12, 69 NRC at 552-53.

clarify issues.⁴³⁵ We conclude that the admissible portions of Contentions A, B, C, D, and H all pertain to the same issue — whether the large-scale test program is representative of Seabrook’s concrete and the corresponding consequences if the concrete is not representative — and thus it is appropriate to consolidate the contentions in order to clarify the issue to be resolved at the evidentiary hearing.

As we noted *supra*, the Staff does not consider Contentions A, B, C, D, G, and H to be independently admissible, but asserts that, due to the interrelated nature of the contentions, the contentions can be consolidated into a single admissible contention.⁴³⁶ Thus, the Staff proposes that we adopt the following reformulated contention that consolidates Contentions A, B, C, D, G, and H:

The MPR/FSEL large-scale test program is not bounding of the Seabrook concrete because of the age of the Seabrook concrete, the length of time that ASR has propagated in the Seabrook concrete, the effect of water at varying levels of height and varying levels of salt concentration on the Seabrook concrete, the effect of heat on the Seabrook concrete, and the effect of radiation on the Seabrook concrete. As a result, the proposed monitoring, acceptance criteria, and inspection intervals are not adequate.⁴³⁷

NextEra objects to the Staff’s proposal to reformulate C-10’s contentions at all, claiming that the Staff’s act is “unprecedented,” and is inconsistent with the Staff’s authority because the Staff is not authorized to introduce new contentions. The Staff, however, is authorized to propose a reformulation of a petitioner’s contentions pursuant to 10 C.F.R. § 2.309(i)(1) as part of its authority to address its view of the admissibility of the petitioner’s proffered contentions.⁴³⁸ Given that licensing boards may reformulate contentions, parties may ask the Board to do so. Furthermore, the Staff’s perspective on whether the Board should reformulate a petitioner’s proffered contentions is especially valuable, given that the Staff provides an “independent regulatory perspective for the record,” and its perspective is that of “public servants, serving the public interest.”⁴³⁹ Thus, the Staff acted within the scope of its authority in proposing the reformulated contention to the Board.

Unlike the Staff, we have concluded that Contentions A, B, C, D, and H

⁴³⁵ See *MOX Servs.*, LBP-08-11, 67 NRC at 482-83; see also *Crow Butte*, CLI-09-12, 69 NRC at 552 n.79 (adopting the *MOX Services* Board’s reasoning for reformulating contentions).

⁴³⁶ See *supra* Part IV at p. 89.

⁴³⁷ Staff’s Ans. to Petition at 26.

⁴³⁸ See 10 C.F.R. § 2.309(i)(1).

⁴³⁹ Commission Voting Record, Final Rule — 10 C.F.R. Parts 2, 12, 51, 54, and 61, “Amendments to Adjudicatory Process Rules and Related Requirements” at 7 of 39 (unnumbered) (ADAMS Accession No. ML121840015).

are at least partially independently admissible.⁴⁴⁰ Nonetheless, we agree with the Staff that it is appropriate to consolidate the admissible contentions into a single reformulated contention. As the Staff asserts, the key issue is Contention D's challenge to the representativeness of the large-scale test program, and Contentions A, B, C, and H's alleged consequences from its alleged lack of representativeness.⁴⁴¹ This issue does not need to incorporate the alleged bases for the lack of representativeness of the test program, namely the

age of the Seabrook concrete, the length of time that ASR has propagated in the Seabrook concrete, the effect of water at varying levels of height and varying levels of salt concentration on the Seabrook concrete, the effect of heat on the Seabrook concrete, and the effect of radiation on the Seabrook concrete.⁴⁴²

Given that, at this state of the proceedings, "we admit contentions, not bases," we conclude it is appropriate to adopt a simplified version of the Staff's proposed reformulation that focuses solely on the representativeness of the test program and the corresponding consequences.⁴⁴³ Thus, we adopt the following reformulated 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.

Our reformulation includes the consolidation of Contentions A, B, C, D, and H, but does not consolidate Contention G as originally proposed by the Staff. Contention G is not consolidated because (1) as we conclude *infra*, it is not independently admissible,⁴⁴⁴ and (2) its connection with Contentions A, B, C, D, and H is too attenuated.⁴⁴⁵

⁴⁴⁰ See *supra* Part IV.A.2.a-e.

⁴⁴¹ Staff's Ans. to Petition at 28.

⁴⁴² *Id.* at 26.

⁴⁴³ See *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), LBP-09-26, 70 NRC 939, 988 (2009).

⁴⁴⁴ See *infra* Part IV.C.3 at 97.

⁴⁴⁵ As the Staff admitted at oral argument, Contention G is only "slightly related" to Contention D. Tr. at 91. The Staff further stated that the inclusion of Contention G is not necessary to admit the reformulated contention. Tr. at 92.

B. The Reformulated Contention Is Admissible Even if Not Every Component Is Independently Admissible

Even assuming *arguendo* that one or more of Contentions A, B, C, D, or H is not independently admissible, we conclude that our reformulation appropriately consolidates C-10's arguments into a single admissible contention.

NextEra objects to this approach of admitting the reformulated contention, arguing that if C-10's individual contentions are inadmissible, reformulating them into a single admissible contention is contrary to Commission precedent.⁴⁴⁶ The Staff argues, however, that Contentions A, B, C, D, and H can be consolidated into a single admissible contention without supplementing the Petition, and we agree. According to the Staff, Contention D, challenging the representativeness of the large-scale test program, provides a specific issue to be controverted.⁴⁴⁷ While the Staff believes Contention D is not admissible in and of itself for lack of explaining how the lack of representativeness is material to the findings the Staff must make, the Staff notes that Contentions A, B, C, and H do provide the consequences of a lack of representativeness of the large-scale test program.⁴⁴⁸ Thus, according to the Staff, when Contention D is read in conjunction with Contentions A, B, C, and H, all of 10 C.F.R. § 2.309(f)(1)'s requirements are satisfied.⁴⁴⁹

The Staff's reading of the Petition is consistent with our own interpretation. As we discussed *supra*, many of C-10's contentions are interrelated. For instance, in Part IV.A.1.b, we discussed the interconnection between Contentions A, B, and H in that all three challenge facets of NextEra's approach to monitoring for ASR.⁴⁵⁰ We further explained that Contentions B and C are closely related,⁴⁵¹ and that Contention D implicates the monitoring program, acceptance criteria, and inspection intervals — all of which are specifically discussed in Contentions A, B, C, and H.⁴⁵²

Notably, the Staff's and our interpretation of the Petition, which forms the basis for consolidating C-10's contentions, requires no supplementation of the Petition. It only requires that the Petition be read as a whole. Moreover, at oral argument, the Board asked C-10 to further clarify whether its contentions were interrelated by asking if its contention was that the test program data were not representative of Seabrook, and therefore anything associated with it was also

⁴⁴⁶ NextEra's Reply to Staff's Ans. at 6-9.

⁴⁴⁷ Staff's Ans. to Petition at 28.

⁴⁴⁸ *Id.*

⁴⁴⁹ *See id.*; *see also* Tr. at 85-86.

⁴⁵⁰ *See supra* Part IV.A.1.b at pp. 106-07.

⁴⁵¹ *See supra* Part IV.A.1.c at pp. 108-09.

⁴⁵² *See supra* Part IV.A.1.d at p. 114.

not appropriate for Seabrook.⁴⁵³ In response, C-10 confirmed its argument that “the testing that was done . . . [and] its applicability to Seabrook is unknown.”⁴⁵⁴ This reframing of C-10’s issue with the LAR is in essence our reformulation of portions of C-10’s multiple contentions all referencing the one key dispute C-10 has with the LAR — that the large-scale test program is not representative of the progression of ASR in the Seabrook concrete, and, because the large-scale test program is not representative, NextEra’s other methods for detecting and testing for ASR progression, which are based on that program, are inadequate.

Because this argument was put forth, though inarticulately, by C-10, the reformulated contention does not supplement arguments that are missing from the Petition. Instead, it consolidates those portions of the contentions that pertain to or are implicated by the representativeness of the large-scale test program in order to provide clarity. Providing additional clarity is one of the principal purposes served by the adoption of reformulated contentions.⁴⁵⁵ Since all of the support and arguments used to consolidate C-10’s contentions into our reformulated contention are sourced from the Petition, the reformulation falls within the permissible boundaries established by the Commission.

Finally, it is worth noting that the Commission has approved substantially more significant reformulations than the reformulation in this case.⁴⁵⁶ For example, the *MOX Servs.* board extensively rewrote a contention that was originally one sentence, transforming it into a three-paragraph reformulated contention.⁴⁵⁷ The board submitted the reformulated contention to the parties for review and then rewrote the contention again based on their comments.⁴⁵⁸ Obviously, then, the final contention was quite different from that proposed by the petitioners. Far from criticizing the board, the Commission cited with approval its legal analysis of board authority to rewrite contentions.⁴⁵⁹ The *MOX Servs.* board, in the text to which the Commission referred, stated that, while boards may not pro-

⁴⁵³ Tr. at 36.

⁴⁵⁴ *Id.*

⁴⁵⁵ See *Turkey Point*, CLI-15-25, 82 NRC at 401 (“[T]he Board did not supply its own basis for the contention but reasonably reformulated it to clarify the issue for hearing.”).

⁴⁵⁶ The Commission concluded that a board may decide a contention admissibility issue on a theory different from those argued by the litigants, provided that it explains the specific basis of its ruling and gives the litigants a chance to present argument and, where appropriate, evidence “regarding the Board’s new theory.” *Tennessee Valley Authority* (Bellefonte Nuclear Power Plant, Units 3 and 4), CLI-09-3, 69 NRC 68, 73 n.24 (2009) (citing *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 55-56 (1978) (quoting *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 354 (1975))).

⁴⁵⁷ *MOX Servs.*, LBP-08-11, 67 NRC at 481.

⁴⁵⁸ *Id.* at 487.

⁴⁵⁹ *Crow Butte*, CLI-09-12, 69 NRC at 553 n.79.

vide the threshold information required for contention admissibility, they have “reformulated a wide range of contentions in order either to *eliminate extraneous issues or to consolidate related issues for a more efficient proceeding.*”⁴⁶⁰ The *MOX Servs.* board also noted that 10 C.F.R. §§ 2.319(j) and 2.329(c)(1) authorize boards to reformulate contentions.⁴⁶¹

Lastly, we consider whether the reformulated contention independently satisfies 10 C.F.R. § 2.309(f)(1)’s admissibility criteria. NextEra contends that the reformulated contention is inadmissible because it “remains unsupported and ignores, rather than disputes, relevant portions of the LAR.”⁴⁶² However, all of NextEra’s arguments largely rehash its arguments from its Answer concerning why the individual Contentions A, B, C, D, and H are inadmissible, as we detailed *supra* in Part IV.A.2.a–e.⁴⁶³ Given that we have already rejected most of NextEra’s arguments concerning the admissibility of the individual contentions, and have narrowed the contentions based on NextEra’s valid arguments, we need not reevaluate the same arguments here.

Furthermore, we accept the Staff’s argument that, even if Contentions A, B, C, D, and H do not form individually admissible contentions, when they are consolidated into a single contention, the reformulated contention satisfies the admissibility criteria. First, as we noted *supra* in Part IV.A.2.d, the question raised by whether the large-scale test program is representative of the concrete at Seabrook satisfies 10 C.F.R. § 2.309(f)(1)(i)’s requirement that the contention “[p]rovide a specific statement of the issue of law or fact to be raised or controverted.”⁴⁶⁴ Second, as required by 10 C.F.R. § 2.309(f)(1)(ii), the Petition provides a basis for this contention in that the test program does not sufficiently account for the nonlinear progression of ASR in concrete subject to the effects of heat and radiation.⁴⁶⁵ Third, as required by 10 C.F.R. § 2.309(f)(1)(iii), the issue is within the scope of the proceeding because the representativeness of the large-scale test program, and the adequacy of the proposed monitoring, acceptance criteria, and inspection intervals, all concern the sufficiency of the LAR.⁴⁶⁶ Fourth, as required by 10 C.F.R. § 2.309(f)(1)(iv), the contention concerns an issue that is material to the findings that the NRC must make because, if the large-scale test program is not representative of the concrete at Seabrook, the NRC may not be able to determine that the proposed monitoring, acceptance

⁴⁶⁰ *MOX Servs.*, LBP-08-11, 67 NRC at 482-83 (emphasis in original).

⁴⁶¹ *Id.* at 483.

⁴⁶² NextEra’s Reply to Staff’s Ans. at 13.

⁴⁶³ *See id.* at 13–16.

⁴⁶⁴ *See supra* Part IV.A.2.d at p. 113.

⁴⁶⁵ *See supra* Part IV.A.2.d at pp. 117-18.

⁴⁶⁶ *See supra* Parts IV.A.2.a at p. 97, IV.A.2.b at pp. 104-05, IV.A.2.c at p. 110, IV.A.2.d at p. 113, IV.A.2.e at p. 123.

criteria, and inspection intervals are adequate and will not be inimical to the health and safety of the public.⁴⁶⁷ Fifth, as we detailed *supra*, each of the individual contentions is supported by adequate alleged facts or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(v).⁴⁶⁸ Lastly, because the LAR relies on the representativeness of the large-scale test program to the Seabrook concrete in order to justify its proposed monitoring, acceptance criteria, and inspection intervals, and C-10 disputed whether the test program could “in any meaningful way, ‘stand in’ for or ‘represent’ the current state of in-situ concrete at the Seabrook reactor,” the contention raises a genuine dispute on a material issue of law or fact, as required by 10 C.F.R. § 2.309(f)(1)(vi).⁴⁶⁹ Thus, we conclude that the reformulated contention satisfies the admissibility criteria.

C. Contentions E, F, G, I, and J Are Not Admissible

I. Contention E

Contention E states:

NextEra’s insistence that data from the FSEL testing is proprietary is not good science. The redaction of findings for any aspect of Seabrook’s ASR testing creates an air of secrecy that prevents review, and undermines any trust within the nearby communities that the problem is being handled with the public’s best interests at heart. NextEra’s cloaking of data behind a proprietary curtain harms the interests of the community around Seabrook as well as the nuclear community. C-10 anticipates that the proceedings initiated by our filing will result in this data seeing the light of day for the benefit of many.⁴⁷⁰

Contention E challenges NextEra’s use of proprietary information drawn from the large-scale test program 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.”⁴⁷¹ The Staff and NextEra both respond that this contention lacks materiality, impermissibly challenges NRC regulation, and is outside the scope of this license amendment proceeding.⁴⁷² The Board agrees with the Staff and NextEra.

⁴⁶⁷ 10 C.F.R. § 50.40; *see supra* Parts IV.A.2.a at pp. 97-99, IV.A.2.b at p. 106, IV.A.2.c at p. 109, IV.A.2.d at pp. 113-14, IV.A.2.e at p. 123.

⁴⁶⁸ *See supra* Parts IV.A.2.a at pp. 96-97, IV.A.2.b at p. 105, IV.A.2.c at p. 110, IV.A.2.d at pp. 115-16, IV.A.2.e at p. 124.

⁴⁶⁹ *See supra* Part IV.A.2.d at pp. 117-18.

⁴⁷⁰ Petition at 11.

⁴⁷¹ *Id.*

⁴⁷² Staff’s Ans. to Petition at 39-40; NextEra’s Ans. to Petition at 50.

Section 2.390 of 10 C.F.R. allows applicants to withhold from public disclosure “[t]rade secrets and commercial or financial information obtained from a person and privileged or confidential.”⁴⁷³ As was noted previously, under 10 C.F.R. § 2.335, a petitioner cannot challenge any rule or regulation in an adjudicatory proceeding such as this one unless the petitioner also requests a waiver of the regulation for the proceeding. No such waiver was requested here. C-10 does not challenge whether the proprietary designation of this particular information was correct, but rather challenges whether proprietary information may be used at all. As such, C-10’s challenge to NextEra’s use of proprietary information is an impermissible challenge to a Commission regulation and thus falls outside the scope of this proceeding.

Even reading the Petition to assume that Contention E challenges the NRC’s decision to grant proprietary designation to this particular information, the use of this specific proprietary information in the LAR is not material to the findings the Staff must make regarding the LAR, as required under 10 C.F.R. § 2.309(f)(1)(iv). The designation of information as proprietary is not part of the LAR itself, but happens separately. Additionally, the Staff has access to all of this information regardless of whether it is withheld from public disclosure, so the designation of the information as proprietary will not affect the Staff’s findings.

For the above reasons, Contention E is not admitted. We note that if the parties seek, and the Board enters, an appropriate protective order, C-10 will be granted access to proprietary information related to its admitted challenges to the LAR.⁴⁷⁴

2. *Contention F*

Contention F States:

⁴⁷³ 10 C.F.R. § 2.390(a)(4).

⁴⁷⁴ *Id.* § 2.390(b)(6). We note that C-10 has already attempted to gain access to this information by petitioning the NRC pursuant to 10 C.F.R. § 2.206. However, the NRC denied the request. *See* Letter from Douglas A. Broaddus, Chief of Special Projects and Process Branch, Division of Operating Reactor Licensing, to Patricia Lang Skibbee & Natalie Hildt Treat of C-10, Response to Request Pursuant to 2.206, “Request for action under this subpart” (Sept. 11, 2017) (ADAMS Accession No. ML17248A295). In explaining its reasoning for the denial, the NRC stated that

there is an ongoing proceeding before the ASLB in which C-10 has intervened and raised an identical concern. . . . [T]o the extent the ASLB issues a ruling granting a hearing in the Seabrook LAR proceeding — the ASLB will govern the parties’ access to information, including information currently withheld as proprietary. In sum, because another ongoing proceeding is already addressing your concern, the NRC staff is declining your request for action under 10 CFR 2.206.

Id. at 2.

Assumptions made by NextEra and MPR concerning the continued robustness of reinforcing steel at the Seabrook reactor are unsupported by direct evidence. The long-term inundation, from brackish water, of foundation walls in safety-related areas of the complex, has exposed the concrete to elevated levels of salt. When combined with the chemical processes of ASR propagation through the concrete, this has likely created the conditions for corrosion of reinforcing steel to set in. Only in-situ monitoring for evidence of these impacts can ensure corrosion does not further degrade the strength of already impaired concrete.⁴⁷⁵

In Contention F, C-10 argues that “[a]ssumptions made by NextEra and MPR Associates concerning the continued robustness of reinforcing steel[, or rebar,] at the Seabrook reactor are unsupported by direct evidence.”⁴⁷⁶ C-10 goes on to state that exposure to brackish water in combination with ASR propagation “has likely created the conditions for corrosion of reinforcing steel to set in” and that “in-situ monitoring” is the only method that can “ensure corrosion does not further degrade the strength of already impaired concrete.”⁴⁷⁷ The Staff and NextEra both argue that Contention F is outside the scope of the proceeding because monitoring rebar for corrosion is already a part of the SMP in Seabrook’s current licensing basis, which is not being updated in the LAR.⁴⁷⁸ Both parties also argue that C-10 provides only speculation without evidentiary support,⁴⁷⁹ with NextEra going further to provide its own evidence that “several . . . inspections and analyses have confirmed” the plant’s rebar integrity.⁴⁸⁰

As stated previously, the scope of a license amendment proceeding is limited to issues identified in the hearing notice, the LAR, and the Staff’s environmental responsibilities relating to the application.⁴⁸¹ The plant’s rebar is already subject to a monitoring program that is not being altered in this LAR. Therefore, Contention F is outside the scope of this license amendment proceeding under 10 C.F.R. § 2.309(f)(1)(iii) and is not admitted.

3. *Contention G*

Contention G states:

Omitted from the LAR 16-03 is the “tipping point” concept. While there is ac-

⁴⁷⁵ Petition at 12.

⁴⁷⁶ *Id.*

⁴⁷⁷ *Id.*

⁴⁷⁸ Staff’s Ans. to Petition at 43; NextEra’s Ans. to Petition at 54.

⁴⁷⁹ Staff’s Ans. to Petition at 42; NextEra’s Ans. to Petition at 54-55.

⁴⁸⁰ NextEra’s Ans. to Petition at 55-56.

⁴⁸¹ *Shoreham*, LBP-91-39, 34 NRC at 282.

knowledge of the progressive nature of ASR, there has been no testing nor proposed future testing of either manufactured concrete samples as in the FSEL . . . tests nor of actual concrete from Seabrook Station itself to the point of failure/limit state.⁴⁸²

In support of this contention, C-10 argues that the LAR should set out a methodology to test materials up to and beyond their point of failure in order to have a full understanding of the effects of ASR.⁴⁸³ “Progressive ASR,” C-10 states, “will continue to weaken structures gradually over time. Then, one day, there may well be a profound failure because, even if the speed of progression of ASR damage did not change, that ‘tipping point’ of structural failure is reached.”⁴⁸⁴ C-10 protests the inclusion of “percentages of ASR damages at which failure occurs” in certain sections of the LAR because the LAR “states that no testing was done to the point of limit state/failure.”⁴⁸⁵

In its response, NextEra maintains that although samples were not tested to the point of failure, the test samples were representative of actual current ASR progression at Seabrook.⁴⁸⁶ That representative testing was then used to develop conservative acceptance criteria, which necessitates periodic monitoring of ASR at Seabrook “to ensure that the conclusions of the large-scale test program remain valid.”⁴⁸⁷ As a result, NextEra asserts that its proposed monitoring criteria would show that a reinforced concrete structure had exceeded the acceptance criteria and so necessitated action before that structure ever reached the “tipping point.”⁴⁸⁸ As such, NextEra argues that Contention G does not show a genuine dispute with the LAR and is not material to the findings the NRC must make on the LAR.⁴⁸⁹ The Staff similarly states that “[s]ince the LAR is structured such that the limits on the Seabrook concrete are more conservative than the ‘tipping point’ of the concrete, whether NextEra should be required to affirmatively determine this ‘tipping point’ is not material to the findings the NRC must make on the LAR.”⁴⁹⁰

We view Contention G as C-10’s attempt to require the use of a specific methodology for determining acceptance criteria. NextEra has chosen to set the acceptance criteria for structures affected by ASR below the limits set by

⁴⁸² Petition at 13.

⁴⁸³ *Id.* at 15.

⁴⁸⁴ *Id.* at 13-14.

⁴⁸⁵ *Id.* at 14.

⁴⁸⁶ NextEra’s Ans. to Petition at 61-62.

⁴⁸⁷ *Id.* at 61 (quoting Evaluation of Proposed Change at 16 of 73).

⁴⁸⁸ NextEra’s Ans. to Petition at 60.

⁴⁸⁹ *Id.* at 63.

⁴⁹⁰ Staff’s Ans. to Petition at 37.

the test program. That is, even though the test program did not test out to the point of failure, 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 such, we agree that a requirement to test to the tipping point is not material to the findings the Staff must make about the LAR under 10 C.F.R. § 2.309(f)(1)(iv). Further, Contention G does not raise a genuine dispute with the LAR on a material issue of law or fact under section 2.309(f)(1)(vi). Accordingly, Contention G is not admitted.

The Board notes that the Staff included a portion of Contention G in its reformulated contention, “to the extent that C-10 argues that the test program is not representative of the Seabrook concrete, the limits in the LAR may also not be conservative with respect to the Seabrook concrete’s ‘tipping point.’”⁴⁹¹ However, because we view Contention G as requiring a specific methodology not based on C-10’s argument about the lack of representativeness of the test samples, we do not agree that Contention G has an appropriate nexus to be included in the reformulated contention. Further, we do not believe that any part of Contention G falls within the scope of the reformulated contention.

4. Contention I

Contention I states:

Completely omitted from LAR 16-03 is the vital factor of expected sea level rise on the progression of ASR at the portions of the plant exposed to possible sea water encroachment/ inundation.⁴⁹²

C-10 argues that “Seabrook Station is in a seaside location in a part of the world where sea levels are rising faster than in most other areas This factor needs to be taken into consideration in assessing the future impact of the potential damage to the plant due to ASR exacerbation.”⁴⁹³ C-10 provides no expert support or references to specific sources or documents backing its assertions that to do otherwise would be “short-sighted and irresponsible,” and C-10 states that the reason it does not cite any relevant section of the LAR is because “the issue of sea level rise is not addressed within the LAR.”⁴⁹⁴

The Staff argues that Contention I does not satisfy the 10 C.F.R. § 2.309(f)(1)(v) requirement to provide alleged facts or expert opinions and

⁴⁹¹ *Id.*

⁴⁹² Petition at 16.

⁴⁹³ *Id.*

⁴⁹⁴ *Id.*

citations to specific sources or documents on which C-10 intends to rely for support.⁴⁹⁵ Further, the Staff argues that Contention I is outside the scope of this proceeding under section 2.309(f)(1)(iii) and not material to the findings that must be made by the NRC required by section 2.309(f)(1)(iv).⁴⁹⁶ NextEra also argues that Contention I is not material, outside the scope of this proceeding, and unsupported.⁴⁹⁷

We agree with the Staff and NextEra that Contention I fails to meet the requirement of section 2.309(f)(1)(v) to provide support for its allegations, as well as being not material and outside the scope of this LAR proceeding. As such, Contention I is not admitted.

5. *Contention J*

Contention J states:

The language used in LAR 16-03 is inappropriate for a document written for the purpose of demonstrating objectivity in the testing — and the conclusions of that testing — by MPR/FSEL, on its manufactured concrete specimens.⁴⁹⁸

In this challenge to the tone of the LAR, C-10 provides no citation to expert support and argues that the LAR “seems to pre-suppose test outcomes in favor of NextEra’s continued operation of the plant.”⁴⁹⁹

The Staff responds by stating that

[t]he particular language used to convey the information in a license amendment request is not material to the findings that the NRC must make. . . . Regardless of how the information . . . is presented, the NRC makes these determinations based on the information provided and not on the manner by which that information is provided.⁵⁰⁰

NextEra argues that Contention J is not material to the findings the NRC must make on the LAR, and that C-10’s objection would not render the LAR “legally or technically deficient” because C-10 does not cite any legal requirement that the LAR’s language fails to satisfy.⁵⁰¹

⁴⁹⁵ Staff’s Ans. to Petition at 45.

⁴⁹⁶ *Id.*

⁴⁹⁷ NextEra’s Ans. to Petition at 68-69.

⁴⁹⁸ Petition at 16.

⁴⁹⁹ *Id.*

⁵⁰⁰ Staff’s Ans. to Petition at 47.

⁵⁰¹ NextEra’s Ans. to Petition at 70.

We agree with the Staff that the challenge to the language of the LAR presented in Contention J is not material to the Staff's findings, as required by 10 C.F.R. § 2.309(f)(1)(iv); and with NextEra that Contention J neither cites any legal standard, as required by section 2.309(f)(1)(i), nor provides any support, as required by section 2.309(f)(1)(v). Contention J is therefore not admitted.

V. CONCLUSION

The Board finds that C-10 has established its standing to intervene in this proceeding and admits Contentions A, B, C, D, and H, as reformulated into a single contention. Contentions E, F, G, I, and J are not admissible. C-10 is admitted as a party to this proceeding and its Request for a Hearing and Petition to Intervene is granted. The Staff's Motion to Strike is denied.

This Order is subject to appeal to the Commission to the extent permitted by 10 C.F.R. § 2.311. Any petitions for review meeting applicable requirements set forth in that section must be filed within 25 days of service of this Memorandum and Order.

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
October 6, 2017

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

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

In the Matter of

Docket No. 52-047-ESP
(ASLBP No. 17-954-01-ESP-BD01)

TENNESSEE VALLEY AUTHORITY
(Clinch River Nuclear Site
Early Site Permit Application)

October 10, 2017

This proceeding concerns the Tennessee Valley Authority's application for an early site permit for two or more small modular reactors to be located at the Clinch River site in Oak Ridge, Tennessee. The Board considered two petitions to intervene and requests for a hearing: a petition from the Blue Ridge Environmental Defense League (BREDL), and a joint petition from the Southern Alliance for Clean Energy (SACE) and the Tennessee Environmental Council (TEC). The Board determined that all three petitioners had demonstrated standing, but that BREDL's sole proffered contention was inadmissible and two of the three contentions proffered by SACE and TEC were admissible.

CONSTRUCTION PERMIT(S): EARLY SITE PERMIT(S)

An ESP is a partial construction permit. In contrast to a combined license (COL), which authorizes construction and operation of a nuclear power facility, an ESP relates only to site suitability.

RULES OF PRACTICE: INTERVENTION

To intervene as a party in an adjudicatory proceeding, a petitioner must (1) establish it has standing; and (2) proffer at least one admissible contention.

RULES OF PRACTICE: PRO SE PETITIONER

As the Commission has directed, the Board affords *pro se* parties some degree of leniency.

RULES OF PRACTICE: STANDING (REPRESENTATIONAL)

An organization may represent the interests of its members using representational standing 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: STANDING

As to whether an individual member of a petitioning organization qualifies for standing in his or her own right, traditional judicial standing concepts require a showing that the individual 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 PRESUMPTION)

Although the NRC applies traditional standing concepts, in certain proceedings it presumes that an individual has standing to intervene without the need to address them upon a showing that he or she lives within, or otherwise has frequent contacts with, a geographic zone of potential harm. The pertinent zone in power reactor construction and operating license proceedings is the area within a 50-mile radius of the site.

RULES OF PRACTICE: STANDING

The Commission directs the Board to construe the petition in favor of the petitioner when determining whether a petitioner has demonstrated standing.

RULES OF PRACTICE: STANDING

The Board has an independent obligation to determine whether petitioners have adequately demonstrated standing.

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)

Although the NRC's contention admissibility rules are strict by design, and mere notice pleading is insufficient, a petitioner does not have to prove its contentions at the admissibility stage. At this juncture, the Board does not adjudicate disputed facts. The factual support required need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand a summary disposition motion. What is required is a minimal showing that material facts are in dispute, thereby demonstrating that an inquiry in depth is appropriate.

EARLY SITE PERMIT PROCEEDINGS: EMERGENCY PLAN(S)

An ESP applicant may (but need not) submit as part of its application either complete and integrated emergency plans or major features of its emergency plans. If an applicant submits neither, its emergency plans are not evaluated by the NRC until the COL stage.

ATOMIC ENERGY ACT: HEARING RIGHT

REGULATIONS: EXEMPTIONS

Although exemption requests themselves do not ordinarily confer hearing rights upon interested third parties, exemption requests that are a direct part of an initial licensing or licensing amendment action do.

NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL IMPACT STATEMENT

All contentions must be based on documents or other information available at the time the petition is to be filed. Petitioners have an ironclad obligation to raise issues in licensing proceedings as soon as the information becomes available to them. In the case of environmental contentions in particular, participants shall file contentions based on the applicant's Environmental Report.

EARLY SITE PERMIT PROCEEDINGS: ENVIRONMENTAL REPORT

An Environmental Report for an ESP application need not include an assessment of the economic, technical, or other benefits (for example, need for power) and costs of the proposed action or an evaluation of alternative energy sources.

EARLY SITE PERMIT PROCEEDINGS: ENVIRONMENTAL IMPACT STATEMENT

The NRC's Environmental Impact Statement for an ESP must not include an assessment of the economic, technical, or other benefits (for example, need for power) and cost of the proposed action or an evaluation of alternative energy sources unless the applicant has elected to address them at the ESP stage.

NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL REPORT

Under the migration tenet, when the information in the NRC Staff's environmental review document is sufficiently similar to the applicant's Environmental Report, an existing contention based on the Environmental Report can migrate to apply to the Staff's review document as it applied to the Environmental Report.

RULES OF PRACTICE: HEARING ON CONTENTIONS

Upon admission of a contention the Board must identify the specific hearing procedures to be used. Section 2.310(d) of 10 C.F.R. provides that, in most licensing matters, the procedures in Subpart G of 10 C.F.R. Part 2 will be used only if a contention “necessitates resolution of issues of material fact relating to the occurrence of a past activity, where the credibility of an eyewitness may reasonably be expected to be at issue, and/or issues of motive or intent of the party or eyewitness material to the resolution of the contested matter.” Unless the Board determines that section 2.310(d) or other relevant regulations require otherwise, a proceeding may be conducted under the procedures of Subpart L of 10 C.F.R. Part 2.

MEMORANDUM AND ORDER (Ruling on Petitions for Intervention and Requests for Hearing)

Before the Board are two petitions to intervene and requests for a hearing concerning an early site permit (ESP) application by the Tennessee Valley Authority (TVA) for two or more small modular reactors to be located at the Clinch River Nuclear Site in Oak Ridge, Tennessee. The Blue Ridge Environmental Defense League (BREDL) submitted a petition proffering one contention. The Southern Alliance for Clean Energy (SACE) and the Tennessee Environmental Council (TEC) jointly submitted a second petition proffering three contentions.

TVA and the NRC Staff agree that BREDL, SACE, and TEC have demonstrated standing. But both TVA and the NRC Staff contend that every proffered contention is inadmissible on various grounds.

The Board concludes that each of the three petitioners has demonstrated standing, and that two of the three contentions proffered by SACE and TEC are admissible. BREDL’s sole proffered contention is inadmissible. In accordance with 10 C.F.R. § 2.309(a), we grant the petition submitted by SACE and TEC, and admit them as parties to this proceeding. The admitted contentions will be heard under the procedures set forth at 10 C.F.R. Part 2, Subpart L.

I. BACKGROUND

On May 12, 2016, TVA submitted an ESP application to the NRC.¹ An ESP

¹ See Tennessee Valley Authority; Clinch River Nuclear Site, 81 Fed. Reg. 40,929, 40,929 (June 23, 2016).

is a “partial construction permit.”² In contrast to a combined license (COL), which authorizes construction and operation of a nuclear power facility, an ESP relates only to site suitability.³ Because TVA has not yet selected a design for the reactors that might be constructed at the site, its application is based on a plant parameter envelope that was developed on the basis of four different light-water small modular reactor designs currently under development in the United States.⁴ Approval to construct and operate a nuclear power plant at the Clinch River site would require a separate NRC authorization and would be the subject of a separate licensing proceeding.

The NRC published notice in the *Federal Register* on April 4, 2017, that the NRC Staff would review the application and that persons whose interests might be affected by the proposed ESP would have until June 5, 2017 to request a hearing or petition to intervene.⁵ On May 5, 2017, SACE and TEC filed an unopposed⁶ request for a 1-week extension to file their petition, as well as a 1-week extension to reply to answers to their petition.⁷ The Secretary of the Commission (SECY) granted both of these requests, extending the filing period to June 12, 2017, for petitions, and to July 21, 2017, for replies.⁸

On June 12, 2017, SACE and TEC timely filed their petition, which proffers one safety-related contention concerning TVA’s request for exemptions from the NRC’s emergency planning requirements, and two contentions challenging the application’s Environmental Report. One of these contentions alleges that the Environmental Report fails to consider the possibility of a spent fuel pool fire, and the other objects to language in the Environmental Report regarding the technical characteristics of small modular reactors.⁹

² 10 C.F.R. § 52.1(a).

³ See *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-07-12, 65 NRC 203, 205 (2007).

⁴ Tennessee Valley Authority, Clinch River Early Site Permit Application, Part 2: Site Safety Analysis Report, Rev. 0 at 2.0-1 (May 2016) (ADAMS Accession No. ML16144A037) [hereinafter SSAR, Rev. 0].

⁵ Tennessee Valley Authority; Clinch River Nuclear Site Early Site Permit Application and Associated Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information, 82 Fed. Reg. 16,436, 16,437-38 (Apr. 4, 2017).

⁶ TVA authorized SACE/TEC to state that it did not oppose their time extension motion, and the NRC Staff did not file a response. Request by Southern Alliance for Clean Energy and Tennessee Environmental Council for Extension of Time Periods for Submitting Hearing Request and Reply to Responses at 1 (May 5, 2017) [hereinafter SACE/TEC Request for Extension].

⁷ SACE/TEC Request for Extension at 2.

⁸ Order of the Secretary at 1-2 (June 2, 2017) [hereinafter SECY Order].

⁹ Southern Alliance for Clean Energy and Tennessee Environmental Council Petition to Intervene and Request for Hearing at 5-24 (June 12, 2017) [hereinafter SACE/TEC Pet.].

BREDL also submitted a petition on June 12, 2017. Its petition contains one contention challenging the sufficiency of TVA's Environmental Report.¹⁰

On July 7, 2017, TVA and the NRC Staff filed answers to the petitions, in which they opposed the admission of all contentions and also argued that BREDL's petition was late.¹¹ SACE and TEC filed a reply on July 21, 2017.¹² BREDL did not file a reply.

The Board heard oral argument on September 12, 2017.

II. ANALYSIS

To intervene as a party in an adjudicatory proceeding, a petitioner must (1) establish it has standing; and (2) proffer at least one admissible contention.¹³ Before analyzing standing and contention admissibility, we first address the timeliness of BREDL's petition.

A. Timeliness

Following SACE and TEC's request for a 1-week extension of time, which neither TVA nor the NRC Staff opposed, SECY granted the request by order issued June 2, 2017. SECY's order stated: "Petitioners now have until June 12, 2017, to file hearing petitions on TVA's license application."¹⁴

Because BREDL did not formally join in the unopposed request for a 1-week extension, however, both TVA and the NRC Staff contend BREDL should have filed by the original deadline.¹⁵ BREDL also did not volunteer good cause for filing late; therefore, TVA and the Staff contend the Board should dismiss BREDL's hearing petition for this reason alone.¹⁶

The Board agrees that BREDL should have taken steps to clarify whether SECY's June 2, 2017 order applied to it as well as to SACE and TEC. That

¹⁰Hearing Request and Petition to Intervene by Blue Ridge Environmental Defense League at 6-13 (June 12, 2017) [hereinafter BREDL Pet.].

¹¹[TVA]'s Answer Opposing Petitions for Intervention and Requests for Hearing by [SACE] and [TEC], and [BREDL] (July 7, 2017) [hereinafter TVA Answer]; NRC Staff Answer to [SACE] and [TEC]'s Petition to Intervene and Request for Hearing (July 7, 2017) [hereinafter NRC Staff Answer to SACE/TEC Pet.]; NRC Staff Answer Opposing Petition to Intervene and Request for Hearing by [BREDL] (July 7, 2017) [hereinafter NRC Staff Answer to BREDL Pet.].

¹²[SACE]'s and [TEC]'s Reply to Oppositions to Petition to Intervene and Request for Hearing (July 21, 2017) [hereinafter SACE/TEC Reply].

¹³10 C.F.R. § 2.309(a).

¹⁴SECY Order at 1.

¹⁵TVA Answer at 30; NRC Staff Answer to BREDL Pet. at 11.

¹⁶TVA Answer at 29; NRC Staff Answer to BREDL Pet. at 11.

would have been the more prudent and responsible course. We decline, however, to reject BREDL's hearing petition on this ground.

First, as BREDL's nonlawyer representative stated during oral argument, when he received SECY's order through the NRC's Electronic Information Exchange,¹⁷ he believed in good faith that the order granted a 1-week extension to all petitioners.¹⁸

Second, BREDL's representation is credible. SECY's order is at least arguably ambiguous. It states: "Petitioners now have until June 12, 2017, to file hearing petitions on TVA's license application."¹⁹ Although the order defines the capitalized form of "Petitioners" to refer to SACE and TEC, it does not use that term consistently and also refers to them as "petitioners."²⁰ In any event, because "Petitioners" is the first word in the critical sentence (and would be capitalized regardless),²¹ one cannot tell whether it is intended to refer to "Petitioners" as defined (that is, SACE and TEC) or to any petitioners. Moreover, although SACE and TEC asked for an extra week to file a single joint "hearing request,"²² SECY's order extended the time to file "hearing petitions."²³ If SECY intended for the 1-week extension to apply only to SACE and TEC, it could have said so more clearly.

Third, the reason SACE and TEC gave for requesting a 1-week extension of the time for hearing requests²⁴ — "multiple novel and complex issues relating to the approval of the first-ever application for an ESP for a Small Modular Reactor"²⁵ — would seem to apply with equal force to BREDL or to any other potential petitioner. Nothing about the justification for their unopposed request would appear unique to SACE or to TEC. Presumably, if BREDL also had asked for consent to a 1-week extension, BREDL would have received it, just as SACE and TEC did.

Fourth, neither TVA nor the NRC Staff has claimed that it was prejudiced in any way as a result of BREDL's having filed its hearing request on the same day as SACE and TEC, rather than a week earlier.

¹⁷ See Tr. at 50-51.

¹⁸ Tr. at 51.

¹⁹ SECY Order at 1.

²⁰ Compare *id.* (referring to SACE and TEC together as "Petitioners"), with *id.* ("I am granting petitioners' request.").

²¹ *Id.* at 1 ("Petitioners now have until June 12, 2017, to file hearing petitions on TVA's license application.").

²² SACE/TEC Request for Extension at 1-2.

²³ SECY Order at 1-2.

²⁴ Their request for an additional week to file a reply was based, additionally, on the schedules of their experts. SACE/TEC Request for Extension at 2.

²⁵ SACE/TEC Request for Extension at 2.

Fifth, although BREDL has considerable experience in NRC adjudications, it relies in this proceeding on a nonlawyer representative and thus qualifies as a *pro se* litigant. As the Commission has directed, we afford such parties some degree of leniency.²⁶

Finally, we do not agree with the Staff that the result in this case should be controlled by the result in another case, *Watts Bar 2*, in which BREDL was among several petitioners then represented by counsel.²⁷ The NRC Staff claims *Watts Bar 2* involved “similar” and “analogous circumstances.”²⁸ But that is not so.

In *Watts Bar 2*, BREDL was among four organizations that knew of the pertinent filing deadline but delayed seeking an extension of time because they had not yet decided whether to join in a petition to intervene.²⁹ The licensing board ruled that “[s]uch indecision does not constitute good cause for failure to file a timely petition.”³⁰ Moreover, all four of the organizations were represented by counsel, who “overlooked” the need to request an extension on their behalf.³¹

In affirming the licensing board’s unwillingness to forgive a 2-week filing delay in those circumstances, the Commission held that the board’s ruling was neither an abuse of discretion nor founded on an error of law.³² The Commission cited the importance and adherence to procedural rules “especially [by] those who . . . are cognizant of those rules and represented by counsel.”³³

In this case, in contrast, BREDL’s reasonable and undisputed representation is that it did not understand the 1-week extension to apply only to SACE and TEC, and BREDL is not represented by counsel.

For all these reasons, we find good cause in accordance with 10 C.F.R. § 2.307(a). We do not reject BREDL’s hearing petition out of hand merely because BREDL understood the 1-week extension to apply to it as well as to SACE and TEC.

²⁶ *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 394 (2015) (stating that *pro se* petitioners are not held to the same “standards of clarity and precision to which a lawyer might reasonably be expected to adhere” (quoting *Public Service Electric and Gas Co.* (Salem Nuclear Generating Station, Units 1 and 2), ALAB-136, 6 AEC 487, 489 (1973))); cf. *Shieldalloy Metallurgical Corp.* (Cambridge, Ohio Facility) CLI-99-12, 49 NRC 347, 354 (1999) (“[P]etitioners represented by counsel are generally held to a higher standard than *pro se* litigants.”).

²⁷ *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), LBP-09-26, 70 NRC 939 (2009); *aff’d*, CLI-10-12, 71 NRC 319 (2010).

²⁸ Tr. at 42-43.

²⁹ *Watts Bar 2*, LBP-09-26, 70 NRC at 950.

³⁰ *Id.*

³¹ *Id.*

³² *Watts Bar 2*, CLI-10-12, 71 NRC at 327.

³³ *Id.*

B. Standing

BREDL, SACE, and TEC assert they each have standing to intervene as representatives of their members living in the vicinity of the Clinch River site.³⁴ An organization may represent the interests of its members using representational standing 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.³⁵

As to whether an individual member of a petitioning organization qualifies for standing in his or her own right, traditional judicial standing concepts require a showing that the individual 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 statutes³⁶ — here the Atomic Energy Act and the National Environmental Policy Act.³⁷ Although the NRC applies these traditional standing concepts, in proceedings such as this it presumes that an individual has standing to intervene without the need to address them upon a showing that he or she lives within, or otherwise has frequent contacts with, a geographic zone of potential harm.³⁸ The pertinent zone in power reactor construction and operating license proceedings is the area within a 50-mile radius

³⁴ BREDL Pet. at 3-5; SACE/TEC Pet. at 3-4.

³⁵ See *Consumers Energy Co. (Palisades Nuclear Plant)*, CLI-07-18, 65 NRC 399, 409 (2007); see also *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC) Inc.*, 528 U.S. 167, 181 (2000) (“An association has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization’s purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit.” (citing *Hunt v. Washington State Apple Advert. Comm’n*, 432 U.S. 333, 343 (1977))).

³⁶ *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) (citing *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993) (internal quotation marks omitted); see also *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995) (citing *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 559-61 (1992))).

³⁷ 42 U.S.C. §§ 2011-2297; *id.* §§ 4321-4347.

³⁸ *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 191 (1999) (explaining that the presumption applies if the proposed action “quite ‘obvious[ly]’ entails an increased potential for offsite consequences” (alteration in original) (quoting *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329-30 (1989))).

of the site.³⁹ The Commission also directs us to “construe the petition in favor of the petitioner” when determining whether a petitioner has demonstrated standing.⁴⁰

Although neither TVA nor the NRC Staff objects to the representational standing of BREDL, SACE, and TEC,⁴¹ we have an independent obligation to determine whether they have adequately demonstrated standing.⁴²

1. BREDL Has Demonstrated Representational Standing

BREDL describes itself as “a regional, community-based non-profit environmental education organization whose founding principles are earth stewardship, environmental democracy, social justice, and community empowerment.”⁴³

BREDL alleges that “[t]he issuance of an ESP could have an adverse effect on [its members’] health and safety by paving the way for an unsafe, experimental nuclear operation.”⁴⁴ To demonstrate this injury, BREDL has submitted a sworn declaration of one of its members living within 2 miles of the Clinch River site.⁴⁵ The declaration authorizes BREDL to represent his interests and expresses the concern that “construction of one or more new nuclear reactors so close to my home could pose a grave risk to my health and safety.”⁴⁶

BREDL’s declarant has established standing to intervene in his own right and has authorized BREDL to represent his interests. Accordingly, BREDL has demonstrated representational standing.

2. SACE and TEC Have Demonstrated Representational Standing

SACE asserts it is “a nonprofit, nonpartisan membership organization that promotes responsible energy choices that solve global warming problems and

³⁹ *Calvert Cliffs*, CLI-09-20, 70 NRC at 917 (explaining that the rationale for the presumption is “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” (internal quotation marks and footnote omitted)).

⁴⁰ *Ga. Tech.*, CLI-95-12, 42 NRC at 115.

⁴¹ TVA Answer at 2-3; NRC Staff Answer to SACE/TEC Pet. at 9-10, NRC Staff Answer to BREDL Pet. at 9-10.

⁴² 10 C.F.R. § 2.309(d)(2); *see also Virginia Electric and Power Co.* (North Anna Power Station, Unit 3), LBP-08-15, 68 NRC 294, 303 (2008) (stating that although “[n]either the Applicant nor the NRC Staff challenges [the petitioner’s] standing,” the board must “make [its] own determination whether [the petitioner] has satisfied standing requirements”).

⁴³ BREDL Pet. at 2.

⁴⁴ *Id.* at 5.

⁴⁵ See Decl. of Jake Almond (dated and submitted June 12, 2017).

⁴⁶ *Id.*

ensure clean, safe and healthy communities throughout the Southeast.”⁴⁷ TEC asserts it is “a nonprofit organization that seeks to educate and advocate for the conservation and improvement of Tennessee’s environment, public health and communities.”⁴⁸

SACE and TEC allege that their members, and in the case of SACE, its staff, “would be adversely affected by an accident at the proposed [small modular reactor].”⁴⁹ The organizations have submitted sworn declarations from five SACE members⁵⁰ and three TEC members⁵¹ stating their home addresses are within 50 miles of the Clinch River site and authorizing the organizations to represent them. These declarations express SACE and TEC members’ concern that the “health and safety and quality of [their] environment could be affected by accidents, including a spent fuel pool fire.”⁵² In addition, SACE submitted a declaration of its chief financial officer stating that SACE employs five staff members at its Knoxville, Tennessee office, located within 50 miles of the Clinch River site.⁵³ The declaration alleges harm to SACE as an organization in the event of an accident at the proposed facility.⁵⁴

Because the individual declarants of SACE and TEC have established standing to intervene in their own right and have authorized their respective organizations to represent their interests, each organization has demonstrated representational standing.

C. Contention 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

⁴⁷ SACE/TEC Pet. at 2.

⁴⁸ *Id.* at 3.

⁴⁹ *Id.* at 4.

⁵⁰ Standing Decl. of Louise Gorenflo (dated June 1, 2017; submitted June 12, 2017); Standing Decl. of Jennifer Stachowski (dated May 31, 2017; submitted June 12, 2017); Standing Decl. of Ralph Hutchison (dated May 31, 2017; submitted June 12, 2017); Standing Decl. of Daniel W. Stephenson (dated June 9, 2017; submitted June 12, 2017) (attesting to membership in both SACE and TEC); Standing Decl. for Stephen A. Smith for the Southern Alliance for Clean Energy (June 12, 2017) [collectively, hereinafter SACE Decls.].

⁵¹ Standing Decl. of Daniel W. Stephenson (dated June 9, 2017; submitted June 12, 2017) (attesting to membership in both SACE and TEC); Standing Decl. of Ralph Hutchison (dated June 7, 2017; submitted June 12, 2017); Standing Decl. of Adam Hughes (dated June 8, 2017; submitted June 12, 2017) [collectively, hereinafter TEC Decls.].

⁵² SACE Decls.; TEC Decls.

⁵³ Standing Decl. of James Fall for [SACE] (dated May 31, 2017; submitted June 12, 2017).

⁵⁴ *Id.*; *see also* SACE/TEC Pet. at 4.

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.⁵⁵

The Commission's regulations permit admission of a contention only if it meets these requirements because the Agency "should not have to expend resources to support the hearing process unless there is an issue that is appropriate for, and susceptible to, resolution in an NRC hearing."⁵⁶ The NRC's contention admissibility criteria are the result of, among other things, a major rule change that sought to "toughen" the Commission's rules "in a conscious effort to raise the threshold bar for an admissible contention."⁵⁷

As the Commission explained in *Oconee*, in an earlier era "boards had admitted and litigated numerous contentions that appeared to be based on little more than speculation."⁵⁸ Intervenors "often had negligible knowledge of nuclear power issues and, in fact, no direct case to present, but instead attempted to unearth a case through cross-examination."⁵⁹ The Commission's intent in revising the contention admissibility requirements was not to put up a "fortress to deny intervention,"⁶⁰ but rather to "ensure that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions."⁶¹

Although the NRC's contention admissibility rules are therefore "strict by design"⁶² and "[m]ere 'notice pleading' is insufficient,"⁶³ a petitioner does not have to prove its contentions at the admissibility stage.⁶⁴ At this juncture, we

⁵⁵ 10 C.F.R. § 2.309(f)(1)(i)-(vi).

⁵⁶ Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2202 (Jan. 14, 2004).

⁵⁷ *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999).

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.* at 335 (quoting *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 21 (1974)).

⁶¹ *Oconee*, CLI-99-11, 49 NRC at 334.

⁶² *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsideration denied*, CLI-02-1, 55 NRC 1 (2002).

⁶³ *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

⁶⁴ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 139 (2004).

do not adjudicate disputed facts.⁶⁵ The factual support required “need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand a summary disposition motion.”⁶⁶ What is required is “a minimal showing that material facts are in dispute, thereby demonstrating that an ‘inquiry in depth’ is appropriate.”⁶⁷

1. BREDL Contention

BREDL’s sole contention states: “TVA’s Environmental Report fails to provide complete and accurate information on alternatives, including the no-build option.”⁶⁸

Purportedly in support of this contention, BREDL sets forth a far-ranging discussion of multiple topics.⁶⁹ It quotes or paraphrases a variety of statutory and regulatory requirements. It questions whether usage of small modular reactors would impact global warming in light of trends in the federal government’s use of energy.⁷⁰ It discusses whether Executive Order 13514 provides TVA with justification for experimenting with small modular reactors.⁷¹ BREDL also questions whether small modular reactors can achieve cybersecurity safety goals that are addressed in Executive Order 13636.⁷²

BREDL apparently fails to grasp, however, that TVA’s application is limited to an ESP. As such, TVA’s Environmental Report need not assess “the economic, technical, or other benefits (for example, need for power) and costs of the proposed action or an evaluation of alternative energy sources.”⁷³ Some of BREDL’s expressed concerns, if pled in accordance with 10 C.F.R. § 2.309(f)(1), perhaps might be the subject of admissible contentions at the COL stage. But none raises a material dispute with TVA’s application for an ESP.

⁶⁵ *AmerGen Energy Co.* (Oyster Creek Nuclear Generating Station), LBP-06-22, 64 NRC 229, 244 (2006) (citing *Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973)).

⁶⁶ Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989).

⁶⁷ *Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 51 (1994) (citing Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. at 33,171 (quoting *Connecticut Bankers Ass’n v. Bd. of Governors*, 627 F.2d 245, 251 (D.C. Cir. 1980))).

⁶⁸ BREDL Pet. at 6.

⁶⁹ *Id.* at 6-13.

⁷⁰ *Id.* at 9-11.

⁷¹ *Id.* at 9-10.

⁷² *Id.* at 12-13.

⁷³ 10 C.F.R. § 51.50(b)(2).

Specifically, save for the no-action alternative, BREDL does not address or criticize in any way the discussions of specific alternatives that actually *are* in TVA's Environmental Report. Nor does BREDL offer any support whatsoever for its criticism of the discussion of the no-action alternative. Section 9.1 of its Environmental Report sets forth TVA's no-action alternative analysis, which essentially says that the no-action alternative would maintain the status quo.⁷⁴ BREDL has not argued otherwise. Although BREDL apparently prefers the no-action alternative, it never explains what it thinks is wrong with TVA's analysis of the no-action alternative in the Environmental Report.

Because it fails to raise a genuine dispute on a material issue in accordance with 10 C.F.R. § 2.309(f)(1), we cannot admit BREDL's contention.

2. *SACE/TEC Contention 1*

Understanding SACE and TEC's Contention 1 requires some background.

An ESP applicant may (but need not) submit as part of its application either "complete and integrated" emergency plans or "major features" of its emergency plans.⁷⁵ If an applicant submits neither, its emergency plans are not evaluated by the NRC until the COL stage.⁷⁶ Because TVA has chosen to submit "major features" of its emergency plans,⁷⁷ however, the NRC evaluates those features now.

But TVA does not want the NRC to evaluate its emergency plans under the NRC's existing regulations. It has asked for exemptions.

Although exemption requests themselves do not ordinarily confer hearing rights upon interested third parties, exemption requests that are "a direct part of an initial licensing or licensing amendment action" do.⁷⁸ If properly pled, a contention challenging TVA's regulatory exemption request in connection with its ESP application may therefore be admissible.

SACE and TEC's Contention 1 concerns TVA's request for an exemption from the NRC's requirement for establishing a 10-mile emergency planning zone.⁷⁹ Instead, TVA wants to use a methodology that it believes would likely

⁷⁴ TVA, Clinch River Early Site Permit Application, Part 3: Environmental Report, Rev. 0, at 9.1-1 (May 2016) (ADAMS Accession No. ML16144A133) [hereinafter ER, Rev. 0].

⁷⁵ 10 C.F.R. § 50.47(a)(1)(iii)-(iv); *see also id.* § 52.17(b)(2)(i)-(ii).

⁷⁶ *Id.* § 50.47(a)(1)(i)-(iv); *see also id.* § 50.33(g).

⁷⁷ Tr. at 87-88.

⁷⁸ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-12, 53 NRC 459, 470 (2001).

⁷⁹ The NRC's regulations generally require a plume exposure emergency planning zone with a radius of "about" 10 miles, to be modified only by factors related to "local emergency response

(Continued)

justify a much smaller emergency planning zone: that is, either one limited to the boundary of the Clinch River site itself or, alternatively, to a 2-mile radius.⁸⁰ SACE and TEC contend that TVA has failed to justify this departure from the NRC's existing regulatory requirements.⁸¹

Specifically, Contention 1 states, in part: "The Emergency Plan in the ESP application for the Clinch River [small modular reactor] is inadequate to satisfy 10 C.F.R. § 52.17(b)(2) because the size of the proposed plume exposure Emergency Planning Zone ('EPZ') is less than the minimum 10-mile radius required by 10 C.F.R. § 50.47(c)(2) for most nuclear power reactors."⁸² Contention 1 asserts that, while TVA claims to qualify under 10 C.F.R. § 50.12(a)(2)(ii) for an exemption from 10 C.F.R. § 50.47(c)(2) "due to the decreased potential consequences associated with such a facility" (ESP Application, Part 6 at 1), TVA has not demonstrated that it satisfies the NRC Staff's criterion for such an exemption with respect to the potential for a spent fuel storage pool fire.⁸³

Citing to an NRC guidance document that they allege has been consistently applied to exemptions from emergency planning requirements for decommissioned reactors,⁸⁴ SACE and TEC contend that the NRC Staff will not approve an exemption from offsite emergency planning requirements unless an applicant for decommissioning can demonstrate that the time between uncovering of spent fuel and initiation of a zirconium fire in the spent fuel storage pool is 10 hours or more.⁸⁵ For consistency, therefore, SACE and TEC argue that, to qualify for an exemption from the 10-mile emergency planning zone requirement, "TVA should have to demonstrate for the spent fuel storage pool(s) to be located at the proposed site that in the event of a loss of cooling and adiabatic heating conditions (*i.e.*, conditions in which a range of factors may prevent heat from

needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries." 10 C.F.R. § 50.47(c)(2).

⁸⁰ See SSAR, Rev. 0, at 13.3-8 to 13.3-9; see also TVA, Clinch River Early Site Permit Application, Part 6: Exemptions and Departures, Rev. 0, at 2 (May 2016) (ADAMS Accession No. ML16144A151) [hereinafter Application Exemptions and Departures, Rev. 0].

⁸¹ SACE/TEC Pet. at 6-7.

⁸² *Id.* at 5.

⁸³ *Id.*

⁸⁴ SACE/TEC Pet. at 5 (citing Draft Regulatory Basis Document, "Regulatory Improvements for Reactors Transitioning to Decommissioning" (Mar. 2017) (ADAMS Accession No. ML17047-A413)); see also Commission Voting Record, Request by Duke Energy Florida, Inc., for Exemptions from Certain Emergency Planning Requirements, VR-SECY-14-0118 (Dec. 30, 2014) (ADAMS Accession No. ML14364A214) (recording Commission's approval for a licensee's exemption request from emergency preparedness requirements); Commission Voting Record, Request by Dominion Energy Kewaunee, Inc. for Exemptions from Certain Emergency Planning Requirements, VR-SECY-14-0066 (Aug. 7, 2014) (ADAMS Accession No. ML14220A046) (same).

⁸⁵ SACE/TEC Pet. at 5.

leaving individual fuel assemblies or spent fuel racks), at least ten hours would elapse before a zirconium fire would be initiated.”⁸⁶

SACE and TEC claim that such an analysis would depend on fuel design features and operational factors that are not specified in TVA’s ESP application.⁸⁷ Accordingly, they contend, “[i]f this information is not available or not sufficiently well-defined to enable a technically sound analysis that could plausibly demonstrate the condition is met with adequate margin, TVA’s exemption request should be rejected without prejudice and TVA should be advised to re-submit it at the COL stage.”⁸⁸

In response, TVA claims that SACE and TEC misunderstand its exemption request. TVA clarifies that it is merely “requesting to use an alternate methodology for determining the appropriate size of an emergency planning zone.”⁸⁹ According to TVA, the NRC’s existing regulations assume a large reactor, whereas TVA seeks an ESP for a facility that would use small modular reactors with different characteristics. Therefore, rather than being forced to use the NRC’s deterministic 10-mile zone, TVA claims it should be allowed to demonstrate, through a design-specific analysis at the COL stage, that its facility can comply with the dose limits allowed by the U.S. Environmental Protection Agency’s (EPA’s) Protective Action Guides with a much smaller emergency planning zone.⁹⁰ TVA acknowledges that, if it cannot demonstrate compliance with those more flexible criteria at the COL stage, then it would still have to use a 10-mile emergency planning zone.⁹¹ TVA also acknowledges that, at the COL stage, SACE and TEC could then “raise any objections to whether a design selected for the [Clinch River] Site complies with the [U.S. EPA Protective Action Guides]-based criteria.”⁹²

The Board agrees with TVA. Apparently based on a misunderstanding of what TVA is requesting, SACE and TEC fail to address or challenge in any way the methodology TVA seeks the NRC’s permission to use.

Petitioners’ confusion is understandable. In Part 6 of its application, TVA states: “In this application, TVA is proposing a dose-based, consequence-oriented approach to establish an appropriate [emergency planning zone] size consistent with [U.S. EPA Protective Action Guides] criteria.”⁹³ But, on the next page of Part 6, TVA explains that “two sets of exemptions have been developed,”

⁸⁶ *Id.* at 5-6.

⁸⁷ *Id.* at 6.

⁸⁸ *Id.*

⁸⁹ TVA Answer at 10.

⁹⁰ *Id.* at 14.

⁹¹ *Id.*

⁹² *Id.*

⁹³ Application Exemptions and Departures, Rev. 0, at 1.

and then provides two tables of marked-up rules to illustrate the exemptions requested.⁹⁴ One of these represents an emergency planning zone at the site boundary and the other at a 2-mile radius. Additionally, throughout Part 6, TVA refers to exemptions in the plural. This led to possible confusion: Was TVA applying for an exemption to the methodology for establishing an emergency planning zone? Or was TVA explicitly requesting an emergency planning zone at either the site boundary or at a 2-mile radius?

In the Board's opinion, however, any confusion is laid to rest by considering other portions of the application. Chapter 13 of the Site Safety Analysis Report sets out the explicit methodology by which TVA proposes to determine the emergency planning zone size at the COL stage. Chapter 13 explains that three possible results of using this methodology are: (1) a site-boundary emergency planning zone; (2) an emergency planning zone having a radius of 2 miles; or (3) an emergency planning zone with a radius greater than 2 miles.⁹⁵ Thus, it is clear that the application is only requesting permission to use an alternative methodology to select the emergency planning zone size at the COL stage. The two sets of explicit exemptions for site boundary and 2-mile emergency planning zones are provided only as examples of potential results of using this methodology.

TVA's counsel confirmed this interpretation at oral argument, clarifying that "our exemption request is not for a size of an EPZ."⁹⁶ Rather, he explained, "[i]t is to use the methodology."⁹⁷

Contention 1, therefore, incorrectly assumes that TVA is seeking an absolute reduction in the size of the emergency planning zone. Examination of the application as a whole, however, demonstrates that TVA's request for use of alternative methodology does not include a request for an unconditional reduction in the specific size of the emergency planning zone.

The application itself acknowledges that the emergency planning zone selected at the COL stage could exceed a 2-mile radius:

If the dose consequences of the selected technology exceed the [U.S. EPA Protective Action Guides] or present a substantial risk that doses at which significant early health effects may occur for the [plume exposure pathway] [emergency planning zone] boundary at a two-mile radius, then neither Emergency Plan included in Part 5 of this [ESP application] will be incorporated by reference in the [COL

⁹⁴ *Id.* at 2.

⁹⁵ SSAR, Rev. 0, at 13.3-13 to 13.3-14.

⁹⁶ Tr. at 61.

⁹⁷ *Id.*

application] and a new Emergency Plan will be included in the [COL application] for NRC review.⁹⁸

Likewise, in its answer, TVA acknowledged that, “if the [U.S. EPA Protective Action Guides] criteria are not met at the COL stage, the 10-mile [emergency planning zone] would apply.”⁹⁹ So Petitioners’ claim that “the size of the proposed plume exposure Emergency Planning Zone (‘EPZ’) is less than the minimum ten-mile radius” is simply not correct.

The basis for Contention 1 is that a fire in the spent fuel pool could result in the release of significant radioactive material, and the potential for such a fire has not been considered in the exemption request.¹⁰⁰ The support for this basis is the expert opinion of Dr. Edwin S. Lyman.¹⁰¹ While these might be a sufficient basis for a contention challenging an exemption request for a reduced emergency planning zone, they are not a proper basis for a contention challenging a change in methodology.¹⁰² In Chapter 13 of the Site Safety Analysis Report, TVA’s application includes an explicit calculation methodology for determining the size of the emergency planning zone. This methodology includes a list of accidents to be considered, including “applicable fuel handling accidents and spent fuel pool accidents.”¹⁰³ Petitioners never address or challenge this methodology, although they had the opportunity to do so.

In summary, Contention 1 is premised on Petitioners’ mistaken belief that the application requests use of an emergency planning zone that would necessarily be smaller than the currently required 10-mile radius. No such exemption request has been made. Hence, Contention 1 is not within the scope of this proceeding and fails to raise a material factual dispute, and is therefore inadmissible for failure to satisfy 10 C.F.R. § 2.309(f)(1)(iii), (vi).

As TVA has acknowledged, however, Petitioners will still have an opportunity to challenge the application of its proposed methodology at the COL stage. As stated in section 13.3 of TVA’s application, and as noted above, at the COL stage the selected reactor design will be evaluated on the basis of criteria that include “applicable fuel handling accidents and spent fuel pool accidents.”¹⁰⁴ Petitioners could then request and obtain a hearing if they have adequate sup-

⁹⁸ SSAR, Rev. 0, at 13.3-13.

⁹⁹ TVA Answer at 14.

¹⁰⁰ SACE/TEC Pet. at 6-8.

¹⁰¹ *Id.* at 9; *id.*, Attach. 1, Decl. of Dr. Edwin S. Lyman in Support of SACE/TEC’s Contention 1 (Emergency Planning) (June 9, 2017).

¹⁰² Petitioners could have challenged that the proposed methodology of Chapter 13 did not include the specific analysis that they desire, but they did not.

¹⁰³ SSAR, Rev. 0, at 13.3-14.

¹⁰⁴ *Id.*

port for their concern that the spent fuel storage pool accident risk analysis is inadequate to substantiate the submitted complete emergency plan.

Finally, the Board recognizes that both TVA and the NRC Staff claim TVA's preferred alternative to the NRC's existing regulations is consistent with ongoing rulemaking that might eventually result in changes to those regulations.¹⁰⁵ The Agency recently began a rulemaking process for a new rule that recognizes that smaller reactors may have smaller accident source terms and therefore allow smaller emergency planning zones than traditional power reactors.¹⁰⁶

TVA and the NRC Staff do not, however, seek to invoke the doctrine that a contention should not be admitted if it is the subject of an imminent regulation.¹⁰⁷ The potential new regulations to which they refer are not imminent; the NRC Staff estimates they might be about 2 years away.¹⁰⁸ It cannot be known at this time whether the Commission will ultimately promulgate any new regulations, or if it does, what form they might take.

As TVA also points out, the Commission has recognized that some regulatory exemptions might be appropriate while rulemaking is under way.¹⁰⁹ However, although the Commission directed the NRC Staff to consider exemption applications, it did not say that exemption applications must be granted or establish any special guidance for reviewing them.

In rejecting Contention 1 at this time, the Board therefore has not been influenced by the pending rulemaking. Of course, if the Commission were to promulgate controlling new regulations before this matter proceeds to an evidentiary hearing (which appears unlikely before the year 2020¹¹⁰), the exemption request that is the subject of Contention 1 might be moot.

¹⁰⁵ TVA Answer at 11-13; NRC Staff Answer to SACE/TEC Pet. at 15-16.

¹⁰⁶ See Draft Regulatory Basis for Rulemaking on Emergency Preparedness for Small Modular Reactors and Other New Technologies (Apr. 2017) (ADAMS Accession No. ML16309A332).

¹⁰⁷ See *Oconee*, CLI-99-11, 49 NRC at 345 ("Licensing Boards 'should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission.'" (quoting *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974))).

¹⁰⁸ Tr. at 58.

¹⁰⁹ TVA Answer at 11-13; see also Memorandum from Annette L. Vietti-Cook, Secretary of the Commission, to Mark A. Satorius, Executive Director for Operations, SRM-SECY-15-0077, at 1 (Aug. 4, 2015) (ADAMS Accession No. ML15216A492) ("For any small modular reactor reviews conducted prior to the establishment of a rule, the staff should be prepared to adapt an approach to emergency planning zones for [small modular reactor]s under existing exemption processes, in parallel with its rulemaking efforts.").

¹¹⁰ The NRC Staff currently estimates that it will not issue a Final Environmental Impact Statement before the summer of 2019, and that its Final Safety Evaluation Report will be issued in September 2019. Tr. at 58.

3. *SACE/TEC Contention 2*

Contention 2 states: “The Environmental Report fails to satisfy [the National Environmental Policy Act] because it does not address the consequences of a fire in the spent fuel storage pool, nor does it demonstrate that a pool fire is remote and speculative.”¹¹¹

SACE and TEC contend the NRC has not ruled that the likelihood of spent fuel pool fires is remote and speculative. As discussed in connection with Contention 1, SACE and TEC claim “the radiological consequences of a pool fire are potentially catastrophic.”¹¹² They point out that, in the NRC’s Generic Environmental Impact Statement for License Renewal of Nuclear Plants (License Renewal GEIS), the NRC concluded that the environmental impacts of a spent fuel pool fire are “comparable to those from the reactor accidents at full power.”¹¹³ In turn, the potential for reactor accidents to have significant adverse public health effects within at least a 10-mile radius — including early and latent fatalities — is discussed in the NRC’s own emergency planning guidance documents.¹¹⁴ Indeed, the NRC itself has suggested that radioactive fallout from a pool fire could displace as many as four million people out to 500 miles.¹¹⁵

Therefore, SACE and TEC contend, in the absence of a supported assertion that the potential for a spent fuel pool fire is remote and speculative, TVA must address the consequences of a spent fuel pool fire in its Environmental Report.¹¹⁶ Otherwise, SACE and TEC assert, TVA has failed to address all reasonably foreseeable impacts of operating small modular reactors at the proposed site.¹¹⁷

Collectively, TVA and the NRC Staff advance essentially four arguments as to why Contention 2 allegedly fails to raise a genuine dispute and otherwise fails to satisfy the procedural requirements of 10 C.F.R. § 2.309(f)(1). The Board is not persuaded. SACE and TEC have, at a minimum, shown that they are entitled

¹¹¹ SACE/TEC Pet. at 9.

¹¹² *Id.* at 10.

¹¹³ NUREG-1437, Rev. 1, Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Main Report, at 1-28 (June 2013) (ADAMS Accession No. ML13106A241) [hereinafter License Renewal GEIS].

¹¹⁴ See NUREG-0396/EPA 520/1-78-016, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, at 16-17 (Dec. 1978) (ADAMS Accession No. ML051390356); NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, at 11 & n.6, 12, 17 (Nov. 1980) (ADAMS Accession No. ML040420012).

¹¹⁵ See NUREG-2161, Consequence Study of a Beyond-Design Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling Water Reactor at 172 (Sept. 2014) (ADAMS Accession No. ML14255A365).

¹¹⁶ SACE/TEC Pet. at 10.

¹¹⁷ *Id.*

to an evidentiary hearing on whether TVA's Environmental Report must either demonstrate that the risk of a spent fuel pool fire at the proposed site is remote and speculative or, alternatively, address the consequences of such a fire.

First, citing 10 C.F.R. § 50.150(a)(3), TVA argues that "specific requirements for analyzing events related to spent fuel accidents do not apply until the COL stage."¹¹⁸ But 10 C.F.R. § 50.150(a)(3) is a safety regulation that requires an analysis of commercial aircraft impacts on reactors and spent fuel pools. It is not an environmental regulation, and therefore has no bearing on the question of whether TVA's Environmental Report must include an analysis of the consequences of spent pool fires. Tellingly, the NRC Staff did not oppose admission of Contention 2 on this theory, and at oral argument the NRC Staff acknowledged that it failed to "see the direct relevance" of 10 C.F.R. § 50.150(a)(3).¹¹⁹

Second, the NRC Staff argues that Contention 2 is not admissible because allegedly the information SACE and TEC claim is missing from TVA's Environmental Report actually "is present in it."¹²⁰ According to the NRC Staff, TVA's Environmental Report includes references to the License Renewal GEIS, which, in turn, allegedly discusses "the remote likelihood of spent fuel pool fires."¹²¹

But the Environmental Report does not cite the License Renewal GEIS concerning the risk or consequences of spent fuel pool fires. The Report cites the License Renewal GEIS concerning entirely different subjects.¹²² As SACE and TEC point out in their reply,¹²³ the mere mention of the License Renewal GEIS in the Environmental Report for a completely different purpose is not sufficient. Those references cannot substitute for a discussion of whether and how the License Renewal GEIS addresses the risk and consequences of a spent fuel pool fire involving small modular reactors at the Clinch River site.¹²⁴

Moreover, although Appendix E to the 2013 License Renewal GEIS refers to the lowered risk of spent fuel pool fires due to mitigative measures employed since 2001,¹²⁵ it never characterizes the risk as remote and speculative. On the contrary, in *State of New York v. NRC*, the United States Court of Appeals for the District of Columbia Circuit required the NRC to evaluate the consequences

¹¹⁸ TVA Answer at 19-20.

¹¹⁹ Tr. at 100.

¹²⁰ NRC Answer to SACE/TEC Pet. at 22.

¹²¹ *Id.*

¹²² *E.g.*, ER, Rev. 0, at 5.7-3 (analyzing the applicability of the License Renewal GEIS to the Environmental Report's environmental analysis of the uranium fuel cycle).

¹²³ SACE/TEC Reply at 11.

¹²⁴ *Id.*

¹²⁵ License Renewal GEIS, app. E at E-39.

of spent fuel pool fires for the very reason that the Agency had not ruled them to be remote and speculative.¹²⁶

Third, TVA argues that SACE and TEC fail to “assert that spent fuel accidents are not bounded by the design basis analysis of the severe accident analysis included in the ESP application.”¹²⁷ The point of Contention 2, however, is that the Environmental Report is deficient because it contains no discussion at all concerning spent fuel pool fires. The sole subject matter of Chapter 7 of the Environmental Report consists of “accidents with substantial damage to the reactor core and degradation of containment systems.”¹²⁸ As SACE and TEC contend in their reply, it is TVA’s responsibility in the first instance to show that spent fuel pool fires are bounded by the severe accident analysis in its Environmental Report, and TVA has not done so.¹²⁹

Fourth, TVA argues that, by stating the impacts of spent fuel pool fires are “comparable” to the impacts of reactor accidents, the 1996 and 2013 revisions of the License Renewal GEIS “demonstrate[] that the environmental impacts from a spent fuel accident are already encompassed by an analysis of other full-power reactor accidents.”¹³⁰ However, the License Renewal GEIS does not address any aspect of the operation of small modular reactors. Nor has the NRC determined that the spent fuel pool analysis in the GEIS is also applicable to small modular reactors.

In fact, spent fuel pools may be designed differently for small modular reactors. As SACE and TEC contend in their reply, while the License Renewal GEIS may be relied on for the general proposition that spent fuel pool fires are on a comparable scale as reactor accidents, it does not establish that the environmental impacts of a spent fuel pool fire at a site with small modular reactors are necessarily encompassed by the impacts of a small modular reactor accident.¹³¹

SACE/TEC Contention 2 is admitted. However, as acknowledged by counsel for SACE and TEC, Contention 2 is strictly a contention of omission.¹³² TVA might not be able to say very much about the risk of spent fuel pool fires, at this early stage, but SACE and TEC have made a plausible case that TVA must

¹²⁶ 681 F.3d 471, 483 (D.C. Cir. 2012).

¹²⁷ TVA Answer at 21.

¹²⁸ ER, Rev. 0, at 7.2-1; *see also id.* at 7.2-2 to 7.2-3 (listing reactor accident sequences evaluated in Chapter 7, which are limited to reactor containment failure or bypass).

¹²⁹ SACE/TEC Reply at 9.

¹³⁰ TVA Answer at 22.

¹³¹ SACE/TEC Reply at 10.

¹³² Tr. at 118.

say something.¹³³ Should TVA choose to do so, Contention 2 would be moot. The sufficiency of whatever TVA might say would have to be tested by a new contention.

4. *SACE/TEC Contention 3*

SACE/TEC Contention 3 states:

The ESP application violates the National Environmental Policy Act . . . , 42 U.S.C. § 4321-4370f, and NRC implementing regulations because it contains impermissible language comparing the proposed [small modular reactor] to other energy alternatives and discussing the economic and technical advantage of the facility. The language is impermissible because TVA has explicitly invoked 10 C.F.R. § 51.50(b)(2), which excuses it from discussing the economic, technical, or other benefits of the proposed facility such as need for power [citation and footnote omitted]. By formally choosing to exclude consideration of alternatives from its Environmental Report, TVA has effectively precluded Petitioners from submitting contentions on those subjects.

Under the circumstances, TVA must restrict the content of the Environmental Report to the impacts of construction and operation and a limited evaluation of alternatives related solely to the selection of the site. Any language comparing the proposed [small modular reactor] to other energy alternatives, or purporting to justify the need for the [small modular reactor], should be stricken from the Environmental Report.

Furthermore, such language should not be included in the NRC's Environmental Impact Statement . . . for the proposed ESP. Such an [Environmental Impact Statement] would end up becoming an advertisement for [small modular reactor]s rather than the rigorous, unbiased and independent scientific study required by [the National Environmental Policy Act] [citations omitted].

In the alternative TVA may elect to address energy alternatives and need for power in the Environmental Report. In that case, fairness requires that Petitioners must be provided a reasonable opportunity to submit contentions on the new alternatives analysis.¹³⁴

TVA has explicitly invoked 10 C.F.R. § 51.50(b)(2) to defer, until the COL stage, consideration of the economic, technical, or other benefits of the proposed

¹³³ As the Commission has observed, at the ESP stage, incomplete information is not a flaw in an environmental document provided the drafter sets forth and evaluates such information as does exist. *Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 235-36 (2007) (citing Council on Environmental Quality guidance).

¹³⁴ SACE/TEC Pet. at 11-12.

facility. SACE and TEC therefore object to any language in TVA's Environmental Report that sets forth "claims that [small modular reactor] technology is preferable to other energy technology on a host of issues, including safety, security, reliability, carbon reduction, water use, and economies of scale."¹³⁵

For example, SACE and TEC object to statements that objectives of the Clinch River site include demonstrating: (1) "that [small modular reactor] technology is capable of supplying reliable power that is less vulnerable to disruption from intentional destructive acts and natural phenomena;"¹³⁶ (2) the design advantages of small modular reactors where larger units may be impractical due to "transmission system constraints, limited space or water availability, or constraints on the availability of capital for construction and operation;"¹³⁷ (3) the possibility that small modular reactors "could address national security needs by providing reliable electric power in the event of a major grid disruption;"¹³⁸ and (4) the safety advantages of small modular reactors, including "underground containment and inherent safe-shutdown features," which "efficiently provide[] the same or better protection against the threats larger reactors must consider."¹³⁹

TVA and the NRC Staff claim that Contention 3 does not satisfy 10 C.F.R. § 2.309(f)(1) because, they allege, it is outside the scope of this proceeding and fails to raise a material issue or a genuine dispute.¹⁴⁰ The Board disagrees. Contention 3 correctly challenges, at the earliest opportunity available, whether it would be lawful for language similar to that in TVA's Environmental Report ultimately to be included in the NRC's Environmental Impact Statement.

The Commission has established prerequisites for challenging an Environmental Impact Statement. All contentions "must be based on documents or other information available at the time the petition is to be filed."¹⁴¹ Petitioners have an "ironclad obligation" to raise issues in licensing proceedings as soon as the information becomes available to them.¹⁴² In the case of environmental contentions in particular, "participants shall file contentions based on the applicant's environmental report."¹⁴³

The purpose of the NRC's requirement is to try to resolve environmental issues at the earliest possible time, even before the Agency issues an Envi-

¹³⁵ *Id.* at 16.

¹³⁶ SACE/TEC Pet. at 17-18 (quoting ER, Rev. 0, at 1-3); *see also* ER, Rev. 0, at 9.3-2.

¹³⁷ SACE/TEC Pet. at 17 (quoting ER, Rev. 0, at 1-1); *see also* ER, Rev. 0, at 1-4.

¹³⁸ SACE/TEC Pet. at 17 (quoting ER, Rev. 0, at 1-2); *see also* ER, Rev. 0, at 9.3-1.

¹³⁹ SACE/TEC Pet. at 18 (quoting ER, Rev. 0, at 1-3); *see also* ER, Rev. 0, at 9.3-2.

¹⁴⁰ TVA Answer at 25-28; NRC Staff Answer to SACE/TEC Pet. at 27-29.

¹⁴¹ 10 C.F.R. § 2.309(f)(2).

¹⁴² *Duke Power Co. (Catawba Nuclear Station, Units 1 and 2)*, ALAB-687, 16 NRC 460, 468 (1982), *vacated in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983).

¹⁴³ 10 C.F.R. § 2.309(f)(2).

ronmental Impact Statement.¹⁴⁴ Accordingly, if a petitioner tries belatedly to challenge a defect in an Environmental Impact Statement that should have been apparent from the applicant's Environmental Report, it generally will not be allowed to do so.¹⁴⁵ The challenge will be too late.

As the Commission has stated: "[T]he Commission expects that the filing of an environmental concern based on the [Environmental Report] will not be deferred because the staff may provide a different analysis in its [Environmental Impact Statement]."¹⁴⁶ If, when it issues the Environmental Impact Statement, the NRC Staff purports to address a petitioner's claimed deficiencies in the Environmental Report, the Commission contemplates that there will then "be ample opportunity to either amend or dispose of the contention."¹⁴⁷

By claiming Contention 3 is premature,¹⁴⁸ TVA and the NRC Staff in effect ask the Board to carve out a special exception to the Commission's requirement that any problematic issue that can be discerned from the applicant's Environmental Report must be raised at the outset. We decline to do so. In our opinion, the fundamental purpose of the Commission's requirement is not served by creating an exception in this case.

We recognize that Contention 3 is not a typical environmental contention. Rather than alleging an omission or error in TVA's Environmental Report, Contention 3 claims that TVA's report says too much.

In this context, what NRC regulations say about the content of TVA's Environmental Report and what the regulations say about the content of the Agency's Environmental Impact Statement are not the same. An Environmental Report for an ESP application "need not" include "an assessment of the economic, technical, or other benefits (for example, need for power) and costs of the proposed action or an evaluation of alternative energy sources."¹⁴⁹ The NRC's Environmental Impact Statement for an ESP, in contrast, "must not" include

¹⁴⁴ See *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1049, 1053 (1983).

¹⁴⁵ See *Powertech (USA), Inc.* (Dewey-Burdock In Situ Uranium Recovery Facility), CLI-16-20, 84 NRC 219, 231 (2016) ("Insofar as it could be interpreted as implying that the Tribe was premature in filing its environmental contentions on the application, the Board's decision was incorrect. . . . [O]ur regulations require that intervenors file environmental contentions on the applicant's environmental report."); see also *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-4, 59 NRC 31, 45 (2004) (affirming the licensing board's decision to "refuse[] to allow Utah to bring up old grievances late in the hearing process").

¹⁴⁶ *Catawba*, CLI-83-19, 17 NRC at 1049.

¹⁴⁷ *Id.*

¹⁴⁸ TVA Answer at 25; NRC Staff Answer to SACE/TEC Pet. at 27-29.

¹⁴⁹ 10 C.F.R. § 51.50(b)(2).

those very same subjects, unless the applicant has elected to address them at the ESP stage.¹⁵⁰

Regardless of whether the presence of the challenged language in TVA's Environmental Report in itself gives rise to an actionable claim,¹⁵¹ its eventual inclusion in the NRC's Environmental Impact Statement would at least arguably violate 10 C.F.R. § 51.75(b). The NRC Staff has virtually admitted as much.¹⁵² Yet, if and when this matter proceeds to an evidentiary hearing, under the migration doctrine¹⁵³ the subject of the hearing will not be TVA's Environmental Report, but rather the NRC's Environmental Impact Statement.

In these circumstances, the Board fails to see the utility in rejecting Contention 3 as premature. Would the Staff prefer *not* to be alerted to SACE and TEC's concerns before it prepares the NRC's Environmental Impact Statement?

The NRC Staff's response seems to be: "Trust us." Recognizing that "Petitioners are concerned that the NRC will repeat the [Environmental Report's] information in the NRC Staff's not-yet-written [Environmental Impact Statement]," the Staff tries to assure the Board and the parties that it will do no such thing.¹⁵⁴ The Staff states: "The NRC Staff will follow the Commission['s] regulations as set forth in 10 C.F.R. § 51.75(b) and those rules do not allow the NRC Staff to include such information in an [Environmental Impact Statement] where the applicant chooses not to address it in the application."¹⁵⁵

If in fact the Environmental Impact Statement is scrubbed of any discussion that could violate 10 C.F.R. § 51.75(b), the NRC Staff may move for summary disposition under 10 C.F.R. § 2.710. But the Staff's assurances are not a proper basis for rejecting Contention 3 at this time. In *Catawba*, the Commission explicitly contemplated such a scenario, and concluded there would be "am-

¹⁵⁰ *Id.* § 51.75(b).

¹⁵¹ Both TVA and NRC Staff argue that no legal authority prohibits an applicant from making positive statements about a project or technology in its Environmental Report. TVA Answer at 24, 26; NRC Staff Answer to SACE/TEC Pet. at 28.

¹⁵² See NRC Staff Answer to SACE/TEC Pet. at 31. At oral argument, the NRC Staff assured the Board of the Staff's intent to comply with NRC regulations, and declined to speculate whether incorporating all the challenged language in the Staff's EIS "would or would not be a violation of 10 C.F.R. § 51.75(b)." Tr. at 124. We take the Staff's refusal to speculate as an indication that such a violation would be at least plausible. Otherwise, the Staff could simply have opined that it would not be a violation.

¹⁵³ Under the "migration tenet," when the information in the NRC Staff's environmental review document is "sufficiently similar" to the applicant's Environmental Report, an existing contention based on the Environmental Report can "migrate" to apply to the Staff's review document as it applied to the Environmental Report. *Strata Energy, Inc.*, (Ross In Situ Uranium Recovery Project), CLI-16-13, 83 NRC 566, 570 n.17 (2016) (citing *Strata Energy, Inc.*, (Ross In Situ Uranium Recovery Project), LBP-13-10, 78 NRC 117, 132-33 (2013)).

¹⁵⁴ NRC Staff Answer at 31.

¹⁵⁵ *Id.*

ple opportunity to either amend or dispose of the contention” *after* the NRC Staff issues its Environmental Impact Statement.¹⁵⁶ Meanwhile, the contention remains pending.

SACE/TEC Contention 3 is admitted.¹⁵⁷

D. Ruling on Petitions

As set forth above, BREDL, SACE, and TEC have all demonstrated standing in accordance with 10 C.F.R. § 2.309(d). Only SACE and TEC have proffered admissible contentions meeting the requirements of 10 C.F.R. § 2.309(f)(1). Therefore, in accordance with 10 C.F.R. § 2.309(a), the Board denies BREDL’s request for hearing and petition for leave to intervene, and grants the request for hearing and petition for leave to intervene by SACE and TEC. SACE and TEC are admitted as parties to this proceeding.

E. Hearing Procedure

Upon admission of a contention the Board must identify the specific hearing procedures to be used.¹⁵⁸ Section 2.310(d) of 10 C.F.R. provides that, in most licensing matters, the procedures in Subpart G of 10 C.F.R. Part 2 will be used only if a contention “necessitates resolution of issues of material fact relating to the occurrence of a past activity, where the credibility of an eyewitness may reasonably be expected to be at issue, and/or issues of motive or intent of the party or eyewitness material to the resolution of the contested matter.”¹⁵⁹ Unless the Board determines that section 2.310(d) or other relevant regulations require

¹⁵⁶ *Catawba*, CLI-83-19, 17 NRC at 1049.

¹⁵⁷ In admitting Contention 3, the Board gives no weight to the supporting affidavit of Dr. M.V. Ramana. Regardless of Dr. Ramana’s qualifications, he opines only that the factual assertions in Contention 3 are true, and that the opinions expressed therein are based on his best professional judgment. SACE/TEC Pet., Attach. 2, Declaration of Dr. M.V. Ramana in Support of Petitioners’ Contention 3 (Impermissible Discussion of Energy Alternatives [sic] and Technical Advantages) at 1-2 (June 8, 2017). The Board does not understand any of the underlying facts to be in dispute, and we neither seek nor can we accept alleged expert opinion testimony on the requirements of federal law — most especially on the requirements of National Environmental Policy Act or of the NRC’s implementing regulations. *See, e.g., United States v. McIver*, 470 F.3d 550, 561-62 (4th Cir. 2006) (“[O]pinion testimony that states a legal standard or draws a legal conclusion by applying law to the facts is generally inadmissible.”); *cf. Nieves-Villanueva v. Soto-Rivera*, 133 F.3d 92, 99-100 (1st Cir. 1997) (recognizing that the “well-recognized exception” to excluding expert testimony on purely legal issues is for questions of foreign law).

¹⁵⁸ 10 C.F.R. § 2.310(a).

¹⁵⁹ *Id.* § 2.310(d).

otherwise,¹⁶⁰ a proceeding may be conducted under the procedures of Subpart L of 10 C.F.R. Part 2.¹⁶¹

No participant addressed the selection of hearing procedures in its pleadings. In the absence of any assertion that Subpart G procedures should be used, the Subpart L hearing procedures will be used to adjudicate each admitted contention.

III. ORDER

For the foregoing reasons:

A. BREDL's petition is *denied*. BREDL's sole proffered contention is *not admitted*.

B. The petition of SACE and TEC is *granted*. SACE/TEC Contention 1 is *not admitted*. SACE/TEC Contention 2 and SACE/TEC Contention 3 are *admitted*.

C. The admitted contentions will be adjudicated under the procedures set forth in 10 C.F.R. Part 2, Subpart L.

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. Gary S. Arnold
ADMINISTRATIVE JUDGE

Dr. Sue H. Abreu
ADMINISTRATIVE JUDGE

Rockville, Maryland

October 10, 2017

¹⁶⁰ See, e.g., *id.* § 2.310(b)-(c) (providing that, unless the parties agree otherwise, enforcement matters and licensing of uranium facility construction and operation must be conducted under Subpart G).

¹⁶¹ *Id.* § 2.310(a).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

William J. Froehlich, Chairman
Dr. Mark O. Barnett
G. Paul Bollwerk, III

In the Matter of

Docket No. 40-9075-MLA
(ASLBP No. 10-898-02-MLA-BD01)

POWERTECH USA, INC.
(Dewey-Burdock In Situ Uranium
Recovery Facility)

October 19, 2017

This Order concerns a motion for summary disposition in an ongoing proceeding involving the Source Materials License issued to Powertech (USA), Inc., (Powertech) to construct and operate an in situ uranium recovery (ISR) facility. In the prior Partial Initial Decision, the Board had ruled in favor of the NRC Staff and Powertech on all contentions save for Contentions 1A and 1B, on which the Board found for the Oglala Sioux Tribe and Consolidated Intervenors. Regarding Contention 1B, the Board determined that the NRC Staff had not complied with the National Historic Preservation Act (NHPA) because meaningful government-to-government consultations between the Oglala Sioux Tribe and the NRC Staff had not taken place. As to Contention 1A, the Board concluded that the NRC Staff had not satisfied its National Environmental Policy Act (NEPA) responsibility because the Final Supplemental Environmental Impact Statement (FSEIS) did not adequately address Sioux tribal cultural, religious, and historic resources. In this Order, the Board grants the NRC Staff's motion for summary disposition on Contention 1B, but denies it on Contention 1A.

RULES OF PRACTICE: SUMMARY DISPOSITION; STANDARDS

The standards governing summary disposition in Subpart L proceedings are set out at 10 C.F.R. § 2.1205, and “are based upon those the federal courts apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure.” *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 297 (2010).

RULES OF PRACTICE: SUMMARY DISPOSITION; STANDARDS

Summary disposition may be granted “if the filings in the proceedings, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law.” 10 C.F.R. § 2.710(d)(2). This standard establishes a two-part test: First, a board must determine if any material facts remain genuinely in dispute; second, if no disputes remain, the board must determine if the movant’s legal position is correct. *See Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-11-31, 74 NRC 643, 648 (2011).

RULES OF PRACTICE: SUMMARY DISPOSITION; BURDEN OF PROOF

The moving party carries the burden of demonstrating that summary disposition is appropriate and must explain in writing the basis for the motion. *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-93-22, 38 NRC 98, 102 (1993). To support its motion, the moving party must also “attach . . . a short and concise statement of the material facts as to which the moving party contends that there is no genuine issue to be heard.” 10 C.F.R. § 2.710(a). “The evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in his favor.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986).

RULES OF PRACTICE: SUMMARY DISPOSITION

Summary disposition should not be granted if it would require the board to engage in the making of “[c]redibility determinations, the weighing of the evidence, [or] the drawing of legitimate inferences from the facts.” *Anderson*, 477 U.S. at 255. Doing so would require the board to “conduct a trial on the written record by weighing the evidence and endeavoring to determine the truth of the matter.” *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 6 and 7), LBP-16-3, 83 NRC 169, 176 (2016). Instead, the board’s

only role in deciding whether to grant a motion for summary disposition is to determine whether any genuine issues of material fact exists. *Anderson*, 477 U.S. at 249.

NATIONAL HISTORIC PRESERVATION ACT

Section 106 of the NHPA requires federal agencies, prior to approving any “undertaking,” to “take into account the effect of the undertaking on any historic property.” 54 U.S.C. § 306108 (2012). A federal agency must make a reasonable and good faith effort to identify historic properties; determine whether identified properties are eligible for listing on the National Register of Historic Places based on the criteria in 36 C.F.R. § 60.4; assess the effects of the undertaking on any eligible historic properties found; determine whether the effects will be adverse; and avoid or mitigate any adverse effects. 36 C.F.R. §§ 800.4(b)-(c), 800.5, 800.6. The federal agency must also confer with a State Historic Preservation Officer and seek the approval of the Advisory Council on Historic Preservation. *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 805 (9th Cir. 1999).

NATIONAL HISTORIC PRESERVATION ACT: CONSULTATION

The NHPA requires agencies to consider the unique interests and viewpoints of Native Americans in determining what to place on the National Register, such that “[p]roper[ies] of traditional religious and cultural importance to an Indian tribe . . . may be determined to be eligible for inclusion on the National Register.” 54 U.S.C. § 302706(a). Section 106 also contains a role for Indian tribes as consulting parties in the NHPA process: “[I]n carrying out its responsibilities under [section 106 of the NHPA], a Federal agency shall consult with any Indian tribe . . . that attaches religious and cultural significance to [eligible] proper[ies].” *Id.* § 302706(b).

NATIONAL HISTORIC PRESERVATION ACT: CONSULTATION

Each agency during the consultation process must “[g]ather information from any Indian tribe . . . to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register.” 36 C.F.R. § 800.4(a)(4). Agency consultation must provide each Indian tribe with “a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking’s effects on such properties

and participate in the resolution of adverse effects.” *Id.* § 800.2(c)(2)(ii)(A). That opportunity should be both meaningful and timely. Additionally, the ACHP’s regulations also state that consultation efforts must “recognize the government-to-government relationship between the Federal Government and Indian tribes,” and be sensitive to the needs of the tribal participants. 36 C.F.R. § 800.2(c)(2)(ii)(C).

NATIONAL HISTORIC PRESERVATION ACT: CONSULTATION

The “NHPA does not empower an Indian tribe to delay or stall a licensing proceeding.” *Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), LBP-16-7, 83 NRC 340, 383 (2016), *appeals pending*. As is the case with the NEPA process, section 106 does not dictate an end result.

NATIONAL ENVIRONMENTAL POLICY ACT: PURPOSE OF INQUIRY

NEPA has two principal objectives. First, it seeks to ensure that an agency considers every significant aspect of the environmental impact of a proposed action. *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983). Second, it is intended to guarantee that the agency informs the public that it has, in fact, considered environmental concerns in its decision-making process. *Id.*

NATIONAL ENVIRONMENTAL POLICY ACT: HARD LOOK

To effect these cardinal goals, NEPA directs agencies to prepare a detailed environmental impact statement for proposed actions “significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(C) (2012). Adverse effects that must be evaluated include “ecological . . . , aesthetic, historic, cultural, economic, social, or health” effects. 40 C.F.R. § 1508.8. And in assessing any adverse effects, NEPA requires that an agency take a “hard look” at the environmental consequences of a planned action. *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 374 (1989). *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 745 (3d Cir. 1989).

NATIONAL ENVIRONMENTAL POLICY ACT: RULE OF REASON

NEPA does not require agencies to analyze every conceivable aspect of a proposed project. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002). NEPA’s requisite “hard look” is subject to a “rule of reason.” *See, e.g., NRDC v. Morton*, 458 F.2d 827,

834 (D.C. Cir. 1972). Agencies need not consider risks that are “remote and speculative” or events that have a very low probability of occurring.

NATIONAL ENVIRONMENTAL POLICY ACT: RULE OF REASON

An environmental impact statement is not a “research document,” and, in assessing foreseeable impacts, there “will always be more data that could be gathered,” so that agencies “must have some discretion to draw the line and move forward with decisionmaking.” *Pilgrim*, CLI-10-11, 71 NRC at 315 (citing *Town of Winthrop v. FAA*, 535 F.3d 1, 11-13 (1st Cir. 2008)). In assessing these impacts, the agency is not required to use “the best scientific methodology” or study phenomena “for which there are not yet standard methods of measurement or analysis.” *Id.* (quoting *Winthrop*, 535 F.3d at 12-13). Agencies are free to “select their own methodology as long as that mythology is reasonable.” *Id.* at 316 (quoting *Winthrop*, 535 F.3d at 13).

NATIONAL ENVIRONMENTAL POLICY ACT: UNOBTAINABLE INFORMATION

When an agency is unable to obtain complete information to fully assess foreseeable significant adverse effects on the human environment, “the agency shall always make clear that such information is lacking. 40 C.F.R. § 1502.22. Furthermore, if the incomplete information is “essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant,” the agency shall obtain the information and include it in the environmental impact statement. *Id.* § 1502.22(a). If the costs of obtaining the information are exorbitant, the agency must include in the FSEIS: (1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating 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. *Id.* § 1502.22(b).

NATIONAL ENVIRONMENTAL POLICY ACT: ENVIRONMENTAL IMPACT STATEMENT; LICENSING BOARD DECISION AS AMENDMENT

In an NRC adjudicatory hearing, even if the board finds the environmental impact statement inadequate in some respects, the board’s findings, as well as

the adjudicatory record, “become, in effect, part of the [FSEIS].” *In re Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 53 (2001). A board’s ultimate NEPA judgments are made on the basis of the entire adjudicatory record in addition to the NRC Staff’s FSEIS. *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-05-13, 61 NRC 385, 404 (2005).

RULES OF PRACTICE: SUMMARY DISPOSITION; MATERIAL FACT IN DISPUTE

The Board has the authority to deny a motion for summary disposition if it finds there is a material fact in dispute, even if the opposing party fails to make any claim there is a material fact in dispute. *See Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753-54 (1977).

RULES OF PRACTICE: MANDATORY DISCLOSURES

Section 2.336 of 10 C.F.R. provides for “general discovery” in Subpart L proceedings. The regulation requires that “all parties . . . shall . . . disclose and provide . . . all documents and data compilations in the possession, custody, or control of the party that are relevant to the contentions.” 10 C.F.R. § 2.336(a)(2)(i). The regulation establishes that each party’s duty to submit these mandatory disclosures is ongoing and that each party must make these mandatory disclosures once a month and without the filing of a discovery request by other parties. *Id.* § 2.336(a), (d). The scope of mandatory disclosures is “wide-reaching.” *Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 572 (2009). Because the mandatory disclosures are the only form of discovery in Subpart L proceedings, they, “like all discovery exchanges, cover a vast array of information and documents that are not evidence and need not meet the requirements of admissible evidence.” *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-30, 70 NRC 1039, 1046 (2009) (citing 10 C.F.R. § 2.705(b)(1)).

LICENSING BOARD(S): AUTHORITY TO MANAGE SCHEDULE FOR ADJUDICATORY HEARING

Although it is inappropriate for the Board to direct the NRC Staff in the completion of its NEPA review activities, it is also clear that the Board is given the responsibility to manage the schedule for this adjudicatory proceeding. *See* 10 C.F.R. §§ 2.319(k), 2.332.

MEMORANDUM AND ORDER
(Granting Summary Disposition as to Contention 1B,
Denying Summary Disposition as to Contention 1A,
and Establishing Further Procedures)

On April 30, 2015, this Licensing Board issued a Partial Initial Decision addressing seven contentions raised by the Oglala Sioux Tribe and the Consolidated Intervenors concerning the Source Materials License issued to Powertech (USA), Inc. (Powertech), to construct and operate an in situ uranium recovery (ISR) facility.¹ The Board ruled in favor of the NRC Staff and Powertech on all contentions save for Contentions 1A and 1B, on which the Board found for the Oglala Sioux Tribe and Consolidated Intervenors.² Regarding Contention 1B, the Board determined that the NRC Staff had not complied with the National Historic Preservation Act (NHPA) because meaningful government-to-government consultations between the Oglala Sioux Tribe and the NRC Staff had not taken place.³ As to Contention 1A, the Board concluded that the NRC Staff had not satisfied its National Environmental Policy Act (NEPA) responsibility because the Final Supplemental Environmental Impact Statement (FSEIS) did not adequately address Sioux tribal cultural, religious, and historic resources.⁴ The Board stated that these deficiencies could be remedied if the NRC Staff initiated government-to-government consultations with the Oglala Sioux Tribe⁵ and took the steps necessary to ensure that an adequate analysis of tribal cultural resources was included in the FSEIS and the Record of Decision in this case.⁶

The NRC Staff now moves for summary disposition on both contentions. We grant the motion as to Contention 1B, concluding that over the past 2 years the combination of multiple attempts at direct correspondence, a May 19, 2016 face-to-face meeting, and a January 31, 2017 teleconference between the Oglala Sioux Tribe and the NRC Staff satisfies, at a bare minimum, the NHPA's requirement that the NRC Staff consult with the Oglala Sioux Tribe. However, we deny the NRC Staff's motion as to Contention 1A, concluding that the NRC Staff has failed to establish that there are no material facts in dispute relative to the NRC Staff's NEPA burden to adequately address the impact of the Dewey-Burdock project on tribal cultural resources. More specifically, the NRC Staff has failed to demonstrate that there is no material factual dispute regarding the

¹ LBP-15-16, 81 NRC 618 (2015), *aff'd*, CLI-16-20, 84 NRC 219 (2016).

² *Id.* at 708-10.

³ *Id.* at 708.

⁴ *Id.*

⁵ *Id.* at 656-57.

⁶ *Id.* at 653-55.

reasonableness of its method for assessing impacts from the Dewey-Burdock project on Sioux tribal cultural resources. Finally, given this ruling, as steps toward resolving Contention 1A, we establish a schedule for this proceeding that provides the NRC Staff and the other parties an additional opportunity to establish a methodology for assessing such cultural resource impacts, as well as, if necessary, an evidentiary hearing and a subsequent Board decision on the reasonableness of the NRC Staff's methodology.

I. BACKGROUND

1. *Procedural History Preceding the Partial Initial Decision*

A detailed procedural history of this proceeding can be found in the Board's April 30, 2015 Partial Initial Decision.⁷ In summary, on February 25, 2009, Powertech applied for a combined source and 11e.(2) byproduct material license to construct and operate the proposed Dewey-Burdock in situ leach uranium recovery facility in Custer and Fall River counties, South Dakota.⁸ Subsequently, the Oglala Sioux Tribe filed an April 6, 2010 Request for Hearing and Petition for Leave to Intervene and, on March 8, 2010, six individuals and two organizations (collectively, Consolidated Intervenors) filed an additional Request for Hearing and Petition for Leave to Intervene.⁹ In an August 5, 2010 ruling, the Board admitted both the Oglala Sioux Tribe and Consolidated Intervenors as Intervenors.¹⁰ The Board admitted four of the Oglala Sioux Tribe's contentions and three of the Consolidated Intervenors' contentions.¹¹

On November 26, 2012, the NRC Staff issued a Draft Supplemental Environmental Impact Statement (DSEIS).¹² In a January 25, 2013 submission, the Oglala Sioux Tribe and Consolidated Intervenors proposed new contentions based on the DSEIS.¹³ In a July 22, 2013 decision, the Board admitted a total of nine contentions based on the new and original contentions.¹⁴ Thereafter, with

⁷ *Id.* at 626-35.

⁸ *Id.* at 626-27.

⁹ *Id.* at 628.

¹⁰ *Id.* at 629.

¹¹ *Id.* at 629-30.

¹² *Id.*

¹³ *Id.*

¹⁴ LBP-13-9, 78 NRC 37, 112-13 (2013). The seven original contentions contesting the adequacy of various aspects of Powertech's Environmental Report were migrated to challenges of the applicable portions of the DSEIS. *Id.* at 50. Several of the original seven contentions were reformulated by the Board for a total of five admitted contentions, and of the three new contentions that were admitted, one was split into two contentions for a total of four new contentions. *Id.* at 112-13.

the January 29, 2014 issuance of the FSEIS, the admitted contentions migrated to challenge the FSEIS.¹⁵ Subsequently, two of the admitted contentions — Contentions 14A and 14B — were voluntarily withdrawn by the Oglala Sioux Tribe.¹⁶

On April 8, 2014, the NRC Staff issued a 10 C.F.R. Part 40 source materials license to Powertech, authorizing it to possess and use source and byproduct material in connection with the Dewey-Burdock project.¹⁷ With the license in effect, from August 19 through August 21, 2014, the Board held an evidentiary hearing on the Oglala Sioux Tribe's and Consolidated Intervenors' seven contentions.¹⁸ On April 30, 2015, the Board issued a Partial Initial Decision on the merits of those seven contentions.¹⁹

2. The Partial Initial Decision and the Commission's Review

The Partial Initial Decision resolved all contentions in favor of the NRC Staff and Powertech except for Contentions 1A and 1B, on which the Oglala Sioux Tribe and Consolidated Intervenors prevailed.²⁰ Contention 1A pertained to the NRC Staff's NEPA obligation to assess the impacts to Native American cultural, religious, and historic resources.²¹ The NRC Staff explained that its efforts to satisfy its NEPA obligation included inviting a total of twenty tribes "to participate in identification efforts" and "provid[ing] all interested tribes a reasonable opportunity to identify historic properties, advise on the identification and evaluation of such properties, comment on the undertaking, and participate in resolving potential adverse effects."²² The NRC Staff noted that the Oglala Sioux Tribe "had the same opportunity to participate in each phase of the NRC

¹⁵ LBP-15-16, 81 NRC at 631-32. Under the "migration tenet," when the information in the NRC Staff's final environmental impact statement is "sufficiently similar" to the NRC Staff's draft environmental impact statement, an existing contention based on the draft environmental impact statement can "migrate" to apply to the NRC Staff's final environmental impact statement as it applied to the draft environmental impact statement. *See generally Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), CLI-16-13, 83 NRC 566, 570 n.17 (2016) (citing *Strata Energy, Inc.* (Ross In Situ Uranium Recovery Project), LBP-13-10, 78 NRC 117, 132-33 (2013)).

¹⁶ LBP-15-16, 81 NRC at 633.

¹⁷ *Id.* at 632. On April 30, 2014, the Board granted a temporary stay of the license in response to motions to stay from both intervenors. *Id.* However, after oral arguments on those motions, the Board lifted the temporary stay and denied the motion on May 20, 2014. *Id.*

¹⁸ *Id.* at 633.

¹⁹ *Id.* at 708-11.

²⁰ *Id.* at 708-10.

²¹ *Id.* at 653.

²² *Id.* at 652.

Staff's review as all consulting tribes," and that it was "afforded an opportunity to participate in a field survey, but [they] chose not to participate."²³

The Board found these efforts insufficient because "[t]o fulfill the agency's NEPA . . . responsibilities to protect and preserve cultural, religious, and historical sites important to the Native American tribal cultures in the Powertech project area, the NRC Staff must conduct a study or survey of tribal cultural resources before granting a license."²⁴ The Board determined that the NRC Staff failed to fulfill this obligation because the FSEIS 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 the other consulting Native American tribes."²⁵ Accordingly, the Board concluded that "[w]ithout additional analysis as to how the Powertech project may affect the Sioux Tribes' cultural, historical, and religious connections with the area, NEPA's hard look requirement ha[d] not been satisfied, and potentially necessary mitigation measures ha[d] not been established."²⁶

On Contention 1B, the Board decided that the NRC Staff had failed to provide the Oglala Sioux Tribe with a meaningful opportunity for government-to-government consultation.²⁷ Attempts at consultation began in 2010 when the NRC Staff invited multiple tribes to participate as consulting parties in the NHPA section 106 process.²⁸ The Board concluded, however, that consultation efforts with the Oglala Sioux Tribe had broken down by 2014, resulting in a majority of the consulting tribes declining to participate in the open-site survey.²⁹ Although the NRC Staff held several large group meetings with representatives of multiple Native American tribes, solicited survey proposals, and included reports from three of the tribes, in the Board's estimation, these efforts were insufficient to constitute the requisite NHPA government-to-government consultation with the Oglala Sioux Tribe specifically.³⁰ The meetings held between the NRC Staff and the Oglala Sioux Tribe had not been one-on-one consultations, but instead were "large group meetings, with members of many diverse Tribes, all with varying degrees of attachment" to the license area.³¹ Additionally, while the NRC Staff sent many letters to the Oglala Sioux Tribe, the Board noted that "quantity

²³ *Id.* at 652-53.

²⁴ *Id.* at 655.

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.* at 657.

²⁸ *Id.* at 644.

²⁹ *Id.* at 648-49, 655.

³⁰ *Id.* at 656.

³¹ *Id.*

does not necessarily equate with meaningful or reasonable consultation.”³² The Board determined that, while “[t]he NRC Staff [wa]s at least partly at fault for the failed consultation process[,] . . . the Oglala Sioux Tribe [did] share some responsibility for the inadequacy of the FSEIS and the lack of meaningful consultation” because “some of its demands to engage with the NRC Staff were patently unreasonable.”³³

The Board concluded that additional consultation with the Oglala Sioux Tribe, the tribe with “the most direct historical, cultural, and religious ties to the area,” was required for NRC Staff to satisfy its consultation obligations under section 106.³⁴ The Board observed that the NHPA errors could be remedied 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,” adopting any mitigation measures, and supplementing, if necessary, the FSEIS and Record of Decision.³⁵

The Board thus retained jurisdiction over this proceeding pending further consultations between the Oglala Sioux Tribe and the NRC Staff.³⁶ The Board further required the NRC Staff to submit monthly status reports describing its consultation efforts with the Oglala Sioux Tribe.³⁷

Subsequently, all four parties to the proceeding timely filed petitions for review of the Partial Initial Decision.³⁸ Relevant to the motion now before the Board, the NRC Staff and Powertech challenged the Board’s rulings on Contentions 1A and 1B and the Board’s retention of jurisdiction over these two contentions.³⁹ On December 23, 2016, the Commission agreed with the Board

³² *Id.*

³³ *Id.* at 656-57. Specifically, the Board found that the cost of the survey proposal, estimated at close to \$1 million, Tr. at 807 (Aug. 19, 2014), was unreasonable. LBP-15-16, 81 NRC at 657 n.229. The Makoche Wowapi proposal was estimated to cost approximately \$818,000. Makoche Wowapi/Mentz-Wilson Consultants, Proposal with Cost Estimate for Traditional Cultural Properties Survey for Proposed Dewey Burdock Project (Sept. 27, 2012) at 1 (ADAMS Accession No. ML15244B360) [hereinafter Makoche Wowapi Proposal] (this redacted version was created for use in an evidentiary hearing in another in situ mining license proceeding, a public version was not created when the Board held hearings prior to the Partial Initial Decision).

³⁴ *Id.* at 656-57.

³⁵ *Id.* at 657-58.

³⁶ *Id.* at 658.

³⁷ *Id.*

³⁸ *See* CLI-16-20, 84 NRC at 224-27.

³⁹ *Id.* at 227. The Oglala Sioux Tribe and the Consolidated Intervenors both also sought review of the Board’s decision to leave the materials license in place, rather than suspending the license due to the deficiencies in the NEPA review. *Id.* at 225. The Board left the license in place, but provided the Oglala Sioux Tribe with the opportunity to petition for a stay within ten days of the Initial Decision if the Oglala Sioux Tribe believed that cultural, historic, or religious sites were

(Continued)

that the NRC Staff's efforts were inadequate, affirmed the Board's decision on Contentions 1A and 1B, and acknowledged the proceeding remained in the Board's jurisdiction to resolve the deficiencies identified in the Partial Initial Decision.⁴⁰

Addressing Contention 1A, the Commission concluded that the Board did not commit "clear error" in its factual determination that the NRC Staff's consideration of Oglala Sioux Tribe and other Native American cultural resources failed to satisfy NEPA's hard look standard.⁴¹ On Contention 1B, the Commission determined that "[t]he Board, after a merits hearing, reasonably concluded that the Staff's consultation with the Tribe was insufficient to meet these requirements."⁴² Thus, the Commission found no legal error in the Board's findings on Contentions 1A and 1B.⁴³

Lastly, as to the retention of jurisdiction, the NRC Staff and Powertech argued that the Board overstepped its authority by "prescribing a process for the Staff to resolve the deficiencies identified in Contentions 1A and 1B."⁴⁴ While the Commission agreed in principle that it would exceed the Board's authority to direct the NRC Staff to engage in "government-to-government" consultation with the Oglala Sioux Tribe, the Commission found that the Board's decision did not state that it would directly oversee the NRC Staff's review of cultural resources — "instead, it [left] it to the Staff — either by agreement among the parties or by motion for summary disposition — to determine when it has addressed the deficiencies identified by the Board."⁴⁵ The Commission thus concluded that the Board had not overstepped the bounds of its authority, and, in carrying out the Board's order, the NRC Staff "is free to select whatever course of action it deems appropriate to address the deficiencies identified in the Board's order, including, but not limited to further government-to-government consultation."⁴⁶

subject to immediate and irreparable harm. LBP-15-16, 81 NRC at 658. The Oglala Sioux Tribe did not bring such a petition to the Board, and the Commission affirmed the Board's decision to leave the license in place. CLI-16-20, 84 NRC at 245.

⁴⁰ CLI-16-20, 84 NRC at 262.

⁴¹ *Id.* at 247-48.

⁴² *Id.* at 249.

⁴³ *Id.*

⁴⁴ *Id.* at 250 (internal quotation marks omitted).

⁴⁵ *Id.*

⁴⁶ *Id.* at 251. The Commission also affirmed the Board's direction to the NRC Staff to submit monthly status reports. *Id.* at 262.

3. *Procedural History Subsequent to the Partial Initial Decision*

Although the Oglala Sioux Tribe and the NRC Staff differ in how they characterize much of the NRC Staff's consultation efforts after the Partial Initial Decision, both parties' timelines begin on June 23, 2015, with a letter from the Director of the Division of Fuel Cycle Safety, Safeguards and Environmental Review, NRC Office of Nuclear Material Safety and Safeguards, to John Yellow Bird Steele, the President of the Oglala Sioux Tribe, seeking to reinstate government-to-government consultation.⁴⁷ In that letter, the NRC Staff stated that it "recognize[d] the purpose and importance of the consultation process in its evaluation of environmental effects . . . on cultural and historic resources" and that it "appreciate[d] the opportunity to further consult with the Oglala Sioux Tribe."⁴⁸ The letter "extend[ed] another invitation for the Oglala Sioux Tribe to meet with the NRC staff on a government-to-government basis."⁴⁹ The Oglala Sioux Tribe responded approximately 1 month later seeking to clarify the roles and responsibilities of the NRC Staff and its plans to fulfill its NHPA and NEPA obligations.⁵⁰

Nearly a year passed before the first face-to-face consultation meeting took place on May 19, 2016, in Pine Ridge, South Dakota.⁵¹ The Pine Ridge face-to-face meeting included a member from the Oglala Sioux Tribe's Executive Committee, the Oglala Sioux Tribe's Tribal Historic Preservation Officer (THPO), the Oglala Sioux Tribe's counsel, a Division Director for the NRC Staff, the NRC Staff's counsel, and the NRC Staff's project managers responsible for oversight of the Dewey-Burdock project.⁵² The purpose, as described in the meeting summary, was to introduce the new NRC management team and to begin government-to-government discussions regarding identification of cultural

⁴⁷ NRC Staff's Motion for Summary Disposition of Contentions 1A and 1B at 20 (Aug. 3, 2017) [hereinafter NRC Staff's Motion]; Oglala Sioux Tribe's Response in Opposition to NRC Staff Motion for Summary Disposition of Contentions 1A and 1B at 4 (Sept. 1, 2017) [hereinafter Oglala Sioux Tribe's Response]; Letter from Marissa G. Bailey, Director, Division of Fuel Cycle Safety, Safeguards, and Environmental Review, to John Yellow Bird Steele, President, Oglala Sioux Tribe at 1-2 (June 23, 2015) (ADAMS Accession No. ML15175A411) [hereinafter NRC Staff June 23, 2015 Letter].

⁴⁸ NRC Staff June 23, 2015 Letter at 1-2.

⁴⁹ *Id.* at 2.

⁵⁰ Letter from Denis Yellow Thunder, Tribal Historic Preservation Officer (THPO), Oglala Sioux Tribe, to Marissa G. Bailey, Director, Division of Fuel Cycle Safety, Safeguards, and Environmental Review (July 22, 2015) (ADAMS Accession No. ML15203A108).

⁵¹ Summary of Meeting with the Oglala Sioux Tribe Regarding Dewey-Burdock In Situ Uranium Recovery Project (May 19, 2016) (ADAMS Accession No. ML16182A069) [hereinafter May 19, 2016 Meeting Summary].

⁵² *Id.* at 1.

resources in the license area.⁵³ At this meeting, the Oglala Sioux Tribe voiced its objections and concerns, asserting that “the tribal survey conducted in 2013 was incomplete and the survey methodology lacked scientific integrity.”⁵⁴ The open-site survey methodology, proposed by the NRC Staff in February 2013, allowed each tribe to send representatives to the site to examine any area during a 1-month period, and included per diem for three tribal representatives from each tribe, mileage reimbursement, and an unconditional grant from Powertech to each tribe of \$10,000.⁵⁵ The Oglala Sioux Tribe requested “that additional comprehensive and meaningful surveys be conducted and that other Tribes should also be involved.”⁵⁶

After this first and only face-to-face meeting between the NRC Staff and the Oglala Sioux Tribe, consultation again stalled as the NRC Staff allegedly tried to make contact with the Oglala Sioux Tribe’s staff, albeit apparently without involving the Oglala Sioux Tribe’s counsel.⁵⁷ Noting that in nearly 18 months, other than one face-to-face meeting, there had been no substantive progress toward agreeing upon a method to collect the missing data, the Board set up a teleconference with the parties.⁵⁸ The teleconference was held on November 7, 2016.⁵⁹ At the teleconference, the NRC Staff proposed setting up a future meeting with the Oglala Sioux Tribe to further discuss the survey and reiterated that it was the NRC Staff’s position that only the Oglala Sioux Tribe could provide the necessary information on sites of cultural and historical importance to the Tribe.⁶⁰

On January 13, 2017, the Oglala Sioux Tribe confirmed its availability for “government-to-government consultation between the Oglala Sioux Tribe and the United States,”⁶¹ including a discussion of a cultural resource identification process, and specifically how Powertech’s stated position (allegedly that it would only pay for the cost of an open-site survey) would affect the NRC Staff moving

⁵³ *Id.*

⁵⁴ *Id.* at 2.

⁵⁵ Letter from Kevin Hsueh, Chief, Environmental Review Branch, Division of Waste Management and Environmental Protection, to THPOs at 1-2 (Feb. 8, 2013) (ADAMS Accession No. ML13039A336).

⁵⁶ May 19, 2016 Meeting Summary at 2.

⁵⁷ NRC Staff’s Motion at 23-24; Oglala Sioux Tribe’s Response at 6-7.

⁵⁸ Memorandum and Order Requesting Scheduling Information for Telephone Conference Call (Oct. 13, 2016) (unpublished); *see also, e.g.*, NRC Staff’s Consultation Status Update (June 1, 2016).

⁵⁹ Tr. at 1-61 (Nov. 7, 2016).

⁶⁰ Tr. at 35 (Nov. 7, 2016).

⁶¹ Letter from Trina Lone Hill, THPO, Oglala Sioux Tribe, to Jill Caverly, Acting Chief, Environmental Review Branch, Division of Fuel Cycle Safety, Safeguards, and Environmental Review at 1 (Jan. 13, 2017) (ADAMS Accession No. ML17017A505).

forward with the cultural resources assessment process.⁶² On January 31, 2017, the Oglala Sioux Tribe and the NRC Staff participated in such a conference call.⁶³ During that teleconference, the NRC Staff once again proposed an open-site survey with per diem and mileage reimbursement for those conducting the survey, and a \$10,000 honorarium to be paid to the Oglala Sioux Tribe, to which the Oglala Sioux Tribe once again objected.⁶⁴ The NRC Staff also requested information from the Oglala Sioux Tribe on any “known cultural or historic resources that may be impacted” and for input regarding an alternative survey approach, a time frame, and proposed costs by mid-March.⁶⁵ The Oglala Sioux Tribe, having indicated its discontent with the open-site proposal, reminded the NRC Staff of its preference for a more comprehensive approach similar to that proposed by Makoche Wowapi/Mentz-Wilson Consultants in 2012 (Makoche Wowapi approach), and sought substantive input from the NRC Staff regarding that approach.⁶⁶ The parties departed with plans to draft a summary of the current meeting and organize another to further discuss survey alternatives.⁶⁷

During February and March, the NRC Staff and the Oglala Sioux Tribe’s counsel corresponded via email to schedule a conference call and to complete the summary of the January teleconference for submission to the Board.⁶⁸ On

⁶² *Id.*

⁶³ Summary of Teleconference with the Oglala Sioux Tribe Regarding the Dewey-Burdock In Situ Uranium Recovery Project (Jan. 31, 2017) (ADAMS Accession No. ML17060A260) [hereinafter January 31, 2017 Teleconference Summary].

⁶⁴ *Id.*

⁶⁵ *Id.* at 2.

⁶⁶ *Id.* at 1. On September 27, 2012, the consulting tribes presented a cultural resources survey prepared by Makoche Wowapi/Mentz-Wilson Consultants to the NRC Staff as a means to identify resources in the area. LBP-15-16, 81 NRC at 646. The Makoche Wowapi proposal was estimated to cost approximately \$818,000. Makoche Wowapi Proposal at 1. The field operation would take approximately 8 weeks, and a report would be provided 60 days after completion of the field work. *Id.* The field work would require a twenty-person staff, including three “six-person crew[s] consist[ing] of a Crew Leader, a GPS Tech, a Cultural Advisor and three Field Crew members,” and a Project Manager and Field Supervisor. *Id.* However, this survey proposal covered only 2637 acres of the project area, *id.*, as opposed to the NRC Staff’s open-site survey which covered the full 10,000 acres of the Dewey-Burdock site when several tribes participated in 2013. Tr. at 724 (Aug. 19, 2015). When the NRC Staff received the proposal, it requested alternative methods for identification of cultural resources given the significant difference between the tribes’ survey proposal and Powertech’s proposal. LBP-15-16, 81 NRC at 646.

⁶⁷ January 31, 2017 Teleconference Summary at 2.

⁶⁸ *E.g.*, Email from Kellee L. Jamerson, Project Manager, Environmental Review Branch, Division of Fuel Cycle Safety, Safeguards, and Environmental Review, to Trina Lone Hill, THPO, Oglala Sioux Tribe (Feb. 23, 2017) and Email from Jeffrey C. Parsons, Counsel for the Oglala Sioux Tribe, to Kellee L. Jamerson, Project Manager, Environmental Review Branch, Division of Fuel Cycle Safety, Safeguards, and Environmental Review (Feb. 27, 2017) (ADAMS Accession No. ML17060A280).

April 14, 2017, having not yet received the requested information or other input from the Oglala Sioux Tribe, the NRC Staff sent a letter to the Oglala Sioux Tribe's THPO again offering a 2-week open-site survey proposal with specific arrangements and asking the Oglala Sioux Tribe to accept or reject the survey offer by May 5, 2017.⁶⁹ After delays due to confusion over staffing for the Oglala Sioux Tribe's THPO and due to the Oglala Sioux Tribe's need to devote time and resources to respond to a United States Environmental Protection Agency permit comment period relating to the Dewey-Burdock project site, it was not until May 31, 2017, that the Oglala Sioux Tribe sent a "detailed response" to the April 14 survey invitation with its objections.⁷⁰ In that response, the Oglala Sioux Tribe

provided significant discussion as to the types of methodologies that the Tribe expected would be included in any NRC Staff courses of action to remedy the NEPA and NHPA violations, including references to the desire to engage a contractor to facilitate and coordinate a survey, with involvement of the other Sioux tribes The Tribe also described its strong desire to involve elders in the process, as well as the need for tribal members to carefully consider the survey findings and allow for subsequent trips to the site to ensure an accurate assessment.⁷¹

Following this last letter, the NRC Staff concluded that after more than 2 years, "further consultation [was] unlikely to result in a mutually acceptable settlement of the dispute"⁷² and that it had satisfied its consultation responsibilities through the sole in-person meeting, the one teleconference, and the correspondence that had taken place since the Partial Initial Decision was issued.⁷³

⁶⁹ Letter from Cinthya I. Román, Chief, Environmental Review Branch, Division of Fuel Cycle Safety, Safeguards, and Environmental Review, to Trina Lone Hill, THPO, Oglala Sioux Tribe at 1-3 (Apr. 14, 2017) (ADAMS Accession No. ML17103A500) [hereinafter NRC Staff April 14, 2017 Letter].

⁷⁰ Letter from Trina Lone Hill, THPO, Oglala Sioux Tribe, to Cinthya I. Román, Chief, Environmental Review Branch, Division of Fuel Cycle Safety, Safeguards, and Environmental Review (May 31, 2017) (ADAMS Accession No. ML17152A109) [hereinafter Oglala Sioux Tribe May 31, 2017 Response]; Oglala Sioux Tribe's Response at 14-15. Although the NRC Staff requested a response from the Oglala Sioux Tribe by May 31, 2017, in a May 22 email from the NRC Staff's counsel, the NRC Staff expressed it was willing to wait until May 31, 2017, for a response from the Oglala Sioux Tribe on whether it would accept or reject the NRC Staff's invitation. Email from Emily Monteith, NRC Staff's counsel, to Jeffrey C. Parsons, Oglala Sioux Tribe's counsel (May 22, 2017) (ADAMS Accession No. ML17144A240).

⁷¹ Oglala Sioux Tribe's Response at 16.

⁷² Letter from Cinthya I. Román, Chief, Environmental Review Branch, Division of Fuel Cycle Safety, Safeguards, and Environmental Review, to Trina Lone Hill, THPO, Oglala Sioux Tribe at 2 (July 24, 2017) (ADAMS Accession No. ML17205A063).

⁷³ NRC Staff's Motion at 27.

Although the Oglala Sioux Tribe sought to engage in further consultation, noting that it “continued to believe there was significant opportunity for discussion and agreement on the survey approach,”⁷⁴ the NRC Staff claims it has sufficiently fulfilled its duties under the NHPA and NEPA. Accordingly, on August 3, 2017, the NRC Staff moved for summary disposition of Contentions 1A and 1B.⁷⁵ On September 1, 2017, Powertech filed a brief in support of the motion⁷⁶ while the Oglala Sioux Tribe and the Consolidated Intervenors filed responses opposing the motion.⁷⁷ Neither the Oglala Sioux Tribe nor the Consolidated Intervenors filed a reply to Powertech’s response in support of the NRC Staff’s motion.

II. STANDARDS FOR SUMMARY DISPOSITION

The standards governing summary disposition in Subpart L proceedings are set out in 10 C.F.R. § 2.1205, and “are based upon those the federal courts apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure.”⁷⁸ Summary disposition may be granted

if the filings in the proceeding, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law.⁷⁹

⁷⁴ Oglala Sioux Tribe’s Response at 18-19 (citing Oglala Sioux Tribe’s Response, Ex. 5, Email from Jeffrey C. Parsons, Counsel for the Oglala Sioux Tribe, to Emily Monteith, NRC Staff Counsel (Aug. 2, 2017)).

⁷⁵ NRC Staff’s Motion. The NRC Staff’s Motion included a statement of material facts in support of the motion and an affidavit of the NRC Staff Project Manager responsible for consultation efforts between the NRC Staff and the Oglala Sioux Tribe. NRC Staff’s Motion, Attach. 1, NRC Staff’s Statement of Material Facts to Support Motion for Summary Disposition of Contentions 1A and 1B (Aug. 3, 2017) [hereinafter NRC Staff’s Motion Statement of Facts]; NRC Staff’s Motion, Attach. 2, Affidavit of Kellee L. Jamerson Concerning the NRC Staff’s Motion for Summary Disposition of Contentions 1A and 1B (Aug. 3, 2017).

⁷⁶ Brief of Powertech (USA), Inc. in Support of United States Nuclear Regulatory Commission Staff’s Motion for Summary Disposition of Contentions 1A and 1B (Sept. 1, 2017) [hereinafter Powertech’s Brief in Support].

⁷⁷ Oglala Sioux Tribe’s Response; Consolidated Intervenors’ Opposition to Motion for Summary Disposition of Contentions 1A and 1B (Sept. 1, 2017) [hereinafter Consolidated Intervenors’ Response].

⁷⁸ *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 297 (2010).

⁷⁹ 10 C.F.R. § 2.710(d)(2) (2017). Although this proceeding is a simplified hearing governed by Subpart L of the regulations, 10 C.F.R. § 2.1205(c) states that “[i]n ruling on motions for summary disposition, the presiding officer shall apply the standards for summary disposition set forth in subpart G of this part.” 10 C.F.R. § 2.1205(c).

This standard establishes a two-part test: First, a board must determine if any material facts remain genuinely in dispute; second, if no such disputes remain, the board must determine if the movant's legal position is correct.⁸⁰

The moving party carries the burden of demonstrating that summary disposition is appropriate and must explain in writing the basis for the motion.⁸¹ To support its motion, the moving party must also "attach . . . a short and concise statement of the material facts as to which the moving party contends that there is no genuine issue to be heard."⁸² "The evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in his favor."⁸³

Alternatively, summary disposition should not be granted if it would require the board to engage in the making of "[c]redibility determinations, the weighing of the evidence, [or] the drawing of legitimate inferences from the facts."⁸⁴ Doing so would require the board to "conduct a trial on the written record by weighing the evidence and endeavoring to determine the truth of the matter."⁸⁵ Instead, the board's only role in deciding whether to grant a motion for summary disposition is to determine whether any genuine issue of material fact exists.⁸⁶

IV. DISCUSSION

1. Contention 1B: Consultation Process Pursuant to the National Historic Preservation Act

a. Legal Standards for the National Historic Preservation Act

Section 106 of the NHPA requires federal agencies, prior to approving any "undertaking" such as the licensing of the Dewey-Burdock project, to "take into account the effect of the undertaking on any historic property."⁸⁷ A federal agency must make a reasonable and good faith effort to identify historic properties;⁸⁸ determine whether identified properties are eligible for listing on the

⁸⁰ See *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-11-31, 74 NRC 643, 648 (2011).

⁸¹ *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-93-22, 38 NRC 98, 102 (1993); 10 C.F.R. § 2.1205(a).

⁸² 10 C.F.R. § 2.710(a).

⁸³ *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986).

⁸⁴ *Id.*

⁸⁵ *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 6 and 7), LBP-16-3, 83 NRC 169, 176 (2016).

⁸⁶ *Anderson*, 477 U.S. at 249.

⁸⁷ 54 U.S.C. § 306108 (2012). "Historic property" includes any "district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." *Id.* § 300308.

⁸⁸ 36 C.F.R. § 800.4(b).

National Register of Historic Places (National Register) based on the criteria in 36 C.F.R. § 60.4; assess the effects of the undertaking on any eligible historic properties found;⁸⁹ determine whether the effects will be adverse;⁹⁰ and avoid or mitigate any adverse effects.⁹¹ The federal agency must also confer with a State Historic Preservation Officer and seek the approval of the Advisory Council on Historic Preservation (ACHP).⁹²

The NHPA requires agencies to consider the unique interests and viewpoints of Native Americans in determining what to place on the National Register, such that “[p]roper[ies] of traditional religious and cultural importance to an Indian tribe . . . may be determined to be eligible for inclusion on the National Register.”⁹³ Section 106 also contains a role for Indian tribes as consulting parties in the NHPA process: “[I]n carrying out its responsibilities under [section 106 of the NHPA], a Federal agency shall consult with any Indian tribe . . . that attaches religious and cultural significance to [eligible] proper[ies].”⁹⁴

The ACHP’s current regulations require each agency during the consultation process to “[g]ather information from any Indian tribe . . . to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register.”⁹⁵ Agency consultation must provide each Indian tribe with “a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking’s effects on such properties, and participate in the resolution of adverse effects.”⁹⁶ That opportunity should be both meaningful and timely.⁹⁷ Additionally, the ACHP’s regulations also state that consultation efforts must “recognize the government-to-government relationship between the Federal Government and Indian tribes,” and be sensitive to the needs of the tribal participants.⁹⁸

On January 9, 2017, the NRC published its Tribal Policy Statement stating that the Agency seeks “to provide agencywide principles to achieve consistency but also encourage custom-tailored approaches to consultation and coordination

⁸⁹ *Id.* §§ 800.4(c), 800.5.

⁹⁰ *Id.* § 800.5.

⁹¹ *Id.* § 800.6.

⁹² *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 805 (9th Cir. 1999).

⁹³ 54 U.S.C. § 302706(a).

⁹⁴ *Id.* § 302706(b).

⁹⁵ 36 C.F.R. § 800.4(a)(4).

⁹⁶ *Id.* § 800.2(c)(2)(ii)(A).

⁹⁷ Exec. Order No. 13,175, § 5, 65 Fed. Reg. 67,249, 67,250 (Nov. 6, 2000).

⁹⁸ 36 C.F.R. § 800.2(c)(2)(ii)(C).

that reflect the circumstances of each situation and the preference of each Tribal government.”⁹⁹

b. Parties’ Positions

The NRC Staff argues that it is entitled to summary disposition because, although “the Section 106 consultation process did not ultimately result in a survey . . . by the Tribe, the Staff’s efforts to consult with the Tribe have been both meaningful and reasonable.”¹⁰⁰ The NRC Staff cites to several examples of its efforts to engage in meaningful government-to-government consultation with the Oglala Sioux Tribe. These include (1) extending an invitation to the President of the Oglala Sioux Tribe reiterating its commitment to consultation and inviting the Oglala Sioux Tribe to meet on a government-to-government basis; (2) holding a face-to-face meeting with members of the Oglala Sioux Tribe; (3) holding a teleconference with members of the Oglala Sioux Tribe; and (4) maintaining ongoing correspondence and contact with the Oglala Sioux Tribe to address its concerns.¹⁰¹ The NRC Staff argues that, having “promptly reaffirmed its commitment to government-to-government consultation” and having provided the Oglala Sioux Tribe with both an in-person meeting and a single teleconference, as well as the opportunity to offer concerns and objections to survey proposals in writing, it has diligently and proactively engaged in government-to-government consultation with the Oglala Sioux Tribe.¹⁰²

As an initial matter, the Oglala Sioux Tribe argues in response that Contention 1B is not susceptible to summary disposition because the facts the NRC Staff relies on as support are in dispute.¹⁰³ Specifically, the Oglala Sioux Tribe contends that its own account of the past 2 years materially differs from that of the NRC Staff.¹⁰⁴ Moreover, the Oglala Sioux Tribe asserts that, even accepting the NRC Staff’s characterization of the events over the past 2 years, the NRC Staff once again has not provided a meaningful opportunity for consultation due to a lack of substantive discussion.¹⁰⁵ The Oglala Sioux Tribe contends that the NRC Staff has not made a good faith effort to engage in government-to-government consultation because the NRC Staff has (1) been unresponsive over the past 2 years;¹⁰⁶ (2) remained inflexible in its engagement in identifying a potential

⁹⁹ NRC Tribal Policy Statement, 82 Fed. Reg. 2402, 2416 (Jan. 9, 2017).

¹⁰⁰ NRC Staff’s Motion at 27-28.

¹⁰¹ *See id.* at 20-27.

¹⁰² *Id.* at 28.

¹⁰³ Oglala Sioux Tribe’s Response at 2-3.

¹⁰⁴ *Id.* at 3.

¹⁰⁵ *Id.* at 29.

¹⁰⁶ *Id.* at 27.

cultural resource survey method;¹⁰⁷ (3) engaged in “behind the scenes strategy coordination with Powertech,” focusing its resources on “driving the negotiations into an unworkable position . . . instead of reasonably negotiating with the Tribe;”¹⁰⁸ and (4) “unilaterally abandon[ed] the [consultation] process with no coherent explanation or reasoning and proceed[ed] [to] immediately [file] for summary disposition,” rather than carrying out the consultation in “a manner sensitive to the concerns and needs” of the Oglala Sioux Tribe.¹⁰⁹ The Oglala Sioux Tribe complains that, despite these behaviors on the NRC Staff’s part, the NRC Staff now “paint[s] the Tribe as unresponsive and solely to blame” for the failure to find an agreeable means to conduct the survey.¹¹⁰ Lastly, the Oglala Sioux Tribe asserts that the burden to comply with the NHPA lies exclusively with the NRC Staff, not with the Oglala Sioux Tribe.¹¹¹ The Tribe sees the NRC Staff’s assertion that “adequate cultural resources information can only be obtained by the Tribe itself” as a means to push the burden onto the Oglala Sioux Tribe and to avoid its own NHPA responsibilities.¹¹²

Powertech, in support of the NRC Staff’s motion, incorporates each of the NRC Staff’s arguments, and adopts the NRC Staff’s statement of material facts.¹¹³ Further, Powertech argues that 7 years of consultation has now occurred, and “enough time and opportunities for the Tribe have passed the point in time where the ‘reasonableness’ of continuing the process no longer exists,” and that since this Board “prescribed direct, singular conduct with the Tribe,” which the NRC Staff has provided, the NHPA obligations have been satisfied.¹¹⁴ The Consolidated Intervenor, on the other hand, adopt the evidence, authority, and arguments presented by the Oglala Sioux Tribe’s response and support the Oglala Sioux Tribe’s opposition to the NRC Staff’s motion.¹¹⁵ The Consolidated Intervenor argue that “a fundamental and genuine dispute continues to exist due to the NRC Staff’s failure to communicate or negotiate in good faith with the Tribe or provide any reasonable proposal that contains any measure of compromise to address the Tribe’s oft-stated reasonable concerns.”¹¹⁶ The Consolidated Intervenor also object to both the form and substance of the consultation process. As to form, they contend that the use of teleconferenc-

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* at 30.

¹⁰⁹ *Id.* at 31.

¹¹⁰ *Id.* at 27.

¹¹¹ *Id.* at 27, 31.

¹¹² *Id.* at 29.

¹¹³ Powertech’s Brief in Support at 9.

¹¹⁴ *Id.* at 10, 12 & n.10.

¹¹⁵ Consolidated Intervenor’s Response at 1.

¹¹⁶ *Id.*

ing or video communication does not constitute consultation, and that the use of such technology shows “callous disregard for tribal cultural mores.”¹¹⁷ As to substance, Consolidated Intervenor assert that the NRC Staff lacked good faith by continually offering the Oglala Sioux Tribe the same open-site survey proposal and failing to provide an explanation for why the Makoche Wowapi approach was not reasonable.¹¹⁸ We address the arguments from both Powertech and Consolidated Intervenor in conjunction with addressing those raised by the NRC Staff and the Oglala Sioux Tribe.

c. Board Determination Regarding Summary Disposition for Contention 1B

First, we address the Oglala Sioux Tribe’s argument that summary disposition should not be granted on Contention 1B because material facts remain in dispute. Although the Oglala Sioux Tribe and the NRC Staff characterize the past 2 years differently, we conclude that the material aspects of the consultation process are not in dispute. The key undisputed material facts are that between the NRC Staff and the Oglala Sioux Tribe one in-person meeting occurred, one teleconference occurred, and numerous written letters and emails were sent. In the meeting, teleconference, and correspondence, the Oglala Sioux Tribe provided meaningful, substantive input regarding both the NRC Staff’s proposed open-site survey and the Oglala Sioux Tribe’s own proposal to base the survey on the Makoche Wowapi approach. Additionally, the Oglala Sioux Tribe was afforded a reasonable opportunity to offer alternative approaches for a cultural resources survey. We also conclude that these undisputed factual aspects of the consultation process provide a sufficient basis for the Board to rule on this aspect of the NRC Staff’s motion for summary disposition as a matter of law.¹¹⁹

To be sure, the record before the Board once more presents a close call as to whether the NRC Staff provided a meaningful opportunity under the NHPA for the Oglala Sioux Tribe to consult concerning the Dewey-Burdock project site. In this regard, the Board finds helpful the recent decision by the licensing board in the *Crow Butte* proceeding regarding what constitutes a meaningful opportunity under NHPA. In that proceeding, which factually parallels this case in many respects, that licensing board also faced the question whether the NRC Staff had satisfied its consultation obligations under the NHPA in the way the NRC Staff worked with the Oglala Sioux Tribe regarding the renewal of the ISR license for the Crow Butte facility in Nebraska.¹²⁰ The *Crow Butte* board

¹¹⁷ *Id.* at 14, 22.

¹¹⁸ *E.g., id.* at 2, 22-23.

¹¹⁹ *See* 10 C.F.R. § 2.710(d)(2).

¹²⁰ *See Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), LBP-16-7, 83 NRC 340 (2016), *appeals pending*.

found that while the NRC Staff's initial efforts were inadequate to satisfy the NHPA consultation requirement, by finally offering an in-person meeting with high-level NRC management officials, the NRC Staff had met its obligations.¹²¹

Here, as in *Crow Butte*, after a long-standing strained consulting relationship, the NRC Staff attempted to rectify its errors (albeit because we ruled it had to do so) by providing the Oglala Sioux Tribe with a true government-to-government consultation effort. Over the past 2 years, the NRC Staff continued to offer various opportunities for the Oglala Sioux Tribe to express tribal concerns, provide information, and bring forward an alternative survey proposal. The "NHPA does not empower an Indian tribe to delay or stall a licensing proceeding"¹²² just because the tribe dislikes the possible outcome of the consultation process. Further, as is the case with the NEPA process, section 106 does not dictate an end result. Rather, the NHPA places a burden on the NRC Staff to provide an opportunity to consult without requiring the NRC Staff to come to an agreement with a consulting tribe. While the NHPA does require the parties to consult in good faith,¹²³ it does not require the NRC Staff to select a methodology it believes is unreasonable because a tribe prefers that method. Nor does the NHPA require the NRC Staff to reject a methodology it believes to be reasonable because a tribe objects to it. The NHPA simply affords a tribe a meaningful opportunity to consult on federal actions that affect properties of religious or cultural significance to the tribe.¹²⁴

In the Board's Partial Initial Decision, we stated that the Oglala Sioux Tribe was "entitled to a meaningful, face-to-face, government-to-government consultation session with the NRC Staff regarding this specific project."¹²⁵ Although, as the Commission clarified, this was not the only way to accomplish the NHPA's consultation obligations, the NRC Staff nonetheless followed our suggestion and provided the Oglala Sioux Tribe with a one-on-one, face-to-face meeting in May 2016. As the *Crow Butte* board emphasized, NRC Staff leadership must attend any meeting alongside Oglala Sioux Tribal leadership for such a meeting to constitute government-to-government consultation.¹²⁶ The May 2016 Pine Ridge meeting was attended by high-level NRC Staff project managers and tribal representatives holding sufficiently "similar levels of authority."¹²⁷ In addition, the NRC Staff held a second one-on-one teleconference on January 31, 2017, giving the Oglala Sioux Tribe another opportunity to consult meaning-

¹²¹ *Id.* at 381-83.

¹²² *Id.* at 383.

¹²³ 36 C.F.R. § 800.4(b)(1); 82 Fed. Reg. at 2402, 2416.

¹²⁴ 54 U.S.C. § 302706 (2012).

¹²⁵ LBP-15-16, 81 NRC at 656.

¹²⁶ *Crow Butte*, LBP-16-7, 83 NRC at 375.

¹²⁷ *Id.*

fully. Having followed the guidance provided to it by this Board in its Partial Initial Decision, we find that this series of opportunities to consult is minimally sufficient to fulfill the requirements of section 106 of the NHPA.

Arguably, much of the rest of the NRC Staff's consultation efforts, whether by email or letters to the Oglala Sioux Tribe, were focused on form over substance, or quantity over quality. As stated in *Crow Butte*, the "NRC Staff has been much better served when, instead of just checking the boxes to meet some procedural minimum, it has worked with Indian tribes to comply with the substance of NEPA and the NHPA."¹²⁸ Nonetheless, we find that the NRC Staff's efforts, particularly in its engagement with the Oglala Sioux Tribe on a one-on-one basis through the May 2016 face-to-face meeting and the January 2017 teleconference, are sufficient to satisfy the NHPA's requirement that the NRC Staff afford the Oglala Sioux Tribe a meaningful opportunity to consult on federal actions that may affect properties of religious or cultural significance, as well as to advise the agency on identification and evaluation of such properties, and to participate in the resolution of any possible adverse consequences.¹²⁹

Accordingly, finding there to be no material facts in dispute regarding Contention 1B and having determined relative to the merits of the contention that the NRC Staff is entitled to a ruling in its favor regarding the substance of that contention as a matter of law, we grant the NRC Staff's summary disposition motion as to Contention 1B.

2. *Contention 1A: The NRC Staff's National Environmental Policy Act Responsibility*

a. *Legal Standards for the National Environmental Policy Act*

NEPA has two principal objectives. First, it seeks to ensure that an agency considers every significant aspect of the environmental impact of a proposed action.¹³⁰ Second, it is intended to guarantee that the agency informs the public that it has, in fact, considered environmental concerns in its decision-making process.¹³¹ To effect these cardinal goals, NEPA directs agencies to prepare a detailed environmental impact statement for proposed actions "significantly affecting the quality of the human environment."¹³² Adverse effects that must be evaluated include "ecological . . . , aesthetic, historic, cultural, economic, social,

¹²⁸ *Id.* at 371.

¹²⁹ 54 U.S.C. § 302706 (2012); 36 C.F.R. § 800.2(c)(2)(ii)(A).

¹³⁰ *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983).

¹³¹ *Id.*

¹³² 42 U.S.C. § 4332(C) (2012).

or health” effects.¹³³ And in assessing any adverse effects, NEPA requires that an agency take a “hard look” at the environmental consequences of a planned action.¹³⁴

NEPA does not, however, require agencies to analyze every conceivable aspect of a proposed project.¹³⁵ Rather, NEPA’s requisite “hard look” is subject to a “rule of reason.”¹³⁶ This means that agencies need not consider risks that are “remote and speculative” or events that have a very low probability of occurring.¹³⁷ Moreover, the Commission recognizes that an environmental impact statement is not a “research document,” and, in assessing foreseeable impacts, there “will always be more data [that] could be gathered,” so that agencies “must have some discretion to draw the line and move forward with decision-making.”¹³⁸ In assessing these impacts, the agency is not required to use “the best scientific methodology” or study phenomena “for which there are not yet standard methods of measurement or analysis.”¹³⁹ Rather, agencies are free to “select their own methodology as long as that methodology is reasonable.”¹⁴⁰

When an agency is unable to obtain complete information to fully assess foreseeable significant adverse effects on the human environment, “the agency shall always make clear that such information is lacking.”¹⁴¹ Furthermore, if the incomplete information is “essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant,” the agency shall obtain the information and include it in the environmental impact statement.¹⁴² However, if the costs of obtaining the information are exorbitant, the agency must include in the FSEIS:

- (1) A statement that such information is incomplete or unavailable;
- (2) a statement of the relevance of the incomplete or unavailable information to evaluating 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,

¹³³ 40 C.F.R. § 1508.8. The NRC is not bound by Council on Environmental Quality regulations; however, the regulations are entitled to considerable deference. LBP-15-16, 81 NRC at 636.

¹³⁴ *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 374 (1989).

¹³⁵ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002).

¹³⁶ *See, e.g., NRDC v. Morton*, 458 F.2d 827, 834 (D.C. Cir. 1972).

¹³⁷ *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 745 (3d Cir. 1989).

¹³⁸ *Pilgrim*, CLI-10-11, 71 NRC at 315 (citing *Town of Winthrop v. FAA*, 535 F.3d 1, 11-13 (1st Cir. 2008)).

¹³⁹ *Id.* (quoting *Winthrop*, 535 F.3d at 12-13).

¹⁴⁰ *Id.* at 316 (quoting *Winthrop*, 535 F.3d at 13).

¹⁴¹ 40 C.F.R. § 1502.22.

¹⁴² *Id.* § 1502.22(a).

and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.¹⁴³

Finally, in an NRC adjudicatory hearing, even if a board finds the environmental impact statement inadequate in some respects, the board's findings, as well as the adjudicatory record, "become, in effect, part of the [FSEIS]."¹⁴⁴ Thus, a board's ultimate NEPA judgments are made on the basis of the entire adjudicatory record in addition to the NRC Staff's FSEIS.¹⁴⁵

b. Parties' Positions

The NRC Staff asserts that it is entitled to summary disposition on Contention 1A because, even though it has not obtained information on the Sioux Nation's cultural, religious, and historic resources, it has satisfied NEPA's "hard look" standard because it "made reasonable efforts" to obtain the missing information.¹⁴⁶ According to the NRC Staff, despite its reasonable efforts to obtain information on the Oglala Sioux Tribe's cultural, religious, and historic resources, it is no closer to obtaining information on the Oglala Sioux Tribe's cultural resources than it was when the Board issued its Partial Initial Decision.¹⁴⁷ This is so, the NRC Staff maintains, because while the NRC Staff has provided the Oglala Sioux Tribe with multiple opportunities to provide this information, the Oglala Sioux Tribe has not availed itself of these opportunities.¹⁴⁸ Thus, the NRC Staff claims that its inability to obtain this information stems from the Oglala Sioux Tribe's refusal to cooperate, and not from the NRC Staff's failure to attempt to obtain the information.¹⁴⁹ According to the NRC Staff, because NEPA's rule of reason provides agencies with some discretion to "draw the line and move forward with decisionmaking,"¹⁵⁰ its reasonable efforts to obtain information on the Oglala Sioux Tribe's cultural resources satisfies its NEPA obligation.¹⁵¹

¹⁴³ *Id.* § 1502.22(b).

¹⁴⁴ *In re Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 53 (2001).

¹⁴⁵ *Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-05-13, 61 NRC 385, 404 (2005).

¹⁴⁶ NRC Staff's Motion at 34.

¹⁴⁷ *Id.* at 35.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* at 34.

¹⁵¹ *Id.* at 36.

The Oglala Sioux Tribe contends that the NRC Staff has yet to satisfy its NEPA burden. Citing the Board's conclusion in its Partial Initial Decision that NEPA's hard look requirement cannot be satisfied without additional analysis "as to how the Powertech project may affect the Sioux Tribes' cultural, historical, and religious connections with the area," the Oglala Sioux Tribe argues that "[t]he Board need go no further than to hold that the NRC Staff has provided no evidence of any NEPA analysis that could cure the FSEIS deficiencies."¹⁵² Further, the Oglala Sioux Tribe asserts that the NRC Staff, by trying to place the focus on the Oglala Sioux Tribe's refusal to participate in the open-site survey, is ignoring the fact it is the NRC Staff, not the Oglala Sioux Tribe, that bears the burden of satisfying NEPA.¹⁵³ The Oglala Sioux Tribe argues that its failure to agree with the NRC Staff on an acceptable method for assessing cultural resources does not obviate the NRC Staff's "independent duty to conduct NRC's cultural resources impact analysis."¹⁵⁴ Moreover, the Oglala Sioux Tribe maintains that the NRC Staff "is free to select whatever course of action it deems appropriate to address the [FSEIS] deficiencies,"¹⁵⁵ so long as its chosen method utilizes a "systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences."¹⁵⁶ The Oglala Sioux Tribe further disputes the NRC Staff's assertion that NEPA's rule of reason authorizes the NRC Staff to, under any circumstances, "neglect to analyze a foreseeable impact from its actions, such as impacts to cultural resources at issue here."¹⁵⁷

Again, Powertech concurs with the NRC Staff that there is no material fact showing a genuine dispute that would prevent a grant of this aspect of the NRC Staff's motion for summary disposition. Like the NRC Staff, Powertech blames the Oglala Sioux Tribe for the fact that the NRC Staff has not obtained any information on the Native American cultural resources missing from the FSEIS. According to Powertech, "the satisfaction of the Licensing Board's LBP-15-16 [NEPA] directive is inextricably linked to satisfaction of its directive for compliance with the NHPA. . . . [T]he pivotal reason that no amicable solution can be reached . . . is that the Tribe will not even participate in the *identification* phase of this process."¹⁵⁸ For their part, the Consolidated Intervenors list eight disputed material facts¹⁵⁹ and note there has been "no site visit, no involvement

¹⁵² Oglala Sioux Tribe's Response at 33.

¹⁵³ *See id.* at 34.

¹⁵⁴ *Id.*

¹⁵⁵ *Id.* at 33 (quoting CLI-16-20, 84 NRC at 251).

¹⁵⁶ *Id.* at 34 (quoting 42 U.S.C. § 4332(A) (1975)).

¹⁵⁷ *Id.* at 38.

¹⁵⁸ Powertech's Brief in Support at 14.

¹⁵⁹ Consolidated Intervenors' Response at 22-23.

of tribal elders, no ethnographic studies” since the Partial Initial Decision.¹⁶⁰ They further echo the Oglala Sioux Tribe’s claim that it is the NRC Staff’s responsibility to select a methodology for assessing tribal cultural resources that is “scientifically based . . . involving knowledgeable persons within the seven Bands of the Lakota of the potentially impacted area.”¹⁶¹ Additionally, citing to testimony from the evidentiary hearing in this proceeding, the Consolidated Intervenors argue that “it is not possible to accomplish an adequate [tribal cultural resource] survey in one limited open-site visit.”¹⁶² We address the arguments from both Powertech and Consolidated Intervenors in conjunction with addressing those raised by the NRC Staff and the Oglala Sioux Tribe.

c. Board Determination Regarding Summary Disposition of Contention 1A

In its Partial Initial Decision, the Board found that the NRC Staff failed to satisfy its NEPA obligation to protect and preserve tribal cultural, religious, and historical sites in the Dewey-Burdock project site by providing an adequate analysis of the impacts of the project on the cultural resources “of the Oglala Sioux Tribe and the majority of the other consulting Native American tribes.”¹⁶³ In particular, we concluded that, to fulfill its NEPA obligation relative to the cultural resources of Native American tribes, “the NRC Staff must conduct a study or survey of tribal cultural resources before granting a license.”¹⁶⁴ On the record now before us, we still are unable to conclude that the NRC Staff has fulfilled this obligation to conduct such a study or survey because (1) the NRC Staff has yet to conduct any such study or survey — and thus the FSEIS deficiencies remain; and (2) there remains a material factual dispute as to whether the NRC Staff’s chosen methodology for obtaining information on the tribal cultural resources was reasonable.

As the Commission noted in its review of the Partial Initial Decision, the NRC Staff is “free to select whatever course of action it deems appropriate to address the deficiencies [in the FSEIS], including, but not limited to further government-to-government consultation.”¹⁶⁵ On April 14, 2017, the NRC Staff selected its methodology for assessing the FSEIS deficiencies when it invited the Oglala Sioux Tribe to participate in an open-site survey of the Dewey-Burdock project site.¹⁶⁶ The open-site survey detailed in the April 14, 2017 invitation to the

¹⁶⁰ *Id.* at 1.

¹⁶¹ *Id.* at 7.

¹⁶² *Id.*

¹⁶³ LBP-15-16, 81 NRC at 655.

¹⁶⁴ *Id.* at 653.

¹⁶⁵ CLI-16-20, 84 NRC at 251.

¹⁶⁶ NRC Staff April 14, 2017 Letter at 1.

Oglala Sioux Tribe is effectively identical to the open-site survey that the Oglala Sioux Tribe has consistently objected to and declined to participate in since the outset of this proceeding.¹⁶⁷ Although NEPA permits the NRC Staff to “select their own methodology as long as that methodology is reasonable,”¹⁶⁸ the record before us indicates there is a material factual dispute as to the reasonableness of the terms and details of the NRC Staff’s proposed open-site survey.¹⁶⁹

The open-site survey, as proposed by the NRC Staff, includes the following terms: (1) the Dewey-Burdock project site will be open to the Oglala Sioux Tribe for a period of 2 weeks to conduct the survey; (2) the Oglala Sioux Tribe may send up to three representatives to participate in the survey; (3) Powertech will pay for lodging and per diem for the three participating tribal representatives; (4) Powertech will pay a \$10,000 honorarium to the Oglala Sioux Tribe for its participation; (5) the tribal representatives will receive a safety briefing and be required to sign a release of liability; (6) daily transportation will be provided and an NRC Staff member will be present each day of the survey; and (7) any tribal representatives that encounter potentially sensitive properties or features may request that Powertech use a GPS unit to record the boundaries of the identified feature.¹⁷⁰ Additionally, the open-site survey proposal requires the Oglala Sioux to “provide a written report to the NRC staff within 30 days following the survey, or other time as agreed upon between the Oglala Sioux Tribe and the NRC staff.”¹⁷¹

¹⁶⁷ See NRC Staff’s Motion at 33-36.

¹⁶⁸ *Pilgrim*, CLI-10-11, 71 NRC at 316. The NRC Staff also relies on the Commission’s decision in *Pilgrim* for the proposition that because the Oglala Sioux Tribe will not cooperate with the open-site survey, the NRC Staff is entitled to “draw the line and move forward with decisionmaking.” NRC Staff’s Motion at 34. However, the *Pilgrim* decision only found the NRC Staff has some discretion in determining how much data to collect before issuing a decision; it does not state whether the NRC Staff has discretion not to collect essential data. Nothing in *Pilgrim* convinces us that the NRC Staff has discretion to forgo the collection of data necessary for a NEPA analysis without providing a sufficient justification for the information’s absence.

¹⁶⁹ The Oglala Sioux Tribe has not specifically framed its dispute with the NRC Staff’s chosen methodology as a factual matter. Nonetheless, the Oglala Sioux Tribe made clear in its response, as it did at the evidentiary hearing preceding the Partial Initial Decision, that it does not consider the open-site survey to be a reasonable approach for assessing tribal cultural resources. See Oglala Sioux Tribe’s Response at 35-37, 47; see also Tr. at 800-07 (Aug. 19, 2014). The Board has the authority to deny a motion for summary disposition if it finds there is a material fact in dispute, even if the opposing party fails to make any claim there is a material fact in dispute. See *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753-54 (1977) (discussing Supreme Court precedent and ruling that under this standard a dispositive motion that does not establish the absence of a genuine dispute must be denied, even if no opposing evidentiary matter is presented).

¹⁷⁰ NRC Staff April 14, 2017 Letter at 1-2.

¹⁷¹ *Id.* at 2.

The Oglala Sioux Tribe objects to reasonableness of this proposal on several grounds. First, the Oglala Sioux Tribe alleges that the open-site survey, as proposed, lacks scientific integrity. In its May 31, 2017 response to the NRC Staff's April 14, 2017 invitation to participate in the open-site survey, the Oglala Sioux Tribe noted that, since 2011, the Lakota Sioux Tribes have objected to the NRC Staff using any survey method "that lacks identification of acceptable protocols and methodologies for cultural site identification."¹⁷² The May 31, 2017 response also specifically cited to a February 20, 2013 letter sent from multiple tribes to the NRC Staff stating that they objected to the open-site survey because it lacked "a proper methodological framework to conduct the necessary cultural resources survey."¹⁷³ In its May 31, 2017 response, the Oglala Sioux Tribe asserted that it believed the scientific integrity of the NRC Staff's proposed survey could be addressed if the NRC Staff hired "a contractor(s) with the necessary experience, training, and cultural knowledge to carry out and facilitate the survey."¹⁷⁴

Second, the Oglala Sioux Tribe objects to several of the terms of the NRC Staff's proposed open-site survey. Specifically, the Oglala Sioux Tribe objects to (1) the number of tribal members invited to participate; (2) the length of time provided for the survey; and (3) which tribes have been invited to participate in the survey. With regard to the number of tribal members invited to participate, the Oglala Sioux Tribe noted in its May 31, 2017 response to the NRC Staff's April 14, 2017 letter that, "specific protocols and methodologies that should be incorporated into any competent cultural survey approach," include involving "tribal elders, spiritual advisors, [and] spiritual leaders."¹⁷⁵ This view is reflected in the objections the Oglala Sioux Tribe had to the terms of the open-site survey proposed by the NRC Staff preceding the Partial Initial Decision. During the evidentiary hearing, the Oglala Sioux Tribe stated that, in conducting a competent survey, it would want to involve its "elders, [its] traditional medicine people, spiritual leaders, [and] historians."¹⁷⁶ Furthermore,

¹⁷² Oglala Sioux Tribe May 31, 2017 Response at 2.

¹⁷³ *Id.*

¹⁷⁴ *Id.* at 4. Notably, although the Oglala Sioux Tribe has suggested that the NRC Staff hire a contractor to conduct and coordinate the survey, it has indicated that the NRC Staff could use a qualified staff member to coordinate the survey. *See* Oglala Sioux Tribe's Response at 37 (noting that "other agencies routinely rely on qualified agency social scientists as trained ethnographers to carry out the necessary surveys and analysis, with significant input, participation, and consultation from the relevant tribes, without any mandate that a certain tribe conduct the survey (citing *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, No. 2:14-cv-00226-APG-VCF, No. 2:14-cv-00228-APG-VCF, 2017 WL 3667700, at *54-55 (D. Nev. Aug. 23, 2017))).

¹⁷⁵ *Id.* at 4-5 (quoting Transcript of Proceedings, *Crow Butte Res., Inc.* (In Situ Leach Facility, Crawford, Neb.) at 2244-45 (ADAMS Accession No. ML15244B278) [hereinafter *Crow Butte Tr.*]).

¹⁷⁶ *Tr.* at 801 (Aug. 19, 2014).

the Oglala Sioux Tribe specifically rejected the NRC Staff's proposal to invite three individuals per tribe to participate in the survey, stating that "[e]ach family [in the Tribe] has different ideas of where [cultural resources] occur within the geography of the Black Hills. Each family has different areas that they hold sacred. . . . That's more than three per tribe."¹⁷⁷

Regarding the length of time for the survey, the Oglala Sioux Tribe asserts that a 2-week period for the survey is inadequate to properly assess the potential impacts to tribal cultural resources. In its May 31, 2017 response, the Oglala Sioux Tribe stated that the Dewey-Burdock project site must be open to its tribal members "for the period that is required to do a proper identification."¹⁷⁸ In support of this objection, the Oglala Sioux Tribe cited to the testimony of the NRC Staff's witness, Dr. Paul Nickens, in *Crow Butte*, wherein he estimated that it could potentially take 8 to 9 months to conduct a realistic tribal cultural resource survey involving all of the relevant tribes.¹⁷⁹

Lastly, the Oglala Sioux Tribe objected to the fact that the NRC Staff's April 14, 2017 proposed open-site survey only invited the Oglala Sioux Tribe to participate and did not coordinate the survey among the several Lakota Sioux Tribes. In its May 31, 2017 response to the NRC Staff's invitation, the Oglala Sioux Tribe emphasized that "there must be an effort to coordinate the several different Lakota Sioux Tribes before designing and conducting a cultural resource survey."¹⁸⁰ The Oglala Sioux Tribe expounded that while it understood that the NRC Staff "is under an obligation to conduct consultation meetings with the Oglala Sioux Tribe specifically . . . coordination of a cultural resources survey must include the other Lakota Sioux tribal governments . . . in order to be competent in its analysis of Lakota Sioux cultural resources."¹⁸¹ The Oglala Sioux Tribe's view on the proper scope of the survey is not new; during the evidentiary hearing, the Oglala Sioux Tribe stated that representation from one Sioux Tribe is insufficient for an adequate cultural resource survey, and would instead require participation from all of the Lakota Tribes.¹⁸² The Oglala Sioux Tribe raised this point again during the January 31, 2017 teleconference between the Tribe and the NRC Staff, wherein the Oglala Sioux Tribe expressed "its desire to include other interested Tribes in the development of the survey

¹⁷⁷ Tr. at 850 (Aug. 19, 2014).

¹⁷⁸ Oglala Sioux Tribe May 31, 2017 Response at 2.

¹⁷⁹ *Crow Butte* Tr. at 2276-78.

¹⁸⁰ Oglala Sioux Tribe May 31, 2017 Response at 3-4.

¹⁸¹ *Id.* at 4.

¹⁸² Tr. at 815-16 (Aug. 19, 2014).

approach and recommended that those Tribes participate in conducting the tribal survey.”¹⁸³

We conclude that these points — specifically, the Oglala Sioux Tribe’s challenge to (1) the scientific integrity and lack of a trained surveyor or ethnographer coordinating the survey; (2) the number of tribal members invited to participate in the survey; (3) the length of time provided for the survey; and (4) the tribes invited to participate in the survey — establish a significant material factual dispute as to the reasonableness of the NRC Staff’s proposed terms for an open-site survey to assess the identified deficiencies in this FSEIS.

That being said, it certainly is not too late for the NRC Staff to consider an alternative method or framework for assessing impacts to tribal cultural resources and, if appropriate, to move for summary disposition if it opts for an alternative to its currently proposed open-site survey. At times in the past 2 years, the NRC Staff has appeared to show some degree of flexibility on what method it would use to assess impacts to tribal cultural resources. In particular, during the January 31, 2017 teleconference between the Oglala Sioux Tribe and the NRC Staff, the NRC Staff indicated it would consider the Oglala Sioux Tribe’s perspective on “any other methodologies that they may wish to put forward for the provision of information on these cultural resources’ importance to the [Oglala Sioux] Tribe.”¹⁸⁴ Likewise, the Oglala Sioux Tribe previously expressed its willingness to consider participating in “any methodology that is appropriate” to assess tribal cultural resources.¹⁸⁵ Yet, despite both parties’ stated flexibility, the NRC Staff has never actually proposed any methods of addressing the FSEIS deficiencies other than an open-site survey. Indeed, the NRC Staff’s April 14, 2017 letter to the Oglala Sioux Tribe proposed yet again to employ the same

¹⁸³ January 31, 2017 Teleconference Summary at 1. The Oglala Sioux Tribe disputes the reasonableness of the proposed open-site survey because it does not coordinate the survey among the several Lakota Sioux Tribes, of which the Oglala Sioux is one. This may not have been an obvious point of contention when the NRC Staff originally proposed the open-site survey in 2013; however, this concern clearly contributes to the material factual dispute that is now evident. When the NRC Staff first chose the open-site survey as its method for assessing tribal cultural resources in 2013, it invited all of the potentially impacted tribes to participate. LBP-15-16, 81 NRC at 648. Thus, the reasonableness of the 2013 proposed open-site survey in terms of which tribes were invited to participate would not have been in dispute. Nonetheless, as our Partial Initial Decision noted, the FSEIS analysis based on that survey is deficient for failing to address Sioux Tribe cultural resources generally. *Id.* at 655. Thus, to resolve the identified FSEIS deficiencies, the reasonableness of the NRC Staff’s chosen methodology, in part, depends on its ability to assess all of the Lakota Sioux cultural resources missing in the FSEIS.

¹⁸⁴ Tr. at 54 (Nov. 7, 2016).

¹⁸⁵ Tr. at 44-45 (Nov. 7, 2016).

open-site survey that the Oglala Sioux Tribe has consistently rejected since the outset of this proceeding.¹⁸⁶

This stands in sharp contrast to the fact that on several occasions the NRC Staff has acknowledged there are various available methods for assessing tribal cultural resources. For instance, Appendix A of the FSEIS includes a letter sent to the Oglala Sioux Tribe from the NRC Staff in which the NRC Staff acknowledged:

[T]here are additional methods for identifying potential properties of traditional religious and cultural importance to tribes Alternatives include opening the site to interested tribal specialists over a period of several weeks with payments to be made to the individual tribes, or seeking ethnohistorical and ethnographic information from tribal specialists in interviews at tribal headquarters.¹⁸⁷

Furthermore, in the evidentiary hearing for the *Crow Butte* license renewal proceeding, the NRC Staff's own witness, Nathan Goodman,¹⁸⁸ noted that while the NRC Staff chose to evaluate tribal cultural resources through the open-site survey approach, there are other methods to identify tribal cultural resources.¹⁸⁹ This was echoed by the NRC Staff's other witness, Dr. Nickens,¹⁹⁰ who declared:

In my experience, probably the best [tribal cultural resource] survey approach is to involve Tribal Elders, wherein if it's one tribe or a group of tribes would supply elders of their choice and then there would be a facilitator, something along the lines of a cultural anthropologist who would accompany the elders and provide logistics support, documentation, recording support, report preparation if that were necessary.¹⁹¹

We again emphasize that under NEPA, the NRC Staff is not required to use "the best scientific methodology"¹⁹² to assess environmental impacts, but it *is* required to use a reasonable methodology. Thus, the NRC Staff may

¹⁸⁶ See NRC Staff April 14, 2017 Letter.

¹⁸⁷ Office of Federal and State Materials and Environmental Management Programs, Supplement to the Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities, Final Report, NUREG-1910, Vol. 2, App. A at A-107 (Supp. 4 Jan. 2014) (ADAMS Accession No. ML14024A478).

¹⁸⁸ Mr. Goodman was the Lead Environmental Project Manager for the *Crow Butte* license renewal. *Crow Butte*, LBP-16-7, 83 NRC at 362.

¹⁸⁹ *Crow Butte* Tr. at 2021-22.

¹⁹⁰ Dr. Nickens was a Senior Cultural Resources Specialist contracted by the NRC Staff to provide cultural resource expert support for Mr. Goodman. *Crow Butte*, LBP-16-7, 83 NRC at 362.

¹⁹¹ *Crow Butte* Tr. at 2023.

¹⁹² *Pilgrim*, CLI-10-11, 71 NRC at 315.

wish to consider available alternatives to determine if there is a reasonable method, other than its current open-site survey proposal, capable of yielding the information on the cultural resources of the Lakota Sioux Tribes. Exploration of such alternatives could result in an agreement among the parties on a survey methodology, the major bone of contention among them, so as to permit the resolution of Contention 1A.

We note, however, that if the NRC Staff chooses a methodology that does not include complete information about adverse effects on the Tribe's cultural resources, the NRC Staff would need to include an explanation that satisfies the requirements of 40 C.F.R. § 1502.22. As our Partial Initial Decision made clear, the FSEIS does not contain an analysis of Sioux tribal cultural resources even though this information is essential to determining "potentially necessary mitigation measures."¹⁹³ As noted *supra*, section 1502.22(b) states that, if information "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."¹⁹⁴ Given the Oglala Sioux Tribe's assertions and the NRC Staff's own evidentiary input cited above, if the NRC Staff chooses a methodology, such as the open-site survey that does not yield information on the identified deficiencies in the FSEIS, the NRC Staff arguably would need to provide an explanation that the alternatives for obtaining the missing information were cost-prohibitive.

If the NRC Staff were to determine that its viable options for obtaining the essential information are cost-prohibitive, 40 C.F.R. § 1502.22(b)(3) and (4) would still require that the NRC Staff set forth a "summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment,"¹⁹⁵ and "the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community."¹⁹⁶ In other words, in these circumstances, if the NRC Staff concludes there is no affordable alternative to the open-site survey for assessing the missing Native American cultural resources, it must at a minimum provide an explanation of this type to satisfy NEPA that is specific to the cultural resources of the Oglala Sioux Tribe and the other Native American tribes currently missing from the FSEIS.¹⁹⁷

Yet, if the NRC Staff ultimately cannot provide an explanation of the adequacy of its chosen survey method that evidences appropriate factual and legal support sufficient for a successful dispositive motion — a motion the NRC Staff

¹⁹³ LBP-15-16, 81 NRC at 655.

¹⁹⁴ 40 C.F.R. § 1502.22(b).

¹⁹⁵ *Id.* § 1502.22(b)(3).

¹⁹⁶ *Id.* § 1502.22(b)(4).

¹⁹⁷ *See* LBP-15-16, 81 NRC at 655.

will have an additional opportunity to provide per the schedule we establish below¹⁹⁸ — the Board has concluded that, as generally the case in the face of an unsuccessful summary disposition motion, the appropriate next step will be to hold an evidentiary hearing on the reasonableness of the open-site survey, the scheduling details of which we discuss, *infra*.

Accordingly, finding there remains a material factual dispute regarding Contention 1A, we deny the NRC Staff's summary disposition motion as to Contention 1A.

3. NRC Staff's and Oglala Sioux Tribe's Continuing Obligations and Further Procedures

a. Errors in Consultation Process to Date

In addition to our findings on the NRC Staff's Motion for Summary Disposition, we are mindful that there are cross-allegations in the pleadings that the NRC Staff and Oglala Sioux Tribe generally conducted themselves poorly in their communications. The Oglala Sioux Tribe alleges that the NRC Staff violated its obligations pursuant to 10 C.F.R. Part 2. We outline these communications issues below.

(i) FAILURE TO INCLUDE COUNSEL

Over the past 2 years, there were several periods during which very little communication occurred between the NRC Staff and the Oglala Sioux Tribe. The NRC Staff has alleged that it made multiple attempts to contact the Oglala Sioux Tribe without receiving any response during the periods from September 24, 2015, to November 30, 2015, and during August 2016 and December 2016. However, it appears that during that time the NRC Staff did not include the Oglala Sioux Tribe's counsel in these attempted communications, and instead contacted Oglala Sioux Tribal staff directly.

In an effort to show that the Oglala Sioux Tribe did not avail itself of its opportunity to participate in the consultation process, the NRC Staff has pointed out that during the period of September 2015 to November 2015 the NRC Staff "attempted unsuccessfully to reach the Tribe's THPO by telephone and email to coordinate dates for the government-to-government meetings."¹⁹⁹ Yet, having failed to receive any response from the THPO, the NRC Staff did not contact

¹⁹⁸ Because the Board has concluded that there is a dispute of material fact on the terms of the NRC Staff's currently proposed open-site survey, a successful dispositive motion for summary disposition would present, at a minimum, a difference that would arguably eliminate the dispute of fact.

¹⁹⁹ NRC Staff's Motion at 21.

the Oglala Sioux Tribe's counsel until 2 months of silence had passed.²⁰⁰ Once copied on the emails, counsel for the Oglala Sioux Tribe responded relatively quickly and requested, given that "this matter is part of an ongoing adjudicatory matter and in an effort to ensure efficient communication between the parties," that all communication should include the Oglala Sioux Tribe's counsel.²⁰¹

A similar situation again arose during August 2016 and December 2016. During the month of August 2016, the NRC Staff alleges it made several attempts to contact the Oglala Sioux Tribe via phone and email with no success. There is no evidence the NRC Staff attempted to contact the Oglala Sioux Tribe's counsel, even after the Tribe's counsel had requested to be included in such communications.²⁰² The NRC Staff also claims that, beginning on November 23, 2016, and continuing throughout December 2016, it sent emails and made several calls to the Oglala Sioux Tribe's THPO — though, again, without communicating through the Tribe's counsel, to arrange a teleconference, but received no response.²⁰³ After a month of virtual silence, the NRC Staff finally sent an email that included the Tribe's counsel.²⁰⁴

(ii) SLOW RESPONSE TIMES BY BOTH PARTIES

The record before us also suggests that neither the NRC Staff nor the Oglala Sioux Tribe could be considered highly responsive as the consultation process has unfolded over the past 2 years. No one party is singularly to blame; both the Oglala Sioux Tribe and the NRC Staff have been slow to meet to resolve Contentions 1A and 1B. Along with the aforementioned periods during which there was no contact for weeks or months at a time, the "regular" correspondence exchange between the parties proceeded slowly and actual meetings took an overly long time to schedule. The first communication from the NRC Staff to the Oglala Sioux Tribe was on June 23, 2015. The Oglala Sioux Tribe's response came a month later, on July 22, 2015. The NRC Staff then waited another month, until August 26, 2015, to respond to the Oglala Sioux Tribe, which in turn did not respond until September 24, 2015. The parties communicated back and forth for nearly 1 year before the May 2016 Pine Ridge meeting was finally held due to the lengthy delays between letters. Although the pace

²⁰⁰ Oglala Sioux Tribe's Response at 4-5.

²⁰¹ *Id.* at 5 (quoting Email from Jeffrey C. Parsons, Counsel for the Oglala Sioux Tribe, to Kellee L. Jamerson, Project Manager, Environmental Review Branch (Dec. 1, 2015) (ADAMS Accession No. ML17209A078)).

²⁰² Oglala Sioux Tribe's Response at 6-7; NRC Staff's Motion Statement of Facts at 8, ¶¶ 26, 27. Not only did the NRC Staff not include counsel for the Oglala Sioux Tribe on these communications, it apparently did not include its own counsel either.

²⁰³ NRC Staff's Motion Statement of Facts at 9, ¶ 30.

²⁰⁴ *Id.* at 9, ¶ 31.

of their communication quickened somewhat between December 2015 and the May 2016 Pine Ridge meeting, it was nearly 3 months after that government-to-government consultation before the NRC Staff reached out again to the Oglala Sioux Tribe.²⁰⁵ In all, between the Pine Ridge meeting and the Board-ordered teleconference, the pleadings reflect only two attempts at contact by the NRC Staff and none by the Oglala Sioux Tribe.²⁰⁶ The NRC Staff also repeatedly asserts that it had to send follow-up emails or make multiple calls to prompt a response from the Oglala Sioux Tribe.²⁰⁷

(iii) MANDATORY DISCLOSURE FAILURES

Pursuant to 10 C.F.R. § 2.336(d), all parties bear an ongoing obligation to disclose any documents relevant to admitted contentions, which — following our issuance of the Partial Initial Decision — included Contentions 1A and 1B.²⁰⁸ The Oglala Sioux Tribe has argued that the NRC Staff failed to comply with these requirements by withholding documents relating to communications between the NRC Staff and Powertech.²⁰⁹ The Oglala Sioux Tribe asserts that, “[u]nbeknownst” to it, the survey terms that were proposed in the April 14, 2017 letter were “sent in draft form to representatives of Powertech for the company’s input and edits” and that the email containing the draft “reference[d] unspecified prior discussions between NRC Staff and Powertech.”²¹⁰ The Oglala Sioux Tribe maintains the “NRC Staff has in its possession but has not provided in Monthly [Disclosure] Reports, emails, letters, invoices and other documents addressing Powertech’s refusal to pay for NRC Staff time spent complying with the Board and Commission Orders” as well as other documents pertaining to this adjudication.²¹¹

(iv) FAILURE TO MOVE FROM NEGOTIATING POSITION

Throughout the consultation process, both the NRC Staff and the Oglala Sioux Tribe have appeared unwilling and/or unable to step away from their original negotiating position and move toward compromise. The Oglala Sioux Tribe finds fault with the NRC Staff’s continued open-site survey proposal containing “the precise same parameters rejected by the Tribe for years” and for failing to “provide[] input on the methodology set out in the Makoche Wowapi

²⁰⁵ *Id.* at 6-7, ¶¶ 23, and 8, ¶ 25; Oglala Sioux Tribe’s Response at 6.

²⁰⁶ NRC Staff’s Motion Statement of Facts at 8, ¶¶ 25-26; Oglala Sioux Tribe’s Response at 6.

²⁰⁷ *E.g.*, NRC Staff’s Motion Statement of Facts at 8, ¶¶ 25-26, and 9, ¶¶ 29-31.

²⁰⁸ 10 C.F.R. § 2.336(d); *see also* LBP-15-16, 81 NRC at 708.

²⁰⁹ Oglala Sioux Tribe’s Response at 12-13, 19-20, 30.

²¹⁰ *Id.* at 12.

²¹¹ *Id.* at 19-20.

proposal.”²¹² It further complains that each invitation to participate in a survey or discuss a proposal for the survey methodology involved the NRC Staff “describing the same open-site approach limiting a survey to 2 weeks and excluding all other tribes,” which the Oglala Sioux Tribe “had repeatedly informed NRC Staff . . . was not based on any recognized discipline or methodology and was therefore unacceptable.”²¹³

The Oglala Sioux Tribe, however, appears to have taken a similarly inflexible approach to proposing other methods of conducting the survey. Although it claimed during the Board’s November 7, 2016 teleconference that it was willing to participate in “any methodology that is appropriate,” to assess tribal cultural resources, it also admits that it has continually used the Makoche Wowapi approach as its “starting point,” despite the fact that the NRC Staff has never been receptive to that approach.²¹⁴

The NRC Staff and the Oglala Sioux Tribe’s disinclination to consider other approaches for obtaining information about the Oglala Sioux Tribe’s cultural resources is most apparent in the correspondence between the parties directly preceding the NRC Staff’s recent filing for summary disposition. After the Board held the November 7, 2016 teleconference with the NRC Staff and the Oglala Sioux Tribe, wherein both agreed they would consider the other’s thoughts on an appropriate methodology to assess Oglala Sioux Tribe cultural resources,²¹⁵ the NRC Staff and the Oglala Sioux Tribe held their own teleconference on January 31, 2017. The summary of that teleconference states that the NRC Staff “presented its preliminary tribal survey approach,” i.e., the open-site survey.²¹⁶ The Oglala Sioux Tribe, in turn, “expressed its disappointment with this proposal and noted that it was the same proposal offered to Tribes and rejected by the Oglala Sioux Tribe during the NRC’s licensing review of the Dewey-Burdock ISR Project.”²¹⁷ But rather than proposing alternatives other than its originally proposed methodology, the “Oglala Sioux Tribe expressed its preference to develop a survey methodology similar in nature to the Makoche Wowapi survey proposal that was submitted to the NRC in September 2012.”²¹⁸

Yet, despite both parties’ apparent continued inflexibility, the NRC Staff also “expressed interest in receiving information about the survey methodology/approach,” and the Oglala Sioux Tribe “committed to provide the NRC

²¹² *E.g.*, Oglala Sioux Tribe’s Response at 11.

²¹³ *Id.* at 12.

²¹⁴ Tr. at 44-45 (Nov. 7, 2016).

²¹⁵ *See* Tr. at 44-45, 54 (Nov. 7, 2016).

²¹⁶ January 31, 2017 Teleconference Summary at 1.

²¹⁷ *Id.*

²¹⁸ *Id.*

staff with information about a tribal survey approach.”²¹⁹ However, further negotiations on an acceptable methodology by both parties never transpired. Thus, despite both parties’ expressed interest in finding a mutually acceptable method for conducting the tribal cultural resource survey, on April 14, 2017, the NRC Staff sent the Oglala Sioux Tribe its final proposal that once again stated the NRC Staff would provide an opportunity to participate in the same open-site survey approach offered to the tribes in the original licensing review.²²⁰ In its May 31, 2017 response, the Oglala Sioux Tribe showed greater flexibility by identifying specific elements the Tribe believed were necessary for an adequate survey, and did so without referencing the Makoche Wowapi approach.²²¹ At that point, however, the NRC Staff rejected any further negotiation regarding a cultural resources survey and instead filed its motion for summary disposition.

b. Solutions Moving Forward

Having pointed out the pitfalls of the past 2 years, the Board provides the following observations on how the parties can improve their communication with, and better meet their obligations to one another. This guidance would apply to both the resolution of Contention 1A and the parties’ prospective interactions pursuant to the existing Programmatic Agreement that governs any Powertech activities onsite that may impact existing cultural resources.²²²

(i) STRENGTHENING COMMUNICATION

The Board anticipates that going forward the parties will be more timely and responsive in their communications. Effective and productive discourse demands as much. For successful negotiation and consultation and to create a strong working relationship, regular dialogue must develop through frequent exchanges. Both the NRC Staff and the Oglala Sioux Tribe and their counsel need to improve their response times as consultation continues under the Programmatic Agreement.²²³ It should not take a year to schedule a meeting, and the Board should not have to order a teleconference to bring the parties together.

²¹⁹ *Id.* at 2.

²²⁰ See NRC Staff April 14, 2017 Letter.

²²¹ See Oglala Sioux Tribe May 31, 2017 Response at 3-8.

²²² Programmatic Agreement Among U.S. Nuclear Regulatory Commission, 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 at 5-6, § 3, and 8-10, § 6 (Mar. 19, 2014) (ADAMS Accession No. ML14066A347) [hereinafter Programmatic Agreement].

²²³ See *id.* at 5-6, § 3.

Likewise, failing to copy counsel created at least 4 months' worth of communication delay over the past 2 years. Although it appears that many of the missteps in communication during the past 2 years were between the Oglala Sioux Tribe's staff and the NRC Staff — and not their counsel — the parties should strive to include each other's counsel in their communications. This is particularly true when a staff member (from either the NRC Staff or the Tribe) has difficulty reaching the opposing party. Given that the parties' counsel have an ethical obligation in accord with the ABA Model Rules of Professional Conduct to make reasonable efforts to expedite litigation in a manner consistent with their party's interests,²²⁴ including counsel in the communication process could drastically reduce the time between the parties' responses. As long as this case remains active before the Board, all communication concerning scheduling or consultation efforts should include counsel. Further, given the prior problems, counsel for the Oglala Sioux Tribe and counsel for the NRC Staff should come to an agreement regarding how future communication between the Tribal staff and NRC Staff should be conducted, and to what extent counsel needs to be involved in those communications. At minimum, when counsel for any party specifically requests that it be included as a recipient to a communication with its client, that request should be honored.

While we have held that, even with these communications missteps, the NRC Staff's consultation-related actions were minimally sufficient to meet its NHPA burden, we once again reiterate that the "NRC Staff has been much better served when . . . it has worked with Indian tribes to comply with the substance of NEPA and the NHPA."²²⁵ This involves the NRC Staff being prompt in its responses and including the Oglala Sioux Tribe's counsel, an approach that all other parties would be well served to abide by as well.

(ii) MANDATORY DISCLOSURES

Section 2.336 of 10 C.F.R. provides for "general discovery" in Subpart L proceedings.²²⁶ In pertinent part, the regulation requires that "all parties . . . shall . . . disclose and provide . . . all documents and data compilations in the possession, custody, or control of the party that are relevant to the contentions."²²⁷ The regulation establishes that each party's duty to submit these mandatory disclosures is ongoing, and that each party must make these mandatory disclosures once a

²²⁴ Model Rules of Prof'l Conduct r. 3.2 (Am. Bar. Ass'n 1983).

²²⁵ *Crow Butte*, LBP-16-7, 83 NRC at 371.

²²⁶ Although 10 C.F.R. § 2.336 is contained in Subpart C to the agency's Part 2 rules of procedure, Subpart C is generally applicable to all adjudications pursuant to the Atomic Energy Act, including Subpart L proceedings. 10 C.F.R. §§ 2.300, 2.1200.

²²⁷ *Id.* § 2.336(a)(2)(i).

month and without the filing of a discovery request by other parties.²²⁸ Furthermore, the Commission has made clear that the scope of mandatory disclosures is “wide-reaching.”²²⁹ Because the mandatory disclosures are the only form of discovery in Subpart L proceedings, they, “like all discovery exchanges, cover a vast array of information and documents that are not evidence and need not meet the requirements of admissible evidence.”²³⁰

Given the broad scope of the mandatory disclosure obligation, absent some claim of privilege, all parties bore the continuing obligation following the issuance of the Partial Initial Decision to disclose any documents in their possession that were potentially relevant to (1) consultation between the NRC Staff and the Oglala Sioux Tribe, and (2) the NRC Staff’s efforts in addressing the identified deficiencies in the FSEIS. This includes the disclosure of any correspondence between the NRC Staff and Powertech concerning the methodology for assessing impacts to Native American cultural resources.²³¹ Although our ruling on its dispositive motion for summary disposition means that the NRC Staff no longer has a continuing obligation to disclose documents relevant to Contention 1B,²³² documents relevant to the NRC Staff’s consideration of methodologies for addressing the FSEIS deficiencies — such as correspondence between itself and Powertech on the preferred methodology for assessing tribal cultural resources — are relevant to Contention 1A, and thus the NRC Staff’s and Powertech’s obligation to disclose these documents is ongoing.

Furthermore, in its September 28, 2017 update to the Board, the NRC Staff seemed to recognize it erred with respect to this mandatory obligation.²³³ That update identified several items of correspondence between the NRC Staff and Powertech that occurred between July 2016 and May 2017, which were “inadvertently not included in the Staff’s previous monthly disclosures.”²³⁴ All of the parties need to re-review their records and ensure that they have disclosed any and all existing documents that have not been previously disclosed that are potentially relevant to Contention 1A. Going forward, with Contention 1A still pending, the parties must continue to disclose any documents relevant to the

²²⁸ *Id.* § 2.336(a), (d).

²²⁹ *Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 572 (2009).

²³⁰ *Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-30, 70 NRC 1039, 1046 (2009) (citing 10 C.F.R. § 2.705(b)(1)).

²³¹ Although the Oglala Sioux Tribe specifically allege that the NRC Staff violated its duty to disclose this correspondence, Powertech is equally obliged to disclose such correspondence to the other parties.

²³² *See* 10 C.F.R. § 2.336(d).

²³³ NRC Staff, Supplementary Hearing File and Mandatory Disclosures (Sept. 28, 2017).

²³⁴ *Id.* at 1-2.

NRC Staff's efforts to resolve the deficiencies identified in this decision, in general, and any documents pertaining to the selection of a preferred methodology for Native American cultural resources, in particular.²³⁵

(iii) NEGOTIATING POSITION

Both parties appeared to be reluctant to be the first to make a concession and offer a proposal that varied in any substantial degree from its original bargaining position. The NRC Staff has only offered an open-site proposal that the Oglala Sioux Tribe deems wholly objectionable. The Oglala Sioux Tribe has not put forward a proposal which varies from the Makoche Wowapi proposal that the NRC Staff has rejected. This has produced a hopeless impasse.

Nonetheless, we recognize that ultimately it is the obligation of the NRC Staff — not the Oglala Sioux Tribe — to select a methodology that will satisfy NEPA. As such, while the NRC Staff may continue to work with the Oglala Sioux Tribe in identifying a reasonable, affordable method to obtain information on the Oglala Sioux Tribe's cultural resources, the NRC Staff is not obligated to adopt any specific methodology. Moving forward, the NRC Staff's primary responsibility is to carefully consider what options may result in actually obtaining pertinent information on the Sioux Tribes' cultural resources, with or without the Oglala Sioux Tribe's input, and make a choice about which option to implement. If the NRC Staff chooses to continue to consult with the Oglala Sioux Tribe in identifying an acceptable approach to obtaining information on tribal cultural resources, both parties should come forward with constructive suggestions and comments, rather than simply dismissing the other's proposed approach. Even if the NRC Staff selects a methodology without further input from the Oglala Sioux Tribe, we do note that the Oglala Sioux Tribe will have additional meaningful opportunities to consult during future phases of the project pursuant to the Programmatic Agreement.²³⁶

c. Scheduling

While, as we have previously recognized, it is inappropriate for the Board to direct the NRC Staff in the completion of its NEPA review activities, it is also clear that the Board is given the responsibility to manage the schedule for this adjudicatory proceeding.²³⁷ In this instance, the parties have had some 2 years to address the deficiencies in the NRC Staff's NEPA cultural resources analysis for the Dewey-Burdock project site as identified in Contention 1A and

²³⁵ See 10 C.F.R. § 2.336(b)(1)-(5).

²³⁶ Programmatic Agreement at 5-6, § 3, and 8-10, § 6.

²³⁷ See 10 C.F.R. §§ 2.319(k), 2.332.

the Board's Partial Initial Decision. Under the circumstances, given the rulings and guidance now provided by the Board in this decision, it seems reasonable to the Board that over the next 6 months the parties have the following options: (1) in the near term, they may submit a joint motion to request the appointment of a Settlement Judge to conduct settlement negotiations to assist in the resolution of this dispute pursuant to 10 C.F.R. § 2.338, and pursue that avenue in an attempt to reach a settlement and dismissal of the contention; (2) they may continue to confer with one another in an attempt to find a method of addressing the deficiencies in the FSEIS that is mutually agreeable to both parties, and, if successful, file a joint motion for dismissal of the contention; (3) the NRC Staff may, without consultation with the Oglala Sioux Tribe, consider and select a method²³⁸ for addressing the FSEIS deficiencies, and file a new motion for summary disposition; or (4) if options one through three do not result in a resolution, prepare for and participate in an evidentiary hearing to resolve Contention 1A on the reasonableness of the terms of the NRC Staff's proposed open-site survey.

With regard to all of these prospects save for the first, we set out the following schedule for the parties' motion for summary disposition filings and the evidentiary hearing, and which is summarized in Appendix A.

(i) SUMMARY DISPOSITION

If any party wishes to submit any motion for summary disposition to resolve Contention 1A, that filing is due no later than April 20, 2018. In accordance with 10 C.F.R. § 2.1205(b), any response supporting or opposing the motion must be filed on or before May 10, 2018, and any reply to a response in support of the motion is due on or before Monday, May 21, 2018.

Consistent with this schedule, the Board anticipates issuing a decision on the motions on or about June 1, 2018.

(ii) EVIDENTIARY HEARING

Assuming we do not resolve Contention 1A on any party's motion for summary disposition or do not receive any summary disposition motion by April 20, 2018, we will hold an evidentiary hearing to commence on June 26, 2018, and to conclude on June 28, 2018. Parties are to file position statements and prefiled direct testimony no later than June 11, 2018, and rebuttals to the position statements and prefiled direct testimony are to be filed no later than June 18, 2018.

²³⁸This may be a method entirely different from the currently proposed open-site survey or a version of the open-site survey that the NRC Staff can argue — with adequate legal and factual support — is not subject to the dispute of material fact on the method's reasonableness that has been identified in this decision.

Any proposed cross-examination questions for the evidentiary hearing shall be submitted to the Board no later than June 22, 2018. Following the conclusion of the evidentiary hearing, parties are to submit their proposed findings of fact and conclusions of law no later than July 30, 2018, and replies to the findings of fact and conclusions of law shall be filed no later than August 29, 2018.

Consistent with this schedule, the Board anticipates issuing an initial decision finally resolving Contention 1A on or about October 12, 2018.

(iii) CONTINUING BOARD OVERSIGHT OF THIS PROCEEDING

Finally, to monitor the parties' progress relative to the schedule above, in addition to continuing to receive monthly reports, we anticipate holding more frequent teleconferences with the parties about their progress in their efforts to resolve Contention 1A. To this end, the parties are advised that the Board anticipates holding a telephone prehearing conference with the parties during the week of November 13, 2017, and will be contacting the parties in the near term regarding the details.

It is so ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

William J. Froehlich, Chairman
ADMINISTRATIVE JUDGE

Dr. Mark O. Barnett
ADMINISTRATIVE JUDGE

G. Paul Bollwerk, III
ADMINISTRATIVE JUDGE

Rockville, Maryland
October 19, 2017

Additional Views of Bollwerk, A.J.

While I agree fully with the Licensing Board's resolution of the NRC Staff's dispositive motions as to both Contentions 1A and 1B, in light of the history of this case since the Licensing Board's April 15, 2015 partial initial decision (PID), I write separately regarding the future course of this proceeding.

Delay in an adjudication generally favors one of the litigants. In this instance, given circumstances such as the diminished price of uranium; declining agency budgets; the prospect that something pertinent might come from a Commission decision on not dissimilar issues in the pending *Crow Butte* license renewal case appeal, *see Crow Butte Resources, Inc. (In Situ Leach Facility, Crawford, Nebraska)*, LBP-16-7, 83 NRC 340, 366-83, 394-404 (2016), *appeals pending*; and the pending federal court litigation on whether the effectiveness of the Powertech license should be rescinded in light of the Board's April 2015 PID, *see Oglala Sioux Tribe's Response in Opposition to NRC Staff Motion for Summary Disposition of Contentions 1A and 1B* (Sept. 1, 2017) at 15, the 2-year-plus interval since the Board's April 2015 PID may have had value for all of the litigants in this proceeding.

Nonetheless, as the final portion of the Board's order indicates, this litigation cannot continue at its previous pace. All of the litigants are entitled to, and must participate in, an effort to reach a fair and efficient conclusion to this proceeding. Thus, with the schedule incorporated into the Board's decision denying the NRC Staff's dispositive motion regarding Contention 1A, the question of what constitutes an appropriate methodology for identifying Sioux tribal cultural resources on the Dewey-Burdock project site is now on a course to be resolved before the Board in 2018.

In setting this schedule, the Board initially has provided the parties with 6 months to reach an accommodation regarding how an NRC Staff-administered cultural resources study/survey for the Dewey-Burdock project site should be fashioned. As the Board's summary disposition ruling indicates, this may involve further efforts by the NRC Staff to consider Oglala Sioux Tribe proposed options to create an appropriate study/survey, with suitable assistance from Powertech and pertinent tribal participants.

And while the NRC Staff ultimately is responsible for shaping the cultural resources survey/study, important components in such an effort may well include (1) in accord with the testimony of the NRC Staff's witnesses Goodman and Nickens in the *Crow Butte* license renewal case, *see supra* p. 199, obtaining pertinent ethnographic data, presumably from tribal elders or other knowledgeable sources, regarding the identification of culturally sensitive spaces that might exist on the Dewey-Burdock project site; and (2) identifying and employing methods that allow such ethnographic material to be utilized in an efficient, cost-effective manner to pinpoint any particular areas on the facility site that may have cultural

resource sensitivity. Addressing these items in a mutually satisfactory manner undoubtedly will require significant party cooperation and accommodation, as well as a willingness to provide the essential resources for execution, whether financial, informational, or otherwise. Thus, for example, if tribal elders are to be the ethnographic information source, a mutually agreeable arrangement seemingly would need to be generated to make the pertinent individuals available timely and to provide logistical support so that the information they afford can be effectively employed. By the same token, to translate such ethnographic information into actual geographic locations on the expansive Dewey-Burdock project site may merit consideration about whether, for instance, the use of initial surveys incorporating light detection and ranging (LiDAR) and/or drone technology would aid in making traditional “boots on the ground” pedestrian surveys more efficient. Hopefully, these possibilities and others will be considered as the NRC Staff seeks to craft an archaeologically and anthropologically sound cultural resources survey/study for the Dewey-Burdock project site.

No doubt, the parties will be considering (as they should be) the costs involved in whatever options are scrutinized. But with the litigation schedule now established by the Board, such calculations also should encompass the expenses involved for each in preparing for, participating in, and submitting post-hearing filings associated with an evidentiary hearing on Contention 1A, expenditures that may come into play in relatively short order if they are unable to reach a resolution of this contention among themselves.

APPENDIX A
SCHEDULE — Powertech USA, Inc. (Dewey-Burdock
In Situ Uranium Recovery Facility) Proceeding

Event:	Date:
Licensing Board Order Denying Staff Dispositive Motion on Contention 1A	Oct. 19, 2017
Dispositive Motion(s) Schedule	
Additional Dispositive Motion(s) on Contention 1A Due	Apr. 20, 2018
Responses Supporting or Opposing Summary Disposition Motion(s) Due	May 10, 2018
Reply to Responses Supporting Summary Disposition Motion(s) Due	May 21, 2018
Licensing Board Ruling on Summary Disposition Motion(s)	June 1, 2018
Evidentiary Hearing Schedule	
Positions Statements/Prefiled Direct Testimony Due	June 11, 2018
Rebuttal Statements/Prefiled Rebuttal Testimony Due	June 18, 2018
Proposed Cross-Examination Questions Due	June 22, 2018
Evidentiary Hearing	June 26-28, 2018
Proposed Findings of Fact/Conclusions of Law Due	July 30, 2018
Reply Findings of Fact/Conclusions of Law Due	Aug. 29, 2018
Licensing Board Initial Decision	Oct. 12, 2018

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Stephen G. Burns

In the Matter of

**Docket Nos. 52-040-COL
52-041-COL**

**FLORIDA POWER & LIGHT
COMPANY
(Turkey Point Nuclear Generating
Units 6 and 7)**

December 11, 2017

STANDARD OF REVIEW

Unless an appeal demonstrates an error of law or abuse of discretion, the Commission generally defers to the Board on contention admissibility rulings.

APPEALS

Recitation of an appellant's prior positions in a proceeding or statement of general disagreement with a decision's result is not sufficient; the appellant must point out the errors in the Board's decision.

FINANCIAL QUALIFICATIONS

With respect to financial qualification, our rules require a combined license applicant that is an electric utility to submit information demonstrating that it either possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs.

CONTENTIONS, ADMISSIBILITY

Mere speculation that Westinghouse's bankruptcy might impair FPL's ability to secure external funding does not call into question the reasonableness of FPL's financing plan and does not raise a genuine dispute with the application.

CONTENTIONS, ADMISSIBILITY

If the original contention lacked adequate support, "a petitioner cannot remediate the deficiency by introducing in the reply documents that were available to it during the time frame for initially filing contentions."

MEMORANDUM AND ORDER

The City of South Miami appeals the Atomic Safety and Licensing Board's ruling on its petition to intervene challenging the combined construction and operating license application of Florida Power & Light Company (FPL) for two AP1000 nuclear reactors, Turkey Point Nuclear Generating Units 6 and 7.¹ For the reasons discussed below, we affirm the Board's decision.

I. BACKGROUND

FPL submitted the combined license application for Turkey Point Units 6 and 7 in 2009. The application included a statement of financial qualifications, as required by 10 C.F.R. § 50.33(f)(1).² About a year later, the NRC staff published a notice of hearing and opportunity to petition for leave to intervene.³ In response, several hearing requests were filed. The Board granted the joint hear-

¹ Notice of Appeal (Aug. 25, 2017); An Appeal from an Order of the Atomic Safety Licensing Board: Initial Brief of Appellant, City of South Miami (Aug. 25, 2017) (Appeal); *see* LBP-17-6, 86 NRC 37 (2017).

² *See* Florida Power & Light Company, "Turkey Point Units 6 & 7 COL Application, Part 1 — General and Financial Information," rev. 0 (June 30, 2009), at 4-6 (ADAMS accession no. ML091870846). FPL submitted the most recent version of the application's financial information in August 2016. Florida Power & Light Company, "Turkey Point Units 6 & 7 COL Application, Part 1 — General and Financial Information," rev. 8 (Aug. 26, 2016), at 4-5 (ML16250A266) (Application).

³ Florida Power & Light Company, Combined License Application for the Turkey Point Units 6 & 7, Notice of Hearing, Opportunity to Petition for Leave to Intervene and Associated Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation, 75 Fed. Reg. 34,777 (June 18, 2010).

ing request of Mark Oncavage, Dan Kipnis, Southern Alliance for Clean Energy, and National Parks Conservation Association and admitted Contention 2.1.⁴ The Board ultimately held an evidentiary hearing on Contention 2.1 in May 2017.⁵ Thereafter, the Board found that the Staff demonstrated that the environmental impacts from FPL’s proposed deep injection wells will be “small” because “the wastewater is unlikely to migrate to the Upper Floridan Aquifer” and “even if it did, the concentration of [potential contaminants] would be below the applicable [U.S.] Environmental Protection Agency (EPA) primary” standards for drinking water.⁶

Shortly before the evidentiary hearing, in April 2017, three Florida municipalities — the Cities of Miami and South Miami and the Village of Pinecrest — filed a petition to intervene.⁷ The three municipalities claimed that, in light of Westinghouse Electric Company’s March 2017 bankruptcy filing, FPL’s combined license application no longer demonstrates that FPL is financially qualified to cover the construction and fuel cycle costs for Units 6 and 7, as required by 10 C.F.R. § 50.33(f)(1).⁸ Further, the municipalities claimed that they established good cause for submitting a new contention after the deadline for filing initial intervention petitions, based on Westinghouse’s bankruptcy filing a month prior.⁹ Both FPL and the Staff opposed the petition for failure to articulate an admissible contention; FPL also objected on the ground that the municipalities did not meet the good cause standard for late filing.¹⁰ The three municipalities filed a

⁴ LBP-11-6, 73 NRC 149, 171-72, 188-94 (2011). The Village of Pinecrest and the City of Miami participated in the proceeding as interested local governments. *Id.* at 251; LBP-15-19, 81 NRC 815, 828 (2015). Contention 2.1 (as amended and reformulated) challenged the Final Environmental Impact Statement’s conclusion that environmental impacts from FPL’s proposed deep injection wells will be “small” because the concentrations of four chemicals in the wastewater injections may adversely impact the groundwater should they migrate from the Boulder Zone to the Upper Floridan Aquifer. LBP-17-5, 86 NRC 1, 5 (2017).

⁵ LBP-17-5, 86 NRC at 14.

⁶ *Id.* at 5. This decision was not appealed. Several other intervention petitions were resolved without hearings over the course of the contested proceeding. *See* LBP-17-2, 85 NRC 14 (2017); LBP-15-19, 81 NRC 815, *review denied*, CLI-16-1, 83 NRC 1 (2016); LBP-12-7, 75 NRC 503 (2012).

⁷ Petition for Leave to Intervene in a Hearing on Florida Power & Light Company’s Combined Construction and Operating License Application for Turkey Point Units 6 & 7 and File a New Contention (Apr. 18, 2017) (Petition).

⁸ *Id.* at 7-12.

⁹ *Id.* at 12. On March 29, 2017, Westinghouse sought Chapter 11 bankruptcy protection in the United States Bankruptcy Court for the Southern District of New York. LBP-17-6, 86 NRC at 44 (citing Petition (attaching [Westinghouse] Voluntary Petition for Non-Individual Filing for Bankruptcy (Mar. 29, 2017))).

¹⁰ Florida Power & Light Company’s Answer Opposing City of Miami, Village of Pinecrest, and
(Continued)

reply to FPL's and the Staff's answers, which included the affidavit of Mark W. Crisp, P.E.¹¹ The Staff filed a response to the reply, and FPL moved to strike portions of the reply, including the Crisp Affidavit.¹² Following oral argument, the Board denied the municipalities' request for hearing. The Board struck the Crisp Affidavit and found that, although the municipalities had demonstrated standing to intervene, their proposed contention, while timely submitted, was not admissible.¹³ With all matters before it resolved, the Board terminated the contested proceeding.¹⁴

South Miami now appeals the Board's decision.¹⁵ FPL and the Staff oppose the appeal.¹⁶

II. DISCUSSION

A. Standard of Review

Ordinarily, an appeal of a decision wholly denying a request for hearing

City of South Miami's Petition to Intervene and Request for Hearing Regarding the Combined Construction and Operating License Application for Turkey Point Units 6 & 7 (May 15, 2017), at 13-17 (FPL Answer to Petition); NRC Staff Answer to Petition for Leave to Intervene and New Contention (May 15, 2017) (Staff Answer to Petition).

¹¹ Petitioners' Reply to NRC Staff and FPL's Answers to Petition for Leave to Intervene in a Hearing on Florida Power & Light Company's Combined Construction and Operating License Application for Turkey Point Units 6 & 7 and File a New Contention (May 22, 2017) (Reply) (attaching Affidavit of Mark W. Crisp, P.E. (May 22, 2017) (Crisp Affidavit)).

¹² NRC Staff's Unopposed Motion for Leave to File a Response to New Arguments Raised in Petitioners' Reply (June 1, 2017). The Staff argued in its response that the municipalities "made new arguments and requests beyond the scope of the Petition, the NRC Answer, and the FPL Answer" and specifically objected to certain requests for relief articulated by the municipalities that are not at issue here. NRC Staff's Response to New Arguments Raised in Petitioners' Reply (June 1, 2017), at 2. The Board granted the motion. Order (Granting NRC Staff's Unopposed Motion) (June 6, 2017) (unpublished); Florida Power & Light Company's Motion to Strike Portions of Petitioners' Reply and Affidavit of Mark W. Crisp (June 1, 2017).

¹³ LBP-17-6, 86 NRC at 45-50.

¹⁴ *Id.* at 54.

¹⁵ The City of Miami and Village of Pinecrest did not join South Miami's appeal.

South Miami inadvertently filed two copies of its Notice of Appeal, instead of one copy each of its notice of appeal and initial brief, on August 25, 2017, the day its appeal was due. *See* Motion for an Extension of Time to File Brief (Sept. 20, 2017). On the next business day (Monday, August 28), the Office of the Secretary advised South Miami of the error, and South Miami filed its initial brief the same day. We grant South Miami's (belated) motion and regard the appeal as timely filed.

¹⁶ Florida Power & Light Company's Brief in Opposition to the City of South Miami's Appeal of LBP-17-06 (Sept. 19, 2017), at 1 (FPL Brief); NRC Staff Answer to the City of South Miami's Appeal of LBP-17-06 (Sept. 19, 2017), at 2 (Staff Brief).

lies as a matter of right under 10 C.F.R. § 2.311(c).¹⁷ But as the intervention petition here came late in the proceeding and was the last matter decided by the Board, South Miami's appeal arguably could be treated either as an appeal under section 2.311 or a petition for review under section 2.341.¹⁸ Review under section 2.341 is discretionary; we will grant petitions for review of decisions of a presiding officer, "giving due weight to the existence of a substantial question" for review.¹⁹ Given that a denial of an intervention petition is usually subject to an appeal as of right, considerations of fairness lead us to apply section 2.311 in this instance.

Unless an appeal demonstrates an error of law or abuse of discretion, we generally defer to the Board on contention admissibility rulings.²⁰ Recitation of an appellant's prior positions in a proceeding or statement of general disagreement with a decision's result is not sufficient; the appellant must point out the errors in the Board's decision.²¹ As discussed below, we find that South Miami has failed to identify any error of law or abuse of discretion by the Board. We therefore affirm the Board's decision.

B. South Miami's Financial Qualifications Contention

To be admissible, a contention must satisfy the six-factor standard in section 2.309(f)(1). A petitioner 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;

¹⁷ 10 C.F.R. § 2.311(c). That provision provides for an interlocutory appeal as of right on the question whether the petition should have been granted.

¹⁸ The Board instructed the litigants that they may file appeals under section 2.311(b), FPL applies the criteria of section 2.341 in its response, and the Staff applies section 2.311 but notes that it "considered whether [section] 2.341 could also arguably apply." LBP-17-6, 86 NRC at 54; FPL Brief at 7-8; Staff Brief at 6 n.35.

¹⁹ 10 C.F.R. § 2.341(b)(4)(i)-(v).

²⁰ See, e.g., *Southern Nuclear Operating Co., Inc.* (Vogtle Electric Generating Plant, Units 3 and 4), CLI-17-2, 85 NRC 33, 40 (2017); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-16-9, 83 NRC 472, 482 (2016); *Crow Butte Resources, Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 13-14 (2014). South Miami's standing is not at issue.

²¹ See, e.g., *Shieldalloy Metallurgical Corp.* (License Amendment Request for Decommissioning of the Newfield, New Jersey Facility), CLI-07-20, 65 NRC 499, 503-04 (2007); *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), CLI-93-10, 37 NRC 192, 198 (1993) (citing *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), CLI-92-3, 35 NRC 63, 67 (1992)).

- (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 that support the petitioner's position on the issue and on which the petitioner intends to rely at the 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.²²

Contentions cannot be based on speculation but must have "some reasonably specific factual or legal basis."²³ Our rules thus require a petitioner to state the asserted facts or expert opinions that support the petitioner's position and on which the petitioner intends to rely in litigating the contention at hearing.²⁴

With respect to financial qualification, our rules require a combined license applicant that is an electric utility, such as FPL, to submit information demonstrating that it either possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs.²⁵ An applicant that is an established organization, such as FPL, should provide (1) an estimate of construction costs, (2) the source of construction funds, and (3) the applicant's financial statements.²⁶

The proposed contention claimed that "[t]he FSER [Final Safety Evaluation Report] is deficient in concluding that FPL has demonstrated that it possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs and FPL has failed to

²² 10 C.F.R. § 2.309(f)(1)(i)-(vi).

²³ See *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 213 (2003) (citation omitted).

²⁴ 10 C.F.R. § 2.309(f)(1)(v).

²⁵ *Id.* § 50.33(f). A combined license applicant that does not qualify as an electric utility must also demonstrate that it is financially qualified to operate the units. *Id.*

²⁶ *Id.* pt. 50, app. C, I.A.; see *id.* pt. 50, app. C ("[E]stablished organizations . . . will normally have a history of operating experience and be able to submit financial statements reflecting the financial results of past operations."); *id.*, pt. 50, app. C, I.A.2 ("The application should include a brief statement of the applicant's general financial plan for financing the cost of the facility, identifying the source or sources upon which the applicant relies for the necessary construction funds.").

indicate source(s) of funds to cover these costs.”²⁷ In considering the admissibility of the contention, the Board determined that the municipalities relied on two principal arguments. First, the municipalities claimed that Westinghouse’s bankruptcy threatens FPL’s ability to recover construction costs under state processes, thereby challenging whether FPL is financially qualified to cover construction costs.²⁸ Second, the municipalities argued that the bankruptcy makes it difficult for FPL to secure external funding for construction costs, thereby also calling into question FPL’s financial qualifications.²⁹ The Board found the proposed contention inadmissible “because, contrary to 10 C.F.R. § 2.309(f)(1)(vi), neither of the arguments underlying the contention raises a genuine dispute on a material issue of law or fact.”³⁰

As to the first issue, the Board reasoned that whether FPL will recover construction costs from Florida does not raise a genuine dispute on a material issue because FPL does not rely upon cost recovery under Florida law to demonstrate that it is financially qualified under the regulations.³¹ The Board explained that the municipalities’ argument is based on an incorrect interpretation of the combined license application.³² The Board observed that the application identifies the sources of long-term construction funding for Units 6 and 7 as a mixture of internally generated cash and external funding, consistent with the standards in 10 C.F.R. Part 50, Appendix C.³³ This discussion, the Board noted, “does not identify cost recovery from Florida as a source of construction cost funding for purposes of demonstrating financial qualification.”³⁴ The combined license application does state that FPL intends to recover construction costs in accordance with state law, but the Board differentiated cost *recovery* from cost *funding*.³⁵

²⁷ Petition at 7. Notwithstanding the reference to the FSER, the Board treated the contention as a challenge to FPL’s showing of financial qualification in its combined license application because “it is clear that [the municipalities] are challenging whether FPL is entitled to a [combined license], not whether the NRC Staff’s safety review of the [combined license] application was adequate.” LBP-17-6, 86 NRC at 49 n.10.

²⁸ LBP-17-6, 86 NRC at 50 (citing Petition at 10-11).

²⁹ *Id.* (citing Petition at 11-12).

³⁰ *Id.*

³¹ *Id.* at 50-51.

³² *Id.*

³³ *Id.* at 51; *see* Application § 1.3 at 5.

³⁴ LBP-17-6, 86 NRC at 51.

³⁵ *Id.* FPL explained that cost recovery is discussed in the application as “sort of a defense-in-depth . . . an additional reason why we’re financially qualified, but it’s not a source of funding.” Tr. at 951-52; *see also id.* at 921 (Judge Hawken distinguishing “between covering the outlay for construction [cost funding] versus recovering the outlay for construction [cost recovery]”); *id.* at 966 (Judge Kennedy stating that the cost recovery information in the application is “just an abundance

(Continued)

And the Board concluded that, because FPL does not rely on cost recovery as a source of construction funding, the contention did not controvert the application's statements regarding sources of construction funding.³⁶ Therefore, the municipalities' claim that FPL will not be able to recover construction costs is not material to FPL's financial qualification under 10 C.F.R. § 50.33(f)(1).³⁷

With respect to the second argument — that Westinghouse's bankruptcy may jeopardize FPL's ability to secure external funding — the Board likewise determined that the municipalities had not raised a genuine dispute on a material issue. As support for this argument, the municipalities submitted a newspaper article stating that Westinghouse will not construct new nuclear reactors in the United States.³⁸ The municipalities asserted that since there is currently no entity retained or available to build the proposed reactors, it will be harder for FPL to secure external funding.³⁹ While acknowledging that Westinghouse's bankruptcy may "impact some external funders' decisions to finance the project," the Board found that "the mere allegation that external funding might be impacted is insufficient to raise a genuine dispute as to whether FPL is financially qualified to construct Units 6 and 7."⁴⁰ The Board observed that the municipalities did not offer any "direct support — by factual affidavits, expert declarations, or documentary evidence — for their assertion that Westinghouse's bankruptcy will necessarily jeopardize FPL's external sources of funding."⁴¹ As such, the Board found that the municipalities did not provide adequate support to cast doubt on the reasonableness of FPL's financing plan or its ability to implement that plan and that their speculative claim that Westinghouse's bankruptcy will jeopardize external funding sources did not raise a genuine dispute on a material issue of law or fact.⁴²

of information"). The Board observed that regardless of the statement in the FSER that FPL plans to recover construction costs pursuant to state law, the Staff made its financial qualifications decision without regard to the potential cost recovery from Florida. LBP-17-6, 86 NRC at 52 n.13 (citations omitted). The Board instead noted that "as the FSER concludes, 'both FPL and NextEra Energy have sufficient financing capacity to fund this project from . . . internally generated operating cash flows, commercial paper and bank facilities, and long-term debt and equity capital markets.'" *Id.* (citations omitted).

³⁶ LBP-17-6, 86 NRC at 52.

³⁷ *Id.*

³⁸ *Id.* (citing Petition (attaching Russell Gold and Takashi Mochizuki, *Toshiba to Exit Nuclear Construction Business*, Wall St. J., Jan. 31, 2017, <http://www.wsj.com/articles/toshiba-to-exit-nuclear-construction-business-1485887107>)).

³⁹ *Id.* (citing Petition at 11).

⁴⁰ *Id.* at 53.

⁴¹ *Id.*

⁴² *Id.* The Board also highlighted that the reasonable assurance standard associated with the

(Continued)

On appeal, South Miami claims that the Board first erred by finding that FPL did not rely on cost recovery as part of its financial qualifications.⁴³ South Miami submits that FPL considered cost recovery “significant enough” to include in its combined license application, and therefore cost recovery cannot be disregarded.⁴⁴ And South Miami adds that the Staff “believed that cost recovery was relevant and material to FPL’s ability to fund the construction,” based on language in the Staff’s FSER that stated FPL will recover the cost of constructing the facility under state law.⁴⁵ But this argument merely repeats the municipalities’ arguments below without challenging the Board’s decision with any particularity and therefore provides insufficient ground for overturning the Board’s decision. The record reflects that the Board considered FPL’s use of cost recovery in its application and concluded that “FPL does not purport to rely on cost recovery from Florida as a source of construction funding.”⁴⁶ Rather, the Board concluded that FPL intends to seek cost recovery as reimbursement for the funds it expends — in other words, FPL will obtain construction funds from other (internal and external) sources and request reimbursement through the state rate recovery process.⁴⁷ The litigants do not dispute that the combined license application references both cost recovery and cost funding. But South Miami does not address the Board’s explanation of the difference between cost recovery and cost funding or otherwise explain how the Board’s decision was in error.

In its appeal, South Miami further claims that the dissolution of FPL’s “nuclear reactor construction agreements” with Westinghouse will negatively impact FPL’s financing.⁴⁸ It appears that South Miami is referring to the Reservation Agreement between Westinghouse and FPL, under which Westinghouse

financial qualification showing does not require “a demonstration of near certainty that an applicant will never be pressed for funds in the course of construction,” but instead requires only that an applicant “have a reasonable financing plan in the light of relevant circumstances.” *Id.* (quoting *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 18 (1978)); see *Seabrook*, CLI-78-1, 7 NRC at 21 (“Anticipated difficulties in raising funds are relevant to the reasonable assurance determination, but a showing of some potential difficulty would not necessarily preclude that determination, all other relevant factors being taken into account.”).

⁴³ Appeal at 7.

⁴⁴ *Id.* at 9.

⁴⁵ *Id.* at 10. The Board examined the FSER language and concluded that, “[a]lthough the FSER is not at issue here, . . . its conclusion that FPL’s financial qualification is independent of FPL’s ability to recover construction costs from Florida undercuts [the municipalities’] argument that FPL’s [combined license] application relies on cost recovery as part of its financial qualification statement.” LBP-17-6, 86 NRC at 52 n.13.

⁴⁶ LBP-17-6, 86 NRC at 52.

⁴⁷ *Id.* at 51.

⁴⁸ Appeal at 9.

reserved space for the manufacture of certain “long lead time” components for Turkey Point Units 6 and 7.⁴⁹ The Reservation Agreement did not guarantee the purchase and sale of the components, let alone construction of the reactors. Because the Agreement did not purport to guarantee construction in the first instance, termination of the Agreement could not remove a guarantee of construction; therefore, as the Staff noted, the Agreement did not figure into the financial qualifications review.⁵⁰

Additionally, South Miami argues that the Board erred in finding that Westinghouse’s bankruptcy has not, by itself, raised “legitimate doubt as to whether FPL can obtain external funding.”⁵¹ In this vein, South Miami reiterates its assertion that, because FPL has no agreements currently in place for the construction of Units 6 and 7, FPL will be unable to recover any costs for the construction of the units through the state ratemaking process.⁵² In short, South Miami contends that Westinghouse’s bankruptcy has made it impracticable for FPL to recover construction costs through the state ratemaking process, which takes away one of FPL’s major sources of construction funding.⁵³ These arguments do not address the Board’s determination that the proposed contention, which raised fundamentally speculative concerns about the effects of the Westinghouse bankruptcy, lacks factual or expert support sufficient to establish a genuine dispute with FPL’s combined license application.⁵⁴ Instead, South Miami repeats the un-

⁴⁹ See FPL Answer to Petition at 14 (citing the Reservation Agreement, which was attached to the Petition as part of the Letter from Kerry B. Hanahan, Westinghouse, to Kelly Shaw, FPL, “Reservation Agreement for Manufacture of Long Lead Time Forgings” (May 16, 2008)).

⁵⁰ See Staff Answer to Petition at 18.

⁵¹ Appeal at 13.

⁵² *Id.* at 11-12. South Miami argues that the Florida Public Service Commission (FPSC) requires FPL to demonstrate that its expenditures for Turkey Point Units 6 and 7 are reasonable and prudent and that the project remains feasible. *Id.* at 12. South Miami notes that because FPL requested to defer the filing of a feasibility analysis, the FPSC has not made a recent determination on the reasonableness of the project’s costs or the project’s feasibility. Without such a finding, FPL cannot recover its costs via rates. *Id.* at 12-13. Though the economic feasibility analysis before the FPSC is outside the scope of the NRC’s combined license review, we observe that the process is ongoing. In July 2016, the FPSC granted FPL’s motion to defer consideration of its cost recovery request. Order No. PSC-16-0266-PCO-EI, issued on July 12, 2016, in Docket 160009-EI, *In re: Nuclear cost recovery clause* (<http://www.psc.state.fl.us/library/filings/2016/04478-2016/04478-2016.pdf>). The order stated that FPL plans to file a long-term feasibility analysis in the 2017 nuclear cost recovery proceeding docket. *Id.* at 2.

⁵³ Appeal at 12-13. South Miami also cites reports that Westinghouse will no longer construct any new reactors in the United States. *Id.* at 13.

⁵⁴ South Miami raises a new argument on appeal — that FPL’s parent company, NextEra Energy, Inc., disclosed in a Securities and Exchange Commission filing that FPL, as an electric utility subject to the jurisdiction of the FPSC, “is engaged in a risky business with no clear cut revenue stream.”

(Continued)

ported assertions that the municipalities made below. But as the Board noted, mere speculation that Westinghouse's bankruptcy *might* impair FPL's ability to secure external funding does not call into question the reasonableness of FPL's financing plan and does not raise a genuine dispute with the application.⁵⁵ South Miami's recycled arguments on appeal do not demonstrate an error of law or abuse of discretion in the Board's decision.

Finally, South Miami challenges the Board's exclusion of the Crisp Affidavit that the municipalities submitted with their reply.⁵⁶ The Board excluded the affidavit "because it improperly 'attempt[ed] to backstop elemental deficiencies in [the] original petition to intervene.'"⁵⁷ The Board observed that a petitioner need not present all of the documentary support that will be used at the hearing at the contention pleading stage. If the original contention lacked adequate support, however, "a petitioner cannot remediate the deficiency by introducing in the reply documents that were available to it during the time frame for initially filing contentions."⁵⁸ South Miami has not explained why the Crisp Affidavit could not have accompanied the municipalities' original hearing request.⁵⁹ Instead, South Miami contends that the Board erred when it excluded the Crisp Affidavit because it should have been allowed "as a legitimate amplification of the new contention."⁶⁰ South Miami does not, however, dispute with any specificity the Board's ruling, and it has therefore not demonstrated error of law or abuse of discretion on the part of the Board.⁶¹

Id. at 6, 14 (citing NextEra Energy Capital Holdings, Inc., Prospectus Supplement, Filed Pursuant to Rule 424(b)(2) (Apr. 26, 2017)). This statement, which was "identical to information available in previous prospectuses," pertained to FPL's business as a general matter, not just its nuclear business. Staff Brief at 8. We decline to consider a new argument raised for the first time on appeal. *See, e.g., USEC Inc. (American Centrifuge Plant)*, CLI-06-10, 63 NRC 451, 458 (2006) (stating that absent extreme circumstances, the Commission will not consider new arguments or new evidence on appeal).

⁵⁵ LBP-17-6, 86 NRC at 53.

⁵⁶ Appeal at 7.

⁵⁷ LBP-17-6, 86 NRC at 45 (quoting *Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 262 (2008) (internal quotation marks omitted)).

⁵⁸ *Id.* at 45-46 (quoting *Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 732 (2006)).

⁵⁹ *See id.* at 46; *see also DTE Electric Co. (Fermi Nuclear Power Plant, Unit 2)*, CLI-15-18, 82 NRC 135, 147 (2015) ("For any new arguments or new support for a contention, a petitioner must, among other things, explain why it could not have raised the argument or introduced the factual support earlier."); *Louisiana Energy Services, L.P. (National Enrichment Facility)*, CLI-04-25, 60 NRC 223, 224-25, *reconsideration denied*, CLI-04-35, 60 NRC 619 (2004).

⁶⁰ Appeal at 15-16.

⁶¹ *See Shieldalloy*, CLI-07-20, 65 NRC at 503.

Nevertheless, we have reviewed the Crisp Affidavit and find that the affidavit, even had it been considered by the Board in its entirety, would not have made the contention admissible. The municipalities offered the Crisp Affidavit to support the proposition that “[t]here is a nexus between Westinghouse’s bankruptcy and FPL’s financial qualifications, because the bankruptcy and its precipitating events[] completely change the landscape of FPL’s ability to recover before the FPSC.”⁶² Mr. Crisp’s statements, which pertain to the Reservation Agreement, FPL’s general ability to contract for construction of the proposed facility, and the effect on FPL of cost increases and schedule delays associated with two other nuclear power plants, amount to additional speculation about the possible impacts of the Westinghouse bankruptcy on FPL. Mr. Crisp does not assert that FPL will not be able to secure external funding, but rather he opines that the outcome of the construction of Turkey Point is unknown and the Westinghouse bankruptcy complicates investors’ inquiry into the viability of the project.⁶³ This viewpoint is fundamentally speculative. And furthermore, considered with the municipalities’ other filings, Mr. Crisp’s statements do not introduce a genuine dispute with the application. Therefore, even taking into account the affidavit, the contention remains inadmissible.

In sum, South Miami repeats the arguments it made to support contention admissibility and the inclusion of the Crisp Affidavit but does not offer any specific criticisms of the Board decision, or even engage the Board’s discussion of the municipalities’ arguments. South Miami has pointed to no grounds on which to disturb the Board decision.⁶⁴ Because South Miami has not provided sufficient support to establish a link between the Westinghouse bankruptcy and

⁶²Reply at 7 (citing Crisp Affidavit). The municipalities later argued that the Crisp Affidavit amplified issues such as “the ability of FPL to provide reasonable assurances that it can obtain funding and to construct these units through advanced nuclear cost recovery or from external funding sources.” Petitioners’ Response to FPL’s Motion to Strike Portions of Petitioners’ Reply and Affidavit of Mark W. Crisp (June 12, 2017), at 6.

⁶³Crisp Affidavit ¶¶ 20, 26, 28. Mr. Crisp questioned whether “construction can proceed to a successful conclusion,” in light of several issues, the most significant of which is “FPL’s ability to secure funding for two new units in light of the effect of bankruptcy on Wall Street’s confidence to provide debt funding.” *Id.* ¶ 20. Mr. Crisp also opined that “the financial markets[’] appetite to fund bonds and at what interest rate to cover FPL’s construction of Turkey Point Units 6 & 7” should be reexamined. *Id.* ¶ 26.

⁶⁴The Board rejected FPL’s argument that the contention was not timely filed. LBP-17-6, 86 NRC at 47-48. FPL again raises the timeliness argument in response to South Miami’s appeal. FPL Brief at 14-17. We need not reach the timeliness argument in view of our decision that the Board did not err in finding the contention otherwise inadmissible.

the financial qualifications information specified in FPL's combined license application, it has not articulated an admissible contention for hearing.⁶⁵

III. CONCLUSION

For the foregoing reasons, we *affirm* the Board's decision in LBP-17-6.
IT IS SO ORDERED.

For the Commission

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 11th day of December 2017.

⁶⁵ As of the date of this order, we are scheduled to hold the uncontested hearing on the Turkey Point combined license application on December 12, 2017. Florida Power and Light Company; Turkey Point, Units 6 and 7; Combined License Application; Revised Notice of Hearing, 82 Fed. Reg. 47,044 (Oct. 10, 2017). That hearing provides us with an opportunity to review the sufficiency of the Staff's safety and environmental analyses. The adequacy of the Staff's evaluation of FPL's financial qualification is part of that review.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Brian E. Holian, Acting Director

In the Matter of

ALL OPERATING REACTOR
LICENSEES

December 12, 2017
(Revised January 18, 2018)

By letter dated February 19, 2016, Roy Mathew, Sheila Ray, Swagata Som, Gurcharan Singh Matharu, Tania Martinez Navedo, Thomas Koshy, and Kenneth Miller (Petitioners) filed a petition pursuant to Title 10 of the *Code of Federal Regulations* (10 C.F.R.) section 2.206, "Requests for action under this subpart." The Petitioners requested that the U.S. Nuclear Regulatory Commission (NRC) take enforcement action against all operating reactor licensees.

The Petitioners' letter, dated February 19, 2016, requested that the NRC either: (1) issue orders to require immediate corrective actions including compensatory measures to address the operability of electric power systems in accordance with their plant technical specifications, and to implement plant modifications in accordance with current NRC regulatory requirements and Staff guidance provided in the references within the 2.206 petition, or (2) issue orders to immediately shut down the nuclear power plants that are operating without addressing the significant design deficiency identified in NRC Bulletin 2012-01, "Design Vulnerability in Electric Power System," dated July 27, 2012, since the licensees are not in compliance with their Technical Specifications (typically section 3.8.1) related to onsite and offsite power systems.

As the basis for the request, the Petitioners refer to the Byron Station, Unit 2, operating event. On January 30, 2012, Byron Station, Unit 2, experienced an automatic reactor trip from full power because the reactor protection scheme detected an undervoltage condition on the 6.9-kV buses that power reactor coolant pumps B and C.

On February 24, 2016, the NRC's petition manager acknowledged receipt of

the petition and offered the Petitioners an opportunity to address the Petition Review Board (PRB). The Petitioners declined an opportunity to address the PRB on the basis that the petition already contained all of the relevant facts to support the PRB's review.

On March 14, 2016, the PRB met internally to discuss the request for immediate action, and to make an initial recommendation to either accept or reject the petition for review. The PRB denied the request for immediate action on the basis that the petition presented no significant new information, and only raised issues that had already been the subject of NRC Staff review for regulatory and safety significance. The PRB also made an initial recommendation that the petition met the criteria for review in accordance with Management Directive 8.11.

On March 15, 2016, the Petitioners were informed of the PRB's decision to deny the request for immediate action and of the initial recommendation to accept the petition for review. The Petitioners declined a second opportunity to address the PRB on the basis that the petition already contained all of the relevant facts to support the PRB's review. Therefore, consistent with its initial recommendation, the PRB declared its final recommendation to accept the petition for review.

In its March 21, 2016, acknowledgment letter, the NRC Staff informed the Petitioners that although their request for immediate action was denied, the petition was accepted for review.

By letters dated September 18, 2017, the NRC sent a copy of the proposed director's decision to the Petitioners and to the licensees for comment. The Petitioners and the licensees were given the opportunity to provide comments on any part of the proposed director's decision that was considered to be erroneous or any issues in the petition that were not addressed. The Petitioners provided comments by letter dated October 11, 2017, and the Nuclear Energy Institute (NEI) provided comments, on behalf of licensees, by letter dated October 16, 2017. No new information was provided.

Subsequently, on December 12, 2017, the NRC issued a final director's decision. To enhance the clarity of the director's decision, the NRC Staff revised the description on the NRC's accident sequence precursor program provided in Section D of the Director's Decision, to differentiate between condition and event assessments. The comments from the Petitioners and NEI, along with the NRC Staff's responses to the comments are included as an attachment to the Director's Decision. The attachment identifies any updates to the Director's Decision, as a result of comments received from the Petitioners and NEI.

After the final director's decision was issued, the NRC was informed by a licensee of a minor error in the final director's decision. Specifically, Section D of the final director's decision refers to a December 2015 open phase condition event at Oconee and states, "Two separate transformers required for

safe shutdown of the three operating Oconee nuclear units were identified with open phase conditions.” This statement is in error because only one Oconee transformer experienced an open phase condition. Although this error does not change the decision in the director’s decision, the NRC issued a Revised Director’s Decision (ADAMS Accession No. ML18005A053) on January 18, 2018, to correct the statement.

The NRC found the petition insufficient to warrant the enforcement actions in the Petitioners’ requests. The Petitioners’ concerns related to the open phase condition vulnerability for operating reactors represent a safety issue that the Commission agreed should not be left unaddressed, and these concerns are currently being resolved through the implementation of the industry’s open phase condition initiative. This approach is consistent with the Commission’s direction to the NRC Staff, recognizing that the nuclear industry is already implementing the voluntary industry initiative (permanent modifications such as Open Phase Isolation System). The NRC Staff will determine each licensee’s final actions through plant inspections, and the results will be made public, as appropriate. Thus, the NRC denied the Petitioners’ requested enforcement action against the operating reactor licensees.

REVISED DIRECTOR’S DECISION UNDER 10 C.F.R. § 2.206

I. INTRODUCTION

By letter dated February 19, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16050A223), Roy Mathew, Sheila Ray, Swagata Som, Gurcharan Singh Matharu, Tania Martinez Navedo, Thomas Koshy, and Kenneth Miller (Petitioners) filed a petition pursuant to Title 10 of the *Code of Federal Regulations* (10 C.F.R.) section 2.206, “Requests for action under this subpart.” The Petitioners requested that the U.S. Nuclear Regulatory Commission (NRC) either: (1) issue orders to require immediate corrective actions including compensatory measures to address the operability of electric power systems in accordance with their plant technical specifications, and to implement plant modifications in accordance with current NRC regulatory requirements and Staff guidance provided in the references within the 2.206 petition, or (2) issue orders to immediately shut down the nuclear power plants that are operating without addressing the significant design deficiency identified in NRC Bulletin (BL) 2012-01, “Design Vulnerability in Electric Power System,” dated July 27, 2012 (ADAMS Accession No. ML12074A115), since the

licensees are not in compliance with their Technical Specifications (typically section 3.8.1) related to onsite and offsite power systems.

Management Directive (MD) 8.11, "Review Process for 10 CFR 2.206 Petitions" (ADAMS Accession No. ML041770328), describes the NRC's review process for 10 C.F.R. § 2.206 petitions. On February 24, 2016, the NRC's petition manager acknowledged receipt of the petition and offered the Petitioners an opportunity to address the Petition Review Board (PRB). The Petitioners declined an opportunity to address the PRB on the basis that the petition already contained all of the relevant facts to support the PRB's review.

On March 14, 2016, the PRB met internally to discuss the request for immediate action, and to make an initial recommendation to either accept or reject the petition for review. The PRB denied the request for immediate action on the basis that the petition presented no significant new information, and only raised issues that had already been the subject of NRC Staff review for regulatory and safety significance. The PRB also made an initial recommendation that the petition met the criteria for review in accordance with MD 8.11, Section III.C(1), "Criteria for Reviewing Petitions Under 10 CFR 2.206."

On March 15, 2016, the Petitioners were informed of the PRB's decision to deny the request for immediate action and of the initial recommendation to accept the petition for review. The Petitioners declined a second opportunity to address the PRB on the basis that the petition already contained all of the relevant facts to support the PRB's review. Therefore, consistent with its initial recommendation, the PRB declared its final recommendation to accept the petition for review.

In its March 21, 2016, acknowledgment letter (ADAMS Accession No. ML16069A214), the NRC Staff informed the Petitioners that although their request for immediate action was denied, the petition was accepted for review.

The NRC sent a copy of the proposed director's decision to the Petitioners and to the licensees for comment by letters dated September 18, 2017 (ADAMS Accession Nos. ML17156A197 and ML17156A214). The Petitioners and the licensees were given the opportunity to provide comments on any part of the proposed director's decision that was considered to be erroneous or any issues in the petition that were not addressed. The Petitioners provided comments by letter dated October 11, 2017 (ADAMS Accession No. ML17291A040), and the Nuclear Energy Institute (NEI) provided comments, on behalf of licensees, by letter dated October 16, 2017 (ADAMS Accession No. ML17291A846). No new information was provided. To enhance the clarity of the director's decision, the NRC Staff revised the description on the NRC's accident sequence precursor (ASP) program provided in Section D of this Director's Decision, to differentiate between condition and event assessments. The comments from the Petitioners and NEI, along with the NRC Staff's responses to the comments, are included as an attachment to this Director's Decision. The attachment identifies any updates

to the Director's Decision, as a result of comments received from the Petitioners and NEI.

On December 12, 2017, the NRC issued a final director's decision (ADAMS Accession No. ML17304A893). Subsequently, the NRC was informed of a minor error in the final director's decision. Specifically, Section D of the final director's decision refers to a December 2015 open phase condition event at Oconee and states, "Two separate transformers required for safe shutdown of the three operating Oconee nuclear units were identified with open phase conditions." This statement is in error because only one Oconee transformer experienced an open phase condition. Although this error does not change the decision in the Director's Decision, the NRC revised it, as appropriate, for accuracy.

The petition and other references related to this petition are available for inspection in the NRC's Public Document Room (PDR), located at O1F21, 11555 Rockville Pike (first floor), Rockville, Maryland 20852. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC's PDR reference staff by telephone at 1-800-397-4209, or 301-415-4737, or by e-mail to pdr.resource@nrc.gov.

II. DISCUSSION

Based on the NRC's comprehensive activities related to the resolution of open phase conditions in the electric power system for current operating nuclear power plants, the NRC's review took longer than the standard of 120 days for reaching a decision on the petition. This section includes a discussion of the relevant operating experience, NRC and industry actions, applicable regulatory requirements and guidance, the safety significance of the issue underlying the petition, and the NRC's actions and decisions on the Petitioners' requests.

A. Summary of Byron Station, Unit 2 Event

As the basis for this petition, the Petitioners refer to the Byron Station, Unit 2, operating event. On January 30, 2012, Byron Station, Unit 2, experienced an automatic reactor trip from full power because the reactor protection scheme detected an undervoltage condition on the 6.9-kV buses that power reactor coolant pumps (RCPs) B and C (undervoltage on two of four RCPs initiate a reactor trip). The undervoltage condition was caused by a broken insulator for the phase C conductor for the 345-kV power circuit that supplies both station auxiliary

transformers (SAT). The insulator failure resulted in an open circuit for the phase C conductor, which supplies the high-voltage side of the SATs. The open circuit created an unbalanced voltage condition on two 6.9-kV nonsafety-related RCP buses and the two 4.16-kV engineered safety features (ESF) buses. Some ESF loads that were energized relied on equipment protective devices to prevent damage from the resulting unbalanced overcurrent condition. The phase overcurrent condition resulted in a trip of several ESF loads.

Approximately 8 minutes after the reactor trip, the control room operators manually opened circuit breakers to separate the unit buses from the offsite power source. When the operators opened the SAT feeder breakers to the two 4.16-kV ESF buses, the loss-of-voltage relays started the emergency diesel generators (EDGs) and the EDGs restored power to the ESF buses. If the condition had been allowed to persist for an additional few minutes, damage to the RCP seals could have occurred due to loss of RCP seal cooling water. This in turn could have resulted in excessive leakage of reactor coolant from the RCP seals in the containment building.

B. Summary of NRC and Industry Actions

Following this event, the NRC completed a reactive inspection pursuant to Inspection Procedure 93812, "Special Inspection," at Byron Station, Unit 2. The special inspection (ADAMS Accession No. ML12087A213) reviewed the circumstances surrounding the January 30, 2012, electrical insulator failure in the Byron switchyard, which resulted in a Unit 2 automatic reactor trip and notice of unusual event emergency declaration.

On February 16, 2012, the Institute of Nuclear Power Operations (INPO) issued a Level 2 INPO Event Report describing the Byron event and requiring a review of the lessons learned and corrective actions for applicability by all licensees. As a result of the Byron event, every affected U.S. nuclear power plant now has compensatory measures in place to ensure that control room operators are aware of the issue and are trained to respond, and has modified power source switching procedures to ensure that plants have emergency power, if needed.

On March 1, 2012, the NRC issued Information Notice 2012-03, "Design Vulnerability in Electric Power System" (ADAMS Accession No. ML1204-80170), to inform the licensees operating and constructing commercial power reactors of the operating experience involving the loss of one of the three phases of the offsite power circuit.

On July 27, 2012, the NRC issued BL 2012-01 to confirm licensee compliance with 10 C.F.R. Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, General Design Criterion (GDC) 17, "Electric Power Systems," or principal design criteria specified in the updated

final safety analysis report (UFSAR), 10 C.F.R. § 50.55a(h)(2), and 10 C.F.R. § 50.55a(h)(3). Each licensee's response to BL 2012-01 was submitted to the NRC by October 25, 2012, and can be found in ADAMS under each licensee's docket number.

The NRC Staff reviewed the licensee responses to BL 2012-01 and documented the details of this review in a summary report dated February 26, 2013 (ADAMS Accession No. ML13052A711). Based upon the licensee responses to BL 2012-01, the NRC Staff determined that most nuclear power reactors are susceptible to this open phase design vulnerability and recommended that the NRC take regulatory actions to address this design vulnerability.

On October 9, 2013, the NEI notified the NRC that the industry's Chief Nuclear Officers had approved a formal initiative to address open phase conditions, and that the initiative represented a formal commitment among nuclear power plant licensees to address this design vulnerability for operating reactors and new reactor plant designs (ADAMS Accession No. ML13333A147).

By letter dated December 20, 2013 (ADAMS Accession No. ML13351A314), the NRC issued a Request for Additional Information (RAI) to licensees to verify that they had completed interim corrective actions and compensatory measures and to determine the status of each licensee's long-term corrective actions. The licensees' responses to the RAI are publicly available under each licensee's docket number in ADAMS. Their responses describe the compensatory measures implemented at each plant (primarily enhancements to plant operating procedures and operator training) to minimize plant risk and to ensure adequate safety margins.

The NRC provided a response to the industry initiative, including a discussion of the planned open phase isolation system (OPIS) to be installed at each plant, in a letter to NEI dated November 25, 2014 (ADAMS Accession No. ML14120A203). The NRC noted that the capability of the onsite ESF power system to permit functioning of structures, systems, and components may depend upon successful operation of OPIS, and that the proposed solution needs to fully address GDC 17 or the principal design criteria specified in each plant's UFSAR. The NRC also communicated four functional criteria for demonstrating compliance with existing regulatory requirements. The letter stated that the NRC Staff concluded that although existing NRC regulations have requirements for the onsite and offsite power systems to permit functioning of structures, systems, and components important to safety for any failures in the offsite power system including a single failure in the onsite power system, open phase conditions were not specifically identified as an issue during the licensing reviews of the current operating nuclear power plants. The letter stated that for this reason, the NRC Staff had recommended to the Commission that the NRC grant enforcement discretion to operating reactor licensees and refrain from issuing an enforcement action for certain noncompliances which would require a reac-

tor shutdown while addressing the design vulnerability related to open phase conditions within their electrical power system.

On March 16, 2015, NEI provided the NRC with a revised initiative, changing its implementation completion date for OPIS from December 31, 2017, to December 31, 2018, in order to provide adequate time for licensees to implement necessary plant modifications (ADAMS Accession Nos. ML15075A455 and ML15075A456).

On March 22, 2016, NEI provided the NRC with an update on the industry initiative regarding their proposed plans to resolve the open phase condition issue (ADAMS Accession Nos. ML16091A099 and ML16091A100). Specifically, NEI reported that approximately one-third of the industry fleet had implemented open phase monitoring or protection systems (as of March 22, 2016) and that the remaining plants planned to complete implementation by the December 31, 2018, due date. This letter also contained a detailed discussion of the actions already taken by the nuclear industry to resolve the open phase condition vulnerability for operating reactors.

On May 31, 2016, the NRC Staff submitted SECY-16-0068, "Interim Enforcement Policy for Open Phase Conditions in Electric Power Systems for Operating Reactors," to the Commission (ADAMS Accession No. ML15219A327). In SECY-16-0068, the NRC Staff requested Commission approval of an Interim Enforcement Policy (IEP), associated with inoperable electrical power systems (offsite and onsite) caused by an open phase condition design vulnerability in the offsite electric power system that would require a reactor shutdown or prevent a reactor startup if a licensee could not come into conformance within the TS-required completion times.

While awaiting the Commission's decision on SECY-16-0068, the NRC Staff issued Temporary Instruction (TI) 2515/192, "Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems" (ADAMS Accession No. ML16181A170), on November 9, 2016. The objective of this performance-based inspection guidance is to verify implementation of interim compensatory measures associated with an open phase condition design vulnerability in electric power systems for operating reactors that have not completed permanent plant design modifications. The inspections of the power reactors were completed on March 31, 2017.

On March 9, 2017, the Commission issued the staff requirements memorandum (SRM) for SECY-16-0068 (ADAMS Accession No. ML17068A297). The Commission disapproved the Staff's request to establish an IEP "for the purpose of exercising enforcement discretion for purported noncompliance with NRC requirements and nonconformance with design criteria during the pendency of licensee implementation of actions to address an open phase condition." The SRM for SECY-16-0068 provided direction to the NRC Staff regarding the im-

plementation of the voluntary industry initiative to support the closure of BL 2012-01. Specifically, the SRM for SECY-16-0068 stated:

Going forward, the staff should verify that licensees have appropriately implemented the voluntary industry initiative. If the staff determines that a licensee does not adequately address potential OPCs [open phase conditions], including updating the licensing basis to reflect the need to protect against OPCs, the staff should consider the appropriate regulatory mechanism to impose the necessary requirements to protect against OPCs using the current guidance on such matters from the Office of the General Counsel.

The staff should provide the Commission with a notation vote paper if this situation arises for any licensee or licensees, with options, including the staff's recommended path forward. In addition, if disagreements arise between the staff and the industry during implementation of the voluntary industry initiative, and the related issues have policy implications, the staff should promptly raise such issues to the Commission for resolution.

Once satisfactory implementation of the technical resolution has been verified for each licensee, the associated NRC Bulletin should be closed. The staff should update the Reactor Oversight Process to provide periodic oversight of industry's implementation of the OPC initiative.

C. Applicable NRC Regulatory Requirements and Guidance

GDC 17 establishes requirements for the electric design of nuclear power plants for which a construction permit application was submitted after the Commission promulgated the GDC. GDC 17 states:

An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. . . .

Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. . . .

Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of

power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies.

For current operating power plants designed before the promulgation of GDC 17, the plant-specific UFSAR sets forth criteria similar to GDC 17, which requires, among other things, that plants have an offsite and an onsite electric power system with adequate capacity and capability to permit the functioning of structures, systems, and components important to safety in the event of anticipated operational occurrences and postulated accidents.

Section 50.55a(h)(2) of 10 C.F.R. requires nuclear power plants with construction permits issued after January 1, 1971, but before May 13, 1999, to have protection systems that meet the requirements in Institute of Electrical and Electronics Engineers (IEEE) Standard 279-1968, "Proposed IEEE Criteria for Nuclear Power Plant Protection Systems; IEEE Standard 279-1997, "Criteria for Protection Systems for Nuclear Power Generating Stations"; or IEEE Standard 603-1991, "Criteria for Safety Systems for Nuclear Power Generating Stations," and the correction sheet dated January 30, 1995. For nuclear power plants with construction permits issued before January 1, 1971, protection systems must be consistent with their licensing basis or meet the requirements of IEEE Standard 603-1991 and the correction sheet dated January 30, 1995.

Section 50.55a(h)(3) of 10 C.F.R. requires that applications filed on or after May 13, 1999, for construction permits and licenses under 10 C.F.R. Part 50, or for design approvals, design certifications, and combined licenses under 10 C.F.R. Part 52, meet the requirements for safety systems in IEEE Standard 603-1991 and the correction sheet dated January 30, 1995. These IEEE standards state that the protection systems must automatically initiate appropriate protective actions whenever a condition the system monitors reaches a preset level. Once initiated, protective actions should be completed without manual intervention to satisfy the applicable requirements of the IEEE standards.

To support future licensing, the NRC Staff also developed draft Branch Technical Position (BTP) 8-9, "Open Phase Conditions in Electric Power System Review Responsibilities" (ADAMS Accession No. ML14057A433), to provide design criteria and Staff guidance consistent with applicable regulations and existing guidance found in Chapter 8 of the Standard Review Plan, "Electric Power Systems." Public comments requested through a *Federal Register* notice on June 5, 2014 (79 Fed. Reg. 32,580) were addressed when finalizing the BTP. The final BTP 8-9 was published in July 2015 (ADAMS Accession No. ML15057A085), and the NRC Staff plans to use this guidance for future licensing actions to verify compliance with applicable regulations related to electric power systems.

D. Safety Assessment

In the petition, the Petitioners stated that operating experience demonstrates that the open phase condition is a significant safety concern since a design basis event concurrent with an open phase condition would in most cases result in the plant exceeding criteria specified in 10 C.F.R. § 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors." The Petitioners also stated that the NRC's ASP analysis for the Byron event indicated the risk, Conditional Core Damage Probability, as 1×10^{-4} .

At the time that the petition was filed with the NRC, several open phase events had been identified over the last 14 years in the United States and internationally. Since the time that compensatory measures were implemented at nuclear power plants, the licensee for Oconee, Unit 3, identified and reported the discovery of an open phase condition at the Oconee facility on December 7, 2015. Specifically, the licensee determined that a Unit 3 startup transformer was inoperable because of an open phase condition. On February 5, 2016, the licensee reported this event in Licensee Event Report 287/2015-002, Revision 0 (ADAMS Accession No. ML16041A170). The Petitioners concluded that this event indicates that the lessons learned and manual compensatory actions implemented after the Byron event by licensees were ineffective.

The NRC conducted a special inspection of this event (ADAMS Accession No. ML16057A062) and determined that, contrary to the event at Byron, Unit 2, on January 30, 2012, no effects were experienced on the Unit 3 plant buses because the plant buses were energized by the auxiliary transformer (supplied by the main generator) and no reactor trip signal occurred to transfer the plant buses to the startup transformer. If a reactor trip signal had occurred, it would have been similar to the Byron event, in that when the operators recognized power supply to the safety buses was deficient (one phase degraded), they could have energized the safety buses from an onsite emergency power source.

At Oconee, the onsite emergency power source is the Keowee hydro generators. The NRC inspectors determined that interim compensatory measures were in place at the facility at the time of the event and that the open phase condition was identified during a routine walk-down surveillance, not from automatic alarms in the control room. The inspectors noted in the inspection report that when the startup transformer is not supplying the plant buses, there is not enough current flow for the installed relays to detect an open phase condition. The fact that operators failed to receive alarms in the control room intended to alert them of an open phase condition during the December 7, 2015, event at Oconee highlights the importance of implementing permanent design changes at all affected facilities.

The events that occurred at Byron Station, Unit 2, and Oconee Nuclear Station are considered by the NRC to be safety significant because the occurrence

of the open phase condition either resulted or could have resulted in a design basis event (i.e., loss of offsite power), and a condition by which electric power from the onsite emergency power system was not automatically distributed to safety-related equipment needed to mitigate the consequences of the event. The events were also significant in that plant operators were presented with circumstances they did not immediately understand and they did not have adequate procedures for addressing an open phase condition.

Operating experience has shown that an open phase condition may result in one of many possible impacts on the plant and that the other actual open phase events in the United States have resulted in conditions much less severe from a safety perspective than the Byron event. There has been no instance of a design basis accident occurring independent of — yet simultaneously with — an open phase condition. This is to be expected given the low likelihood of an open phase condition and a design basis accident occurring during the same time interval.

Given the current range of estimates of these likelihoods for operating reactors, the risk associated with a design basis accident occurring independently yet simultaneously with an open phase condition is expected to be small. Therefore, the likelihood of a design basis accident concurrent with an open phase condition resulting in the plant exceeding criteria specified in 10 C.F.R. § 50.46 would accordingly be small.

The importance of implementing permanent design changes at all affected facilities is further supported by information in a white paper prepared by the NRC Staff to provide risk insights on the impact of a postulated loss of a single phase in a three-phase high-voltage offsite power circuit (ADAMS Accession No. ML17234A631). The white paper assessed the change in core damage frequencies for specific plants emphasizing the plant type (boiling water reactor or pressurized water reactor) and the electrical switchyard configurations. In summary, the white paper demonstrates that an undetected open phase condition, as modeled in the study, has the potential to introduce an additional increase in core damage frequency. Taking conservatism into account as outlined in the white paper, this assessment estimates that without modifications to install an OPIS, the core damage frequency contribution from open phase condition for the plants evaluated increased significantly (i.e., beyond an order of magnitude, from their base core damage frequencies). Based on risk insights derived from the assessment, the NRC Staff concluded that the use of visual inspection rounds in switchyard areas alone will have minimal benefit for decreasing the impact of open phases. However, the use of a detection system and/or automatic actuation system (i.e., OPIS) would greatly reduce this vulnerability. Additional plant modifications, such as RCP seal loss of coolant accident mitigation systems in pressurized water reactor plants (i.e., RCP shutdown seals and/or independent

diesel-driven seal injection pumps), can also provide an additional measure of safety.

The insights in the white paper are derived from performing a condition assessment resulting in an annualized core damage frequency, whereas the 10^{-4} conditional core damage probability estimate cited by the Petitioners is the result of an event assessment using the NRC's ASP analysis. Although both provide an acceptable characterization of risk, the condition assessment used in the white paper is more appropriate for evaluating the impact of OPC on the operating fleet. The NRC's ASP program is one of three agency programs that assess the risk significance of operational events that have occurred at licensed U.S. commercial nuclear power plants. The ASP program systematically evaluates the risk significance of precursor events. An accident sequence precursor is an initiating event or degraded condition that, when coupled with one or more postulated failures of mitigating structures, systems, or components, or operator errors, could result in a plant condition involving inadequate core cooling and severe reactor core damage. Consequently, the results of calculations made in an ASP analysis only reflect the probability that a core damage event could have occurred due to the combination of actual and postulated events. ASP analysis results do not reflect the expected frequency of core damage events. This differs from the results produced in a plant-specific probabilistic risk assessment (PRA), which is an estimate of the frequency of core damage for the plant that accounts for the frequency of events that could initiate a sequence of equipment failures/unavailabilities or human errors leading to the occurrence of core damage.

Analyses performed as part of the NRC's ASP program can be used to identify trends that may contribute to increased risk to the safety of operating reactors, and the results can be used to explore areas that may require additional evaluation to determine the appropriate regulatory response. Due to their conditional nature, the numerical result of an ASP analysis is not used by the NRC Staff as a risk metric in determining the acceptability of changes to a facility's licensing basis.

The Petitioners further stated that based upon the applicable codes, standards, and regulations, the licensing bases and design bases for all U.S. nuclear power plants require that both offsite and onsite power systems must be operable and capable of supporting design bases functions. In the SRM for SECY-16-0068, the Commission directed the NRC Staff to address the open phase condition concern by verifying that licensees have appropriately implemented the voluntary industry initiative. The Commission stated that if a licensee does not adequately address potential open phase conditions, including updating the licensing basis to reflect the need to protect against open phase conditions, then the Staff should consider the appropriate regulatory mechanism to impose the necessary requirements to protect against open phase conditions. In accordance

with this direction, implementation of a second TI for the open phase condition in the NRC Inspection Manual will focus NRC inspections on the evaluation of the industry initiative associated with the open phase condition design vulnerabilities. This effort will verify that licensees have appropriately implemented the voluntary initiative and updated the plant licensing basis. Consistent with the Commission's direction in the SRM, if the Staff determines that a licensee does not adequately address potential open phase conditions, including updating the licensing basis to reflect the need to protect against open phase conditions, the Staff will consider the appropriate regulatory mechanism to impose the necessary requirements to protect against open phase conditions.

E. Evaluation of the Petitioners' Requests

This section includes both the Petitioners' requests and the NRC's decisions.

Petitioners' Request 1: Issue orders which require immediate corrective actions including compensatory measures to address the operability of electric power systems in accordance with their plant technical specifications, and to implement plant modifications in accordance with current NRC regulatory requirements and Staff guidance provided in the references within the 2.206 petition.

Petitioners' Request 2: Issue orders to immediately shut down the nuclear power plants that are operating without addressing the significant design deficiency identified in BL 2012-01, "Design Vulnerability in Electric Power System," since the licensees are not in compliance with their Technical Specifications Limiting Condition for Operation 3.8.1 (typical) requirements related to onsite and offsite power systems.

NRC Decision for Petitioners' Requests 1 and 2: The NRC Staff has decided not to issue orders at this time to operating reactor licensees regarding an open phase condition, as requested by the Petitioners. This decision is based upon the licensee responses to BL 2012-01, subsequent licensee responses to the NRC's RAI, the actions taken by licensees in response to the industry open phase condition voluntary formal initiative (which included immediate compensatory measures and a commitment to install permanent design modifications), and the completion of NRC inspections using TI 2515/192 to verify whether the licensee has implemented the compensatory measures specified in TI § 03.01 to mitigate the potential impact of an open phase condition. These comprehensive actions resolve the Petitioners' request to issue orders to licensees.

III. CONCLUSION

Based upon the information summarized above, the NRC found the petition insufficient to warrant the enforcement actions in the Petitioners' Requests 1 and 2. The Petitioners' concerns related to the open phase condition vulnerability for operating reactors represent a safety issue that the Commission agreed should not be left unaddressed, and these concerns are currently being resolved through the implementation of the industry's open phase condition initiative. This approach is consistent with the Commission's direction to the NRC Staff in the SRM for SECY-16-0068, recognizing that the nuclear industry is already implementing the voluntary industry initiative (permanent modifications such as OPIS). The NRC Staff will determine each licensee's final actions through plant inspections, and the results will be made public in ADAMS, as appropriate.

On this basis, the Petitioners' requests are denied. The NRC does not plan to take the enforcement actions specified in the Petitioner's request. Therefore, the NRC is closing this petition.

As provided for in 10 C.F.R. § 2.206(c), a copy of this Director's Decision will be filed with the Secretary of the Commission for the Commission to review. The decision will constitute the final action of the Commission 25 days after the date of the decision unless the Commission, on its own motion, institutes a review of the decision within that time.

FOR THE U.S. NUCLEAR
REGULATORY COMMISSION

Brian E. Holian, Acting Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 18th day of January 2018.

Attachment:
Responses to Petitioners'
Comments and Licensee's
Comments on Proposed
Director's Decision

ATTACHMENT

COMMENTS RECEIVED FROM THE PETITIONERS AND THE LICENSEES ON THE PROPOSED DIRECTOR'S DECISION DATED SEPTEMBER 18, 2017

Comments from the Petitioners

Comments were received from the Petitioners by letter dated October 11, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17291A040). The Petitioners' seven-page response described concerns with the proposed director's decision. The comments below are paraphrased by the petition review board (PRB) in order to consolidate the concerns into distinct topics.

Comment 1

The open phase isolation systems (OPIS) should be required to be a safety-related OPIS, and an order should be issued to the applicable licensees requiring this.

Response 1

The staff requirements memorandum (SRM) for SECY-16-0068 allowed for the voluntary industry initiative to be implemented to provide detection of open phase conditions (OPC). Most licensees are implementing a nonsafety-related OPIS. The PRB has not concluded that a safety-related OPIS is necessarily required. The U.S. Nuclear Regulatory Commission (NRC) regulations do not require licensees to assume the failure of all nonsafety-related protection on electrical supply systems to safety-related buses. For example, there are typically no safety-related relays for underfrequency or overfrequency monitoring of the safety buses.

Comment 2

The NRC's actions to resolve the OPC safety issue are not timely, responsive, and consistent with safety goals of protecting the health and safety of the public from nuclear accidents. It is a concern to us that the resolution to OPC still remains unresolved as of 2017. We note that there is no existing precedence where a safety issue was resolved by the Commission via a voluntary industry initiative.

Response 2

Since the receipt of the petition, the Commission issued an SRM which directs the NRC Staff to address the OPC safety concern by verifying licensee implementation of the voluntary industry initiative. The Staff is proceeding with this verification. Approximately 50% of the affected reactors have already installed an OPIS.

Comment 3

The OPC voluntary industry initiative is not adequate in addressing this significant safety issue in the nuclear power plants' electric power systems. The voluntary industry initiative issued on March 16, 2015 (ADAMS Accession No. ML15075A454) did not contain all applicable requirements and references to industry consensus standards for design requirements as well as clear acceptance criteria for licensees to design the OPC detection and protection schemes. The Petitioners also quote from an NRC letter dated November 25, 2014.

Response 3

The PRB notes that licensees have provided the NRC with extensive design information on their OPISs, including data from field tests. There are also design and engineering reports from the Electric Power Research Institute analyzing the industry designs. The NRC Staff has reviewed some of these designs. The PRB notes that the SRM directs the NRC Staff to address the OPC concern by verifying licensee implementation of the voluntary industry initiative, thereby superseding some of the information in the NRC letter of November 25, 2014. The technical question to be answered now is whether the OPISs are capable of detecting and alarming or isolating an OPC, not whether the OPIS is designed as a safety-related system. The NRC Staff will conduct onsite inspections to review the final OPIS installations.

Comment 4

The risk assessment in the proposed director's decision for the non-accident condition (an OPC without a simultaneous accident) has results for core damage frequency (CDF) that are too low, and inconsistent with the NRC safety goal of reducing quantitative CDF to less than 1×10^{-4} /year.

Response 4

The PRB notes that actual safety significance, and therefore CDF, can vary

widely depending on the facility, as different designs and different configurations can have a large effect on the CDF. However, as licensees implement their OPIS, the core damage frequency will drop significantly. The relatively simple operator action (or OPIS actuation) of opening the safety bus supply breaker (which will result in actuation of the onsite emergency power supply) can be done in the control room and will restore the capability of the safety bus to power safety equipment.

Comments from the Licensees

Comments were received from the Nuclear Energy Institute (NEI), on behalf of licensees, by letter dated October 16, 2017 (ADAMS Accession No. ML17291A846).

Comment 1

On page 6, the NRC provided a letter to NEI containing the *four* functional requirements for demonstrating compliance with existing regulatory requirements.

Response 1

Revised page 6, third paragraph, to say “The NRC also communicated *four* functional criteria. . . .”

Comment 2

On page 9, 10 C.F.R. § 50.55a(h)(2) and (3) is listed under the header of “Applicable NRC Regulatory Requirements and Guidance.” This section appears to set expectations that designs to address the OPC vulnerability should meet IEEE Class 1E requirements, which apply only to safety-related structures, systems, and components. The majority of stations are implementing Non-1E (nonsafety-related) OPC modifications, in accordance with the VII [voluntary industry initiative]. In our view, it is inappropriate to apply IEEE Standard Std. 279, or IEEE Std. 603, to an open phase isolation system installed on a Non-Class 1E circuit, because such systems do not scram or trip the reactor, or actuate an engineered safety feature. References to 10 C.F.R. § 50.55a(h)(2) and 10 C.F.R. § 50.55a(h)(3), along with IEEE Std. 279 and IEEE Std. 603 should be removed from this section.

Response 2

The PRB agrees that some OPISs installed on a Non-Class 1E circuit may be satisfactory without meeting IEEE Class 1E requirements. However, some licensees intend to install OPISs on Class 1E (safety-related) buses. The references are given to provide guidance where it applies.

Comment 3

Referring to page 9, open phase events and design basis events are independent and should not be considered simultaneously. This type of review has already been documented in GSI-171 [Generic Safety Issue-171] and clarification of independence of events should be clearly stated.

Response 3

Postulating an open phase condition simultaneously with a design basis event was done in the context of a probabilistic risk assessment of CDF. A valid calculation of CDF requires that all adverse conditions be evaluated. The PRB notes that GSI-171 (loss-of-coolant accident with a delayed loss of offsite power) was closed based on the NRC Staff's decision that the CDF was low enough that a backfit was not justified.

Comment 4

Referring to page 11, Oconee's response to NRC Bulletin 2012-01 (ADAMS Accession No. ML12300A426) stated open phase was not part of their original design and licensing basis. Modifications are not complete at this time; therefore, automatic alarms in the main control room (MCR) should not have been expected. Add to the Oconee event description that open phase was not part of Oconee's original design and licensing basis; therefore, automatic alarms in the MCR should not have been expected.

Response 4

The PRB acknowledges that although the Oconee response to Bulletin 2012-01 stated that:

In both voltage monitoring schemes, 230 kV and 4160 V, there are control room indications provided for a single phase condition (open circuit). The control room would receive annunciators and computer points of an under voltage condition on that phase, but no automatic trip would be initiated.

There was also a paragraph that stated:

However, in certain cases it is not known if the loss of phase would be detected by the current relaying protection schemes to give control room indication. In general, there will be no plant response for an unloaded (e.g., ESF [engineered safety features] buses normally aligned to unit auxiliary transformer) power source in the event of a single-phase open circuit on a credited off-site power circuit because there is insufficient current to detect a single-phase open circuit for this configuration.”

The alignment at Oconee during this event was with an unloaded power source. Therefore, we have removed the phrase “as expected by the licensee.”

Comment 5

Referring to page 11, Oconee’s response to NRC Bulletin 2012-01 provided the following information for Question 1:

In both voltage monitoring schemes, 230 kV and 4160 V, there are control room indications provided for a single phase condition (open circuit). The control room would receive annunciators and computer points of an under voltage condition on that phase, but no automatic trip would be initiated. The control room operators would respond per the appropriate Alarm Response Guide. See Attachment 3 Table 6 for associated alarms.

However, in certain cases it is not known if the loss of phase would be detected by the current relaying protection schemes to give control room indication. In general, there will be no plant response for an unloaded (e.g., ESF buses normally aligned to unit auxiliary transformer) power source in the event of a single-phase open circuit on a credited off-site power circuit because there is insufficient current to detect a single-phase open circuit for this configuration. . . .

The Oconee Bulletin 2012-01 RAI [Request for Additional Information] Response (ADAMS Accession No. ML14035A453) provided the following information for Response 1:

. . . ONS Operations personnel perform daily rounds of the switchyards. This is a general observation performed on the equipment to note any out of normal conditions and take appropriate actions. The daily switchyard rounds procedure was revised to incorporate specific points to look for areas of degraded off site power vulnerabilities.

As predicted in the bulletin response, control room alarms were not received due to the lack of current available because of the source being unloaded at the time

of the event. In addition, the RAI response provided an interim corrective action for operations staff to perform daily switchyard rounds which proved to be the method of discovery. The interim corrective actions in their entirety were put in place to allow adequate time for each station to assess specific vulnerabilities and to address them to the level appropriate. The results of these assessments will determine to what degree additional modifications are required.

It should be noted that the interim corrective actions implemented at Oconee were successful in discovering the open phase which prompted appropriate responses.

The following revision is suggested:

The fact that operators failed to receive alarms in the control room intended to alert them of an open phase condition during the December 7, 2015, event at Oconee highlights the need to assess potential vulnerabilities in order to respond and/or implement modifications accordingly per the NEI Initiative.

Response 5

The current sentence reads:

The fact that operators failed to receive alarms in the control room intended to alert them of an open phase condition during the December 7, 2015, event at Oconee highlights the importance of implementing permanent design changes at all affected facilities.

The PRB notes that this sentence refers to permanent design changes at all affected facilities. In order for a licensee to know whether a facility is affected, it would have to assess the facility's vulnerabilities. The PRB concludes that the current sentence is appropriate, since it expresses the agency's concern that this potential component failure be addressed at all affected facilities.

Comment 6

Referring to page 12, equating a design basis event to a loss of offsite power in the case of an OPC is incorrect due to the fact that disconnection of faulted offsite power circuits is the protective action. Generally, loss of offsite power is considered loss of the grid, and subsequent reliance on the standby power sources. An open phase is a fault that requires the upstream breaker to be opened to isolate the fault from onsite circuits. Recommend detailing the actual safety significance basis rather than the protective action.

Response 6

The PRB concludes that the current description is appropriate. If an operator's only reasonable choice for recovery is to open circuit breakers such that offsite power is lost and the onsite emergency power source (typically diesel generators) is activated, then the result is a loss of offsite power. The actual safety significance can vary widely depending on the facility, and the PRB considers it unnecessary in this forum to address the safety significance for each of the ninety-nine reactors currently licensed to operate.

Comment 7

Referring to page 12, excessive conservatism was included in the risk analysis. Actual risk has already been presented and discussed in public meetings. The NRC representatives indicated that this overly conservative analysis was only to be used for the methodology to determine real plant risks. Recommend removing specific risk values in the letter.

Response 7

The PRB notes that the risk analysis varies widely based on the specific design of each affected facility. However, as noted in Response 3, above, relative to GSI-171, there have been times that the NRC Staff determined that the CDF of a system response was low enough that a backfit would not be justified. The PRB revised the paragraph to remove specific risk values but still convey that the NRC Staff has determined that the CDF is high enough that corrective action is necessary for affected facilities.

Comment 8

Referring to page 13, use of visual inspection in conjunction with maintenance intervals is the standard method for ensuring many of the components in the plant protection system (PPS) have the capability to allow current to flow to the safety-related components. Recommend removing the inconsistent reference to automatic detection of the event.

Response 8

The PRB concurs with the NRC Staff's assessment that operating experience has demonstrated that visual inspection alone is likely to be inadequate at detecting an open phase condition in a timely manner. Based on the NRC special inspection conducted at Oconee following the OPC event, the licensee could not

identify if the open phase condition had existed for an hour or a day. Therefore, the reference to installing automatic detection for an OPC event is appropriate.

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AEROTEST OPERATIONS, INC.
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- Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-93-22, 38 NRC 98, 102 (1993)
movant carries the burden of demonstrating that summary disposition is appropriate and must explain in writing the basis for the motion; LBP-17-9, 86 NRC 184 (2017)
- Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 302 n.22 (1994)
to carry its burden of proof on environmental issues, NRC Staff must establish that its position is supported by a preponderance of the evidence; LBP-17-5, 86 NRC 17 (2017)
- Am. Bottom Conservancy v. U.S. Army Corps of Eng'rs*, 650 F.3d 652, 656 (7th Cir. 2011)
under judicially recognized concepts of standing, magnitude, as distinct from directness, of the injury is not critical to the concerns that underlie the requirement of standing; LBP-17-7, 86 NRC 84 (2017)
- AmerGen Energy Co.* (Oyster Creek Nuclear Generating Station), LBP-06-22, 64 NRC 229, 244 (2006)
boards do not adjudicate disputed facts at the contention admission stage; LBP-17-8, 86 NRC 150-51 (2017)
- Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249 (1986)
board's only role in deciding whether to grant a motion for summary disposition is to determine whether any genuine issue of material fact exists; LBP-17-9, 86 NRC 184 (2017)
- Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986)
evidence of opponent of summary disposition is to be believed, and all justifiable inferences are to be drawn in his favor; LBP-17-9, 86 NRC 184 (2017)
summary disposition should not be granted if it would require the board to make credibility determinations, weigh evidence, or draw legitimate inferences from the facts; LBP-17-9, 86 NRC 184 (2017)
- Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 156 (1991)
technical issue should be addressed after a contention is admitted; LBP-17-7, 86 NRC 120 (2017)
- Arkansas Power & Light Co.* (Arkansas Nuclear One Unit 2), ALAB-94, 6 AEC 25, 28 (1973)
presumption of administrative regularity applies to NRC Staff and state regulatory officials in execution of their official duties; LBP-17-5, 86 NRC 29 (2017)
- Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983)
NEPA seeks to ensure that an agency considers every significant aspect of the environmental impact of a proposed action and informs the public that it has, in fact, considered environmental concerns in its decisionmaking process; LBP-17-5, 86 NRC 15-16 (2017); LBP-17-9, 86 NRC 190 (2017)
- Blackhawk Heating & Plumbing Co. v. Driver*, 433 F.2d 1137, 1140 (D.C. Cir. 1970)
standing is a preliminary matter that does not go to the merits of the case; LBP-17-7, 86 NRC 76 n.77 (2017)
- Blue Ridge Envtl. Def. League v. NRC*, 716 F.3d 183, 188 (D.C. Cir. 2013)
issuance of a combined license is a major federal action requiring an environmental impact statement; LBP-17-5, 86 NRC 16 (2017)
- 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)
satisfaction of traditional test for standing in addition to requirements of proximity presumption is not required; LBP-17-7, 86 NRC 83 (2017)

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- traditional judicial standing concepts require a showing that the individual 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-17-8, 86 NRC 147 (2017)
- traditional test for standing requires that petitioner make a particularized showing of injury-in-fact caused by the challenged action; LBP-17-7, 86 NRC 82 (2017)
- 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 is presumed to have standing to intervene in combined license proceedings if petitioner lives within approximately 50 miles of the facility in question; LBP-17-6, 86 NRC 46-47 (2017)
- proximity, or geographic, presumption, dispenses with the need for petitioner who lives within 50 miles of the facility at issue to make an affirmative showing of injury, causation, and redressability in certain proceedings, including COL applications; LBP-17-6, 86 NRC 46 n.7 (2017)
- 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, 915-17 (2009)
- proximity presumption allows an individual or group living, having frequent contacts, or having a significant property interest within 50 miles of a nuclear power reactor to establish standing without the need to make an individualized showing of injury, causation, and redressability; LBP-17-7, 86 NRC 75 (2017)
- 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)
- geographic zone of potential harm zone for application of proximity presumption in power reactor construction and operating license proceedings is the area within a 50-mile radius of the site; LBP-17-8, 86 NRC 147-48 (2017)
- location of petitioner's office within the 10-mile plume exposure pathway EPZ means that it would face a realistic threat of harm if a release from the facility of radioactive material were to occur; LBP-17-7, 86 NRC 83 (2017)
- proximity presumption rests on licensing board 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; LBP-17-7, 86 NRC 75 (2017); LBP-17-8, 86 NRC 148 n.39 (2017)
- 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)
- location of petitioner's office within the 10-mile plume exposure pathway EPZ means that it would face a realistic threat of harm if a release from the facility of radioactive material were to occur; LBP-17-7, 86 NRC 75, 83 (2017)
- Campbell v. Minneapolis Pub. Hous. Auth.*, 168 F.3d 1069, 1074 (8th Cir. 1999)
- fundamental principle is that the ultimate merits of the case have no bearing on the threshold question of standing; LBP-17-7, 86 NRC 76 (2017)
- CFC Logistics, Inc.*, LBP-03-20, 58 NRC 311, 320 (2003)
- unlikely, yet plausible, scenario in which an accident of some sort could damage the armored pool containing the cobalt-60 at a food processing irradiator facility is a legitimate concern in the context of on operating license; LBP-17-7, 86 NRC 80 n.102 (2017)
- Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 90-96 (1993)
- proximity presumption applied even though the challenged license amendment affected only petitioner's right to request a hearing on any changes to the material specimen testing schedule that might be proposed at some future date; LBP-17-7, 86 NRC 81 (2017)
- Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993)
- traditional judicial standing concepts require a showing that the individual 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-17-7, 86 NRC 74 (2017); LBP-17-8, 86 NRC 147 (2017)

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- Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753-54 (1977)
board has authority to deny a motion for summary disposition if it finds there is a material fact in dispute, even if the opposing party fails to make any claim that there is a material fact in dispute; LBP-17-9, 86 NRC 195 n.169 (2017)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 191 (1999)
Commission has rejected proximity standing for license amendments associated with shutdown and defueled reactors; LBP-17-7, 86 NRC 81, 82 n.113 (2017)
individual is presumed to have standing to intervene without the need to address traditional judicial standing concepts upon a showing that he or she lives within, or otherwise has frequent contacts with, a geographic zone of potential harm; LBP-17-8, 86 NRC 147 (2017)
petitioner in a license amendment case cannot base standing simply on a residence or visits near the plant, unless the proposed action quite obviously entails an increased potential for offsite consequences; LBP-17-7, 86 NRC 75 (2017)
proximity presumption applies if the proposed action quite obviously entails an increased potential for offsite consequences; LBP-17-8, 86 NRC 147 n.38 (2017)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 192 (1999)
to establish standing, it is sufficient that petitioner has identified some plausible chain of causation, some scenario suggesting how particular license amendments would result in a distinct new harm or threat to petitioner; LBP-17-7, 86 NRC 80 (2017)
- Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), LBP-98-27, 48 NRC 271, 277 (1998), *aff'd*, CLI-99-4, 49 NRC 185 (1999), *petition for review denied*
obvious potential for offsite consequences in license amendment cases requires that the kind of action at issue, when considered in light of the radioactive sources at the plant, justifies a presumption that the licensing action could plausibly lead to the offsite release of radioactive fission products from the reactors; LBP-17-7, 86 NRC 82 (2017)
- Concrete Pipe & Prods. of California, Inc. v. Constr. Laborers Pension Tr. for S. California*, 508 U.S. 602, 622 (1993)
preponderance of the evidence standard requires the trier of fact to believe that existence of a fact is more probable than its nonexistence; LBP-17-5, 86 NRC 17 (2017)
- Connecticut Bankers Ass'n v. Bd. of Governors*, 627 F.2d 245, 251 (D.C. Cir. 1980)
support required for contention admission is a minimal showing that material facts are in dispute, thereby demonstrating that an inquiry in depth is appropriate; LBP-17-8, 86 NRC 151 (2017)
- Conservation Council of North Carolina v. Costanzo*, 505 F.2d 498, 501 (4th Cir. 1974)
under judicially recognized concepts of standing, magnitude, as distinct from directness, of the injury is not critical to the concerns that underlie the requirement of standing; LBP-17-7, 86 NRC 84 (2017)
- Consolidated Edison Co. of New York* (Indian Point, Unit 2), LBP-82-25, 15 NRC 715, 728 (1982)
representational standing can be established without an authorization affidavit or declaration when the petition has been signed by a ranking official of the organization who herself has standing; LBP-17-7, 86 NRC 86, 88-89 (2017)
- Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 409 (2007)
organization may represent the interests of its members using representational standing if it can 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, and show that it is authorized by that member to request a hearing on his or her behalf and that neither the claim asserted nor the relief requested requires an individual member's participation in the organization's legal action; LBP-17-8, 86 NRC 147 n.35 (2017)
- Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 409-10 (2007)
requirement to provide affidavits from individual members applies when the organization asserts standing to represent the interests of those members; LBP-17-7, 86 NRC 78 (2017)

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- Consumers Energy Co.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 411 (2007)
organization is like an individual in its entitlement to benefit of the proximity presumption because an organization, like an individual, is considered a “person” as defined in 10 C.F.R. 2.4; LBP-17-7, 86 NRC 75, 82 (2017)
organization seeking to intervene in its own right must satisfy the same standing requirements of injury, traceability, and redressability as an individual seeking to intervene; LBP-17-7, 86 NRC 74 (2017)
- Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-283, 2 NRC 11, 17 (1975)
applicant bears the burden of proof in NRC licensing proceedings involving safety-related contentions; LBP-17-5, 86 NRC 17 (2017)
- Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974)
board refuses to apply rules of procedure in an overly formalistic manner; LBP-17-6, 86 NRC 50 n.10 (2017); LBP-17-7, 86 NRC 115 n.356 (2017)
- Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), LBP-16-7, 83 NRC 340, 371 (2016)
NRC Staff has been much better served when, instead of just checking the boxes to meet some procedural minimum, it has worked with Indian tribes to comply with the substance of NEPA and the NHPA; LBP-17-9, 86 NRC 190, 206 (2017)
- Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), LBP-16-7, 83 NRC 340, 375 (2016)
NRC Staff leadership must attend any meeting alongside tribal leadership for such a meeting to constitute government-to-government consultation; LBP-17-9, 86 NRC 189 (2017)
- Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), LBP-16-7, 83 NRC 340, 381-83 (2016)
board found that while NRC Staff’s initial efforts were inadequate to satisfy the NHPA consultation requirement, by finally offering an in-person meeting with high-level NRC management officials, NRC Staff had met its obligations; LBP-17-9, 86 NRC 188-89 (2017)
- Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, Nebraska), LBP-16-7, 83 NRC 340, 383 (2016)
NHPA does not empower an Indian tribe to delay or stall a licensing proceeding just because the tribe dislikes the possible outcome of the consultation process; LBP-17-9, 86 NRC 189 (2017)
- Crow Butte Resources, Inc.* (Marsland Expansion Area), CLI-14-2, 79 NRC 11, 13-14 (2014)
unless an appeal demonstrates an error of law or abuse of discretion, the Commission generally defers to the board on contention admissibility rulings; CLI-17-12, 86 NRC 219 (2017)
- Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 552 n.79 (2009)
boards have authority to reformulate contentions in order to consolidate multiple similar contentions, trim out extraneous or inadmissible portions of contentions, and clarify issues; LBP-17-7, 86 NRC 126-27 (2017)
- Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 552-53 (2009)
licensing boards are expected to reformulate contentions to eliminate extraneous issues or to consolidate issues for a more efficient proceeding; LBP-17-7, 86 NRC 92 (2017)
licensing boards have authority to hold conferences in order to simplify and clarify petitioner’s contentions for adjudication; LBP-17-7, 86 NRC 125 (2017)
- Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 553 n.79 (2009)
Commission cited with approval its legal analysis of board authority to rewrite contentions; LBP-17-7, 86 NRC 129 (2017)
- Crow Butte Resources, Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 572 (2009)
scope of mandatory disclosures is wide-reaching; LBP-17-9, 86 NRC 207 (2017)
- Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, No. 2:14-cv-00226-APG-VCF, No. 2:14-cv-00228-APG-VCF, 2017 WL 3667700, at *54-55 (D. Nev. Aug. 23, 2017)
agencies routinely rely on qualified agency social scientists as trained ethnographers to carry out cultural surveys and analysis, with significant input, participation, and consultation from relevant tribes, without any mandate that a certain tribe conduct the survey; LBP-17-9, 86 NRC 196 n.174 (2017)

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- Dienethal v. NRC*, 203 F.3d 52 (D.C. Cir. 2000)
obvious potential for offsite consequences in license amendment cases requires that the kind of action at issue, when considered in light of the radioactive sources at the plant, justifies a presumption that the licensing action could lead to the offsite release of radioactive fission products from the reactors; LBP-17-7, 86 NRC 82 (2017)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 213 (2003)
contentions cannot be based on speculation but must have some reasonably specific factual or legal basis; CLI-17-12, 86 NRC 220 (2017)
- Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsideration denied*, CLI-02-1, 55 NRC 1 (2002)
contention admission standard of 10 C.F.R. 2.309(f)(1) is strict by design; LBP-17-6, 86 NRC 49 (2017); LBP-17-8, 86 NRC 150 (2017)
- Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 235-36 (2007)
incomplete information at the early site permit stage is not a flaw in an environmental document provided the drafter sets forth and evaluates such information that does exist; LBP-17-8, 86 NRC 161 n.133 (2017)
- DTE Electric Co.* (Fermi Nuclear Power Plant, Unit 2), CLI-15-18, 82 NRC 135 (2015)
board may not provide any legal support or a reasoned basis or explanation for a conclusion not provided by petitioners or connect arguments or support from separate contentions in a manner that is not clearly and explicitly pleaded by the petitioner; LBP-17-7, 86 NRC 90-91 (2017)
- DTE Electric Co.* (Fermi Nuclear Power Plant, Unit 2), CLI-15-18, 82 NRC 135, 145-46 (2015)
although boards may reformulate contentions, petitioner must provide the information necessary to satisfy the admissibility criteria; LBP-17-7, 86 NRC 92 (2017)
- DTE Electric Co.* (Fermi Nuclear Power Plant, Unit 2), CLI-15-18, 82 NRC 135, 147 (2015)
for any new arguments or new support for a contention, petitioner must, among other things, explain why it could not have raised the argument or introduced the factual support earlier; CLI-17-12, 86 NRC 225 n.59 (2017)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334 (1999)
contention admissibility criteria are the result of a major rule change that sought to toughen NRC rules in a conscious effort to raise the threshold bar for an admissible contention; LBP-17-8, 86 NRC 150 (2017)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 335 (1999)
Commission's intent in revising contention admissibility requirements was not to put up a fortress to deny intervention, but rather to ensure that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions; LBP-17-8, 86 NRC 150 (2017)
- Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 345 (1999)
licensing boards should not accept in individual license proceedings contentions that are or are about to become the subject of general rulemaking by the Commission; LBP-17-7, 86 NRC 110 (2017); LBP-17-8, 86 NRC 157 n.107 (2017)
- Duke Power Co.* (Amendment to Materials License SNM-1773 — Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station), ALAB-528, 9 NRC 146, 151 (1979)
it has been enough for standing purposes that the petition has been signed by a ranking official of the organization who himself had the requisite personal interest to support an intervention petition; LBP-17-7, 86 NRC 86 n.145 (2017)
- Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 468 (1982), *vacated in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983)
petitioners have an ironclad obligation to raise issues in licensing proceedings as soon as the information becomes available to them; LBP-17-8, 86 NRC 162 (2017)
- Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790 (1985)
hearing notices are the means by which the Commission identifies the subject matter of the hearings and delegates to the boards the authority to conduct proceedings; LBP-17-7, 86 NRC 97 (2017)

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- Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1049 (1983)
filing of an environmental concern based on the environmental report will not be deferred because NRC Staff may provide a different analysis in its environmental impact statement; LBP-17-8, 86 NRC 163 (2017)
NRC Staff bears the burden of proof in proceedings involving NEPA contentions because it has the statutory obligation of complying with NEPA; LBP-17-5, 86 NRC 17 (2017)
NRC Staff's assurances are not a proper basis for rejecting a contention prior to issuance of the environmental impact statement; LBP-17-8, 86 NRC 164-65 (2017)
- Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1049, 1053 (1983)
participants must file environmental contentions based on applicant's environmental report so that environmental issues can be resolved at the earliest possible time, even before NRC issues an environmental impact statement; LBP-17-8, 86 NRC 162-63 (2017)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 297 (2010)
standards governing summary disposition in Subpart L proceedings are based upon those federal courts apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure; LBP-17-9, 86 NRC 183 (2017)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315 (2010)
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NEPA should be construed in the light of reason if it is not to demand virtually infinite study and resources; LBP-17-5, 86 NRC 24 (2017)
while there will always be more data that could be gathered, agencies must have some discretion to draw the line and move forward with decisionmaking; LBP-17-5, 86 NRC 22 (2017); LBP-17-9, 86 NRC 191, 199 (2017)
- Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 316 (2010)
NEPA allows agencies to select their methodology as long as that methodology is reasonable; LBP-17-5, 86 NRC 24 (2017); LBP-17-9, 86 NRC 191, 195 (2017)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 258-59 (2008)
organization may intervene based on the interests, germane to the purpose of the organization, of a member or members injured by the proposed actions; LBP-17-7, 86 NRC 74 (2017)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 261-62 (2008)
petitioner cannot attach an authorization affidavit for standing to its reply because this would deprive the opposing party of the opportunity to challenge the sufficiency of the affidavit; LBP-17-7, 86 NRC 87 (2017)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 262 (2008)
petitioners' reply may not attempt to backstop elemental deficiencies in their original petition to intervene; CLI-17-12, 86 NRC 225 (2017); LBP-17-6, 86 NRC 45 (2017)
- Entergy Nuclear Operations, Inc., and Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 264 (2008)
not even inherently representative organizations qualify for automatic standing, but instead must satisfy certain requirements before being permitted to represent others; LBP-17-7, 86 NRC 85 (2017)
- Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-15-20, 82 NRC 211, 230 (2015)
section 2.206 provides a process for stakeholders to advance concerns and obtain full or partial relief, or written reasons why the requested relief is not warranted; LBP-17-6, 86 NRC 54 n.16 (2017)
- Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-07-12, 65 NRC 203, 205 (2007)
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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)
proximity standing rests on the presumption that an accident associated with the nuclear facility could adversely affect the health and safety of people working or living offsite but within a certain distance of that facility; LBP-17-7, 86 NRC 82 (2017)
under the proximity presumption, petitioner need not expressly establish the traditional standing elements of injury, causation, or redressability; LBP-17-7, 86 NRC 82, 83 (2017)
whether and at what distance petitioner can be presumed to be affected must be judged on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source; LBP-17-7, 86 NRC 76 (2017)
- 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 ruling on proximity standing, board must decide whether petitioner is located within an appropriate radius of the plant, considering the nature of the proposed action and the significance of the radioactive source; LBP-17-7, 86 NRC 81 (2017)
- 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)
Commission has rejected proximity standing for license transfers; LBP-17-7, 86 NRC 81 (2017)
obvious potential for offsite consequences in license amendment cases requires that the kind of action at issue, when considered in light of the radioactive sources at the plant, justifies a presumption that the licensing action could plausibly lead to the offsite release of radioactive fission products from the reactors; LBP-17-7, 86 NRC 82, 83 (2017)
petitioner has the burden to show that the proximity presumption should apply; LBP-17-7, 86 NRC 75 (2017)
- 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)
when the Commission has found no obvious potential for offsite consequences, it has been because there were no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel; LBP-17-7, 86 NRC 81 (2017)
- Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003)
mere notice pleading is insufficient for admission of a contention; LBP-17-8, 86 NRC 150 (2017)
- Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989)
living within a specific distance from a nuclear power plant is enough to confer standing on an individual or group in proceedings for construction permits, operating licenses, or significant amendments thereto; LBP-17-7, 86 NRC 74-75 & n.62 (2017)
- Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329-30 (1989)
Commission has rejected proximity standing for certain changes to worker-protection requirements; LBP-17-7, 86 NRC 81 (2017)
proximity presumption applies if the proposed action quite obviously entails an increased potential for offsite consequences; LBP-17-8, 86 NRC 147 n.38 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 528, *aff'd in relevant part*, CLI-91-13, 34 NRC 185, 187-88 (1991)
organization seeking to intervene in its own right must satisfy the same standing requirements of injury, traceability, and redressability as an individual seeking to intervene; LBP-17-7, 86 NRC 74 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 529 (1991)
regardless of whether intervention petitioner is an individual or an organization, the same showing is required for standing; LBP-17-7, 86 NRC 75 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 394 (2015)
burden of setting forth a clear and coherent argument for standing is on petitioner, but a pro se petitioner is not held to the same standards of clarity and precision to which a lawyer might

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- reasonably be expected to adhere; LBP-17-7, 86 NRC 77 n.79 (2017); LBP-17-8, 86 NRC 146 n.26 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 397 (2015)
- pro se petitioners are not held to the same standards as parties represented by counsel; LBP-17-7, 86 NRC 91 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 401 (2015)
- board did not supply its own basis for a contention but reasonably reformulated it to clarify the issue for hearing; LBP-17-7, 86 NRC 129 n.455 (2017)
- licensing boards are expected to reformulate contentions to eliminate extraneous issues or to consolidate issues for a more efficient proceeding; LBP-17-7, 86 NRC 91 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-15-25, 82 NRC 389, 401-02 (2015)
- boards may consider the readily apparent legal implications of a pro se petitioner's arguments, even if not expressly stated in the petition; LBP-17-7, 86 NRC 92 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-81-16, 13 NRC 1115, 1120 (1981)
- where the Commission has referred a proceeding to the Atomic Safety and Licensing Board Panel without limitations, the board operates under the same scope of review as the Commission; LBP-17-7, 86 NRC 98 n.229 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 150, *aff'd*, CLI-01-17, 54 NRC 3 (2001)
- under the proximity presumption, petitioner need not expressly establish the traditional standing elements of injury, causation, or redressability; LBP-17-7, 86 NRC 82 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-15-13, 81 NRC 456, 468 (2015)
- if one contention were merely a restatement of another, it would be rejected as duplicative; LBP-17-7, 86 NRC 108 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-15-13, 81 NRC 456, 472 (2015)
- board will not require procedural formalism from a pro se petitioner in order to reject an otherwise valid contention; LBP-17-7, 86 NRC 114-15 (2017)
- Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 6 and 7), LBP-16-3, 83 NRC 169, 176 (2016)
- board's role in summary disposition should not require it to conduct a trial on the written record by weighing the evidence and endeavoring to determine the truth of the matter; LBP-17-9, 86 NRC 184 (2017)
- Food & Water Watch, Inc. v. Vilsack*, 808 F.3d 905, 919 (D.C. Cir. 2015)
- frustration of an organization's objectives is the type of abstract concern that does not impart standing; LBP-17-7, 86 NRC 83 (2017)
- organization's ability to provide services has been perceptibly impaired when the defendant's conduct inhibits the organization's daily operations; LBP-17-7, 86 NRC 83 (2017)
- Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC) Inc.*, 528 U.S. 167, 181 (2000)
- association has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, interests at stake are germane to organization's purpose, and neither the claim asserted nor the relief requested requires participation of individual members in the lawsuit; LBP-17-8, 86 NRC 147 n.35 (2017)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 115 (1995)
- boards are to construe petition in favor of petitioner when determining whether petitioner has demonstrated standing; LBP-17-7, 86 NRC 77 (2017); LBP-17-8, 86 NRC 148 (2017)
- contemporaneous judicial concepts of standing require a showing of a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision; LBP-17-7, 86 NRC 74 (2017); LBP-17-8, 86 NRC 147 (2017)

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- organization may establish standing either in its own right or as a representative for an individual; LBP-17-7, 86 NRC 74 (2017)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 116-17 (1995)
- in ruling on proximity standing, board must decide whether petitioner is located within an appropriate radius of the plant, considering the nature of the proposed action and the significance of the radioactive source; LBP-17-7, 86 NRC 75-76, 81, 83 (2017)
- petitioner had standing under the proximity presumption is a case involving relicensing of a research reactor that did not involve new construction; LBP-17-7, 86 NRC 81 (2017)
- whether and at what distance petitioner can be presumed to be affected must be judged on a case-by-case basis; LBP-17-7, 86 NRC 75-76 (2017)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), CLI-95-12, 42 NRC 111, 117 (1995)
- petitioner had standing under the proximity presumption despite licensee's argument that hypothetical accident scenarios underlying the standing argument were incredible because they would first require three independent redundant safety systems to fail; LBP-17-7, 86 NRC 80 (2017)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 286, *aff'd*, CLI-95-12, 42 NRC 111 (1995)
- board must accept as true all material allegations of the intervention petition; LBP-17-7, 86 NRC 76 (2017)
- Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 286-87, *aff'd*, CLI-95-12, 42 NRC 111, 115-16 (1995)
- office location as well as a residence may serve as the basis of standing under the proximity presumption; LBP-17-7, 86 NRC 78 (2017)
- Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), CLI-92-3, 35 NRC 63, 67 (1992)
- appellant must point out the errors in the board's decision; CLI-17-12, 86 NRC 219 (2017)
- recitation of appellant's prior positions in a proceeding or statement of general disagreement with a decision's result is not sufficient to demonstrate an error of law or abuse of discretion; CLI-17-12, 86 NRC 219 (2017)
- GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 202 (2000)
- organization claiming representational standing must provide an affidavit specifically authorizing the organization to represent the interests of a named member; LBP-17-7, 86 NRC 85 n.141 (2017)
- GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000)
- petitioners may not rely on bare assertions and speculation to support their proffered contention; LBP-17-6, 86 NRC 53 (2017)
- Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 51 (1994)
- factual support required for contention admission need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand a summary disposition motion; LBP-17-7, 86 NRC 102 (2017); LBP-17-8, 86 NRC 151 (2017)
- support required for contention admission is a minimal showing that material facts are in dispute, thereby demonstrating that an inquiry in depth is appropriate; LBP-17-8, 86 NRC 151 (2017)
- Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 396 (1979)
- in some instances, representational authorization of a member with personal standing might be presumed; LBP-17-7, 86 NRC 85 n.142 (2017)
- Hunt v. Washington State Apple Advert. Comm'n*, 432 U.S. 333, 343 (1977)
- association has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, interests at stake are germane to organization's purpose, and neither the claim asserted nor the relief requested requires participation of individual members in the lawsuit; LBP-17-8, 86 NRC 147 n.35 (2017)
- organization may intervene based on the interests, germane to the purpose of the organization, of a member or members injured by the proposed actions; LBP-17-7, 86 NRC 74 (2017)

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- Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 53 (2001)
in an NRC adjudicatory hearing, even if a board finds the environmental impact statement inadequate in some respects, the board's findings and adjudicatory record become, in effect, part of the final supplemental environmental impact statement; LBP-17-9, 86 NRC 192 (2017)
- Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 71 (2001)
one can always flyspeck a final environmental impact statement to come up with more specifics and more areas of discussion that conceivably could have been included; LBP-17-5, 86 NRC 26 (2017)
- Kelly v. Selin*, 42 F.3d 1501, 1507-08 (6th Cir. 1995)
board must accept as true all material allegations of the intervention petition; LBP-17-7, 86 NRC 76 (2017)
- LaFleur v. Whitman*, 300 F.3d 256, 270-71 (2d Cir. 2002)
under judicially recognized concepts of standing, magnitude, as distinct from directness, of the injury is not critical to the concerns that underlie the requirement of standing; LBP-17-7, 86 NRC 84 (2017)
- Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 745 (3rd Cir. 1989)
agencies need not consider risks that are remote and speculative or events that have a very low probability of occurring; LBP-17-9, 86 NRC 191 (2017)
- Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 754-55 (3d Cir. 1989)
agencies need not consider risks that are remote and speculative or events that have a very low probability of occurring; LBP-17-5, 86 NRC 16 (2017)
- Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-91-39, 34 NRC 273, 282 (1991)
contentions in license amendment proceeding must focus on the issues identified in the hearing notice, the license amendment application, and NRC Staff's environmental responsibilities relating to the application; LBP-17-7, 86 NRC 97, 133 (2017)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-25, 60 NRC 223, 224-25, reconsideration denied, CLI-04-35, 60 NRC 619 (2004)
for any new arguments or new support for a contention, petitioner must, among other things, explain why it could not have raised the argument or introduced the factual support earlier; CLI-17-12, 86 NRC 225 n.59 (2017)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005)
NEPA does not call for certainty or precision, but an estimate of anticipated (not unduly speculative) impacts; LBP-17-5, 86 NRC 16 (2017)
- Louisiana Energy Services, L.P.* (National Enrichment Facility), LBP-05-13, 61 NRC 385, 404 (2005)
board's ultimate NEPA judgments are made on the basis of the entire adjudicatory record in addition to the NRC Staff's final supplemental environmental impact statement; LBP-17-9, 86 NRC 192 (2017)
- Lujan v. Defs. of Wildlife*, 504 U.S. 555, 559-61 (1992)
traditional judicial standing concepts require a showing that the individual 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-17-8, 86 NRC 147 (2017)
- Lujan v. Defs. of Wildlife*, 504 U.S. 555, 561 (1992)
at the pleading stage, general factual allegations of injury resulting from defendant's conduct may suffice, and the court presumes that general allegations embrace the specific facts that are necessary to support the claim; LBP-17-7, 86 NRC 76 n.77 (2017)
at the pleading stage, it is generally sufficient if petitioner provides plausible factual allegations that satisfy each element of standing; LBP-17-7, 86 NRC 76 (2017)
contemporaneous judicial concepts of standing require a showing of a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision; LBP-17-7, 86 NRC 74 (2017)
- Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 374 (1989)
NEPA requires that an agency take a hard look at the environmental consequences of a planned action; LBP-17-5, 86 NRC 16 (2017); LBP-17-9, 86 NRC 191 (2017)

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- Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973)
boards do not adjudicate disputed facts at the contention admission stage; LBP-17-8, 86 NRC 150-51 (2017)
- Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 805 (9th Cir. 1999)
federal agency must with consult a State Historic Preservation Officer and seek the approval of the Advisory Council on Historic Preservation to avoid or mitigate any adverse effects of an undertaking on any eligible historic properties found; LBP-17-9, 86 NRC 185 (2017)
- Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1324-25 (D.C. Cir. 2015)
under NEPA's hard look standard, an agency's analysis is adequate if it contains sufficient discussion of the relevant issues and opposing viewpoints, and the agency's decision is fully informed and well considered; LBP-17-5, 86 NRC 26 (2017)
- Nat'l Taxpayers Union, Inc. v. United States*, 68 F.3d 1428, 1433 (D.C. Cir. 1995)
frustration of an organization's objectives is the type of abstract concern that does not impart standing; LBP-17-7, 86 NRC 83 (2017)
- Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 354 (1975)
board may decide a contention admissibility issue on a theory different from that argued by litigants, provided that it explains the specific basis of its ruling and gives litigants a chance to present argument and, where appropriate, evidence regarding the board's new theory; LBP-17-7, 86 NRC 129 n.456 (2017)
- Nieves-Villanueva v. Soto-Rivera*, 133 F.3d 92, 99-100 (1st Cir. 1997)
exception to excluding expert testimony on purely legal issues is for questions of foreign law; LBP-17-8, 86 NRC 165 n.157 (2017)
- Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 44 (1978)
prior to license issuance, NRC must find reasonable assurance that activities authorized by an amendment can be conducted without endangering health and safety of the public and are in compliance with Commission regulations; LBP-17-7, 86 NRC 98 n.230 (2017)
- Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 55-56 (1978)
board may decide a contention admissibility issue on a theory different from that argued by litigants, provided that it explains the specific basis of its ruling and gives litigants a chance to present argument and, where appropriate, evidence regarding the board's new theory; LBP-17-7, 86 NRC 129 n.456 (2017)
- NRDC v. Hodel*, 865 F.2d 288, 294 (D.C. Cir. 1988)
NEPA should be construed in the light of reason if it is not to demand virtually infinite study and resources; LBP-17-5, 86 NRC 24 (2017)
- NRDC v. Morton*, 458 F.2d 827, 834 (D.C. Cir. 1972)
NEPA's requisite hard look is subject to a rule of reason; LBP-17-5, 86 NRC 16 (2017); LBP-17-9, 86 NRC 191 (2017)
- Nuclear Innovation North America LLC* (South Texas Project, Units 3 and 4), LBP-11-25, 74 NRC 380, 397 (2011)
petitioner at the contention admission stage need not set forth all evidence on which it may rely at later stages of the proceeding; LBP-17-7, 86 NRC 102 n.261 (2017)
- Nuclear Management Co., LLC* (Palisades Nuclear Plant), CLI-06-17, 63 NRC 727, 732 (2006)
introduction of new arguments in a reply is prohibited when doing so would unfairly deprive other participants of an opportunity to rebut the new claims; LBP-17-7, 86 NRC 88 (2017)
petitioner cannot remediate a deficiency by introducing documents in its reply that were available to it during the time frame for initially filing contentions; CLI-17-12, 86 NRC 225 (2017); LBP-17-6, 86 NRC 45-46 (2017)
petitioner need not introduce at the contention phase every document on which it will rely in a hearing; LBP-17-6, 86 NRC 45-46 (2017)
petitioners' reply may not attempt to backstop elemental deficiencies in their original petition to intervene; LBP-17-6, 86 NRC 45-46 (2017)

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- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 442 & n.81 (2011)
requirement to demonstrate a genuine dispute of material fact at the summary disposition stage requires a more rigorous evidentiary showing than that required to establish an admissible contention; LBP-17-7, 86 NRC 102 (2017)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427, 443 (2011)
at the contention admissibility stage, boards do not decide which side has the better argument on the merits; LBP-17-7, 86 NRC 125 (2017)
- Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-16-9, 83 NRC 472, 482 (2016)
unless an appeal demonstrates an error of law or abuse of discretion, the Commission generally defers to the board on contention admissibility rulings; CLI-17-12, 86 NRC 219 (2017)
- Parker v. District of Columbia*, 478 F.3d 370, 377 (D.C. Cir. 2007), *aff'd sub nom. District of Columbia v. Heller*, 554 U.S. 570 (2008)
when considering whether plaintiff has Article III standing, a federal court must assume arguendo the merits of his or her legal claim; LBP-17-7, 86 NRC 76 n.75 (2017)
- People for the Ethical Treatment of Animals v. USDA*, 797 F.3d 1087, 1094 (2015)
organization's ability to provide services has been perceptibly impaired when the defendant's conduct causes an inhibition of the organization's daily operations; LBP-17-7, 86 NRC 83 (2017)
- Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 21 (1974)
Commission's intent in revising contention admissibility requirements was not to put up a fortress to deny intervention; LBP-17-8, 86 NRC 150 (2017)
- Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974)
licensing boards should not accept in individual license proceedings contentions that are or are about to become the subject of general rulemaking by the Commission; LBP-17-8, 86 NRC 157 n.107 (2017)
- Powertech (USA), Inc.* (Dewey-Burdock In Situ Uranium Recovery Facility), CLI-16-20, 84 NRC 219, 231 (2016)
petitioner generally will not be allowed to belatedly challenge a defect in an environmental impact statement that should have been apparent from the applicant's environmental report; LBP-17-8, 86 NRC 163 n.145 (2017)
- PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 138 (2010)
standing can only be determined based on the pleadings in the case at hand; LBP-17-7, 86 NRC 86 n.145 (2017)
- PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-7, 71 NRC 133, 139-40 (2010)
petitioner may provide additional facts and/or argument related to standing in its reply, provided that the new information is reasonably related to the allegations originally presented; LBP-17-7, 86 NRC 87, 88 (2017)
petitioner who made only vague and generalized claims supporting his argument for proximity standing had the opportunity to cure on reply the defects in his initial petition; LBP-17-7, 86 NRC 87 (2017)
- Private Fuel Storage, LLC*. (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999)
associational standing, generally referred to as representational standing, requires that at least one injured member authorize the organization to represent the member's interests; LBP-17-7, 86 NRC 74 (2017)
- Private Fuel Storage, LLC*. (Independent Spent Fuel Storage Installation), CLI-01-12, 53 NRC 459, 470 (2001)
although exemption requests themselves do not ordinarily confer hearing rights on interested third parties, exemption requests that are a direct part of an initial licensing or licensing amendment action do; LBP-17-8, 86 NRC 152 (2017)

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- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-12, 53 NRC 459, 472 (2001)
safety-related contentions must challenge the adequacy of a license application, not the adequacy of the NRC Staff's review of that application; LBP-17-6, 86 NRC 49 n.10 (2017)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-25, 56 NRC 340, 349 (2002)
NEPA does not require NRC Staff to analyze every conceivable aspect of a proposed project; LBP-17-5, 86 NRC 16 (2017); LBP-17-9, 86 NRC 191 (2017)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-4, 59 NRC 31, 45 (2004)
petitioner generally will not be allowed to belatedly challenge a defect in an environmental impact statement that should have been apparent from the applicant's environmental report; LBP-17-8, 86 NRC 163 n.145 (2017)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 139 (2004)
petitioner does not have to prove its contentions at the admissibility stage; LBP-17-8, 86 NRC 150 (2017)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179 (1998), *aff'd*, CLI-98-13, 48 NRC 26 (1998)
board will not reject a contention filed by a pro se petitioner because it did not use specific words to connect its allegations to NRC Staff's ultimate findings; LBP-17-7, 86 NRC 114 (2017)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179-80 (1998), *aff'd*, CLI-98-13, 48 NRC 26 (1998)
contention must provide a significant link between the claimed deficiency in the application and the agency's ultimate determination whether applicant will adequately protect the health and safety of the public and the environment; LBP-17-7, 86 NRC 97 (2017)
- Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 180 (1998), *aff'd*, CLI-98-13, 48 NRC 26 (1998)
claim that, because of the alleged misunderstanding of the effects of alkali-silica reaction, significant concrete degradation may go unnoticed is sufficient to establish a link between the claimed deficiency and the agency's ultimate determination whether applicant will adequately protect the health and safety of the public; LBP-17-7, 86 NRC 106 (2017)
- Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-09-30, 70 NRC 1039, 1046 (2009)
because mandatory disclosures are the only form of discovery in Subpart L proceedings, they cover a vast array of information and documents that are not evidence and need not meet the requirements of admissible evidence; LBP-17-9, 86 NRC 207 (2017)
- Progress Energy Florida, Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-11-31, 74 NRC 643, 648 (2011)
to grant summary disposition, board must determine if any material facts remain genuinely in dispute, and, if no such disputes remain, the board must determine if the movant's legal position is correct; LBP-17-9, 86 NRC 184 (2017)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 10 & n.14 (1978)
argument challenging applicant's financial capacity is particularly deficient in light of the assumed financial stability of established utilities under NRC regulations; LBP-17-6, 86 NRC 53 n.15 (2017)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 18 (1978)
financial qualification showing does not require demonstration of near certainty that applicant will never be pressed for funds in the course of construction, but instead requires only that applicant have a reasonable financing plan in the light of relevant circumstances; CLI-17-12, 86 NRC 222-23 n.42 (2017); LBP-17-6, 86 NRC 53 (2017)
- Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 21 (1978)
anticipated difficulties in raising funds are relevant to the reasonable assurance determination, but a showing of some potential difficulty would not necessarily preclude that determination, all other relevant factors taken into account; CLI-17-12, 86 NRC 222-23 n.42 (2017)

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- Public Service Electric and Gas Co.* (Salem Nuclear Generating Station, Units 1 and 2), ALAB-136, 6 AEC 487, 489 (1973)
pro se petitioners are not held to the same standards of clarity and precision to which a lawyer might reasonably be expected to adhere; LBP-17-8, 86 NRC 146 n.26 (2017)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)
NEPA requirement to prepare an environmental impact statement ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; LBP-17-5, 86 NRC 16 (2017)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989)
if adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs; LBP-17-5, 86 NRC 16 (2017)
NEPA itself does not mandate particular results, but simply prescribes the necessary process; LBP-17-5, 86 NRC 16 (2017)
- Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989)
although NEPA establishes a national policy in favor of protecting the environment, it does not require the agency to select the most environmentally benign alternative, but rather merely prohibits uninformed, rather than unwise, agency action; LBP-17-5, 86 NRC 16 (2017)
- Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 206 (1993)
raised threshold incorporated into contention rule must be reasonably applied and is not to be mechanically construed; LBP-17-7, 86 NRC 115 n.356 (2017)
- Sequoyah Fuels Corp.* (Gore, Oklahoma Site Decommissioning), CLI-01-2, 53 NRC 9, 15 (2001)
standing is a threshold legal question that does not require an assessment of the petitioner's case on the merits; LBP-17-7, 86 NRC 76 (2017)
- Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 (1994)
proximity presumption applies to persons who have frequent contacts in the area near a nuclear power plant; LBP-17-7, 86 NRC 75 n.63 (2017)
- Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site Decontamination and Decommissioning Funding), LBP-94-5, 39 NRC 54, 68 (1994), *aff'd*, CLI-94-12, 40 NRC 64 (1994)
boards are to avoid the familiar trap of confusing the standing determination with the assessment of petitioner's case on the merits; LBP-17-7, 86 NRC 76 (2017)
- Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-07-14, 66 NRC 169, 187-88 (2007)
boards have found standing in cases where the proximity presumption was based on unlikely but plausible risk scenarios; LBP-17-7, 86 NRC 80 (2017)
nuclear criticality is a legitimate concern in the context of license to operate a mixed oxide fuel fabrication facility; LBP-17-7, 86 NRC 80 n.102 (2017)
- Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-07-14, 66 NRC 169, 188 (2007)
petitioners are not required to demonstrate their asserted injury with certainty or to provide extensive technical studies in support of their standing argument; LBP-17-7, 86 NRC 76 n.75 (2017)
resolving standing questions is an entirely different matter than adjudicating the ultimate merits of a contention; LBP-17-7, 86 NRC 76 n.75 (2017)
- Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 481 (2008)
board extensively rewrote a contention that was originally one sentence, transforming it into a three-paragraph reformulated contention; LBP-17-7, 86 NRC 129 (2017)
- Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 482 (2008)
licensing boards are expected to reformulate contentions to eliminate extraneous issues or to consolidate issues for a more efficient proceeding; LBP-17-7, 86 NRC 92 (2017)
- Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 482-83 (2008)
boards have authority to reformulate contentions to consolidate multiple similar contentions, trim out extraneous or inadmissible portions of contentions, and clarify issues; LBP-17-7, 86 NRC 126-27 (2017)

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- while boards may not provide the threshold information required for contention admissibility, they have reformulated a wide range of contentions in order either to eliminate extraneous issues or to consolidate related issues for a more efficient proceeding; LBP-17-7, 86 NRC 129-30 (2017)
- Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 483 (2008) boards are authorized under 10 C.F.R. 2.319(j) and 2.329(c)(1) to reformulate contentions; LBP-17-7, 86 NRC 130 (2017)
- Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 487 (2008) board submitted a reformulated contention to the parties for review and then rewrote the contention again based on their comments; LBP-17-7, 86 NRC 129 (2017)
- Shieldalloy Metallurgical Corp.* (Cambridge, Ohio Facility) CLI-99-12, 49 NRC 347, 354 (1999) petitioners represented by counsel are generally held to a higher standard than pro se litigants; LBP-17-8, 86 NRC 146 n.26 (2017)
- Shieldalloy Metallurgical Corp.* (License Amendment Request for Decommissioning of the Newfield, New Jersey Facility), CLI-07-20, 65 NRC 499, 503 (2007) to demonstrate error of law or abuse of discretion, appellant must dispute with specificity a board's ruling; CLI-17-12, 86 NRC 225
- Shieldalloy Metallurgical Corp.* (License Amendment Request for Decommissioning of the Newfield, New Jersey Facility), CLI-07-20, 65 NRC 499, 503-04 (2007) appellant must point out the errors in the board's decision; CLI-17-12, 86 NRC 219 (2017) recitation of appellant's prior positions in a proceeding or statement of general disagreement with a decision's result is not sufficient to demonstrate an error of law or abuse of discretion; CLI-17-12, 86 NRC 219 (2017)
- Sierra Club v. Cedar Point Oil Co., Inc.*, 73 F.3d 546, 557 (5th Cir. 1996) under judicially recognized concepts of standing, magnitude, as distinct from the directness, of the injury is not critical to the concerns that underlie the requirement of standing; LBP-17-7, 86 NRC 84 (2017)
- Sierra Club v. EPA*, 292 F.3d 895, 898-99 (D.C. Cir. 2002) at the pleading stage, general factual allegations of injury resulting from defendant's conduct may suffice, and the court presumes that general allegations embrace the specific facts that are necessary to support the claim; LBP-17-7, 86 NRC 76 n.77 (2017) when considering whether plaintiff has Article III standing, a federal court must assume arguendo the merits of his or her legal claim; LBP-17-7, 86 NRC 76 n.75 (2017)
- South Carolina Electric & Gas Co. and South Carolina Public Service Authority* (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-1, 71 NRC 1, 7 (2010) petitioner may provide additional facts and/or argument related to standing in its reply, provided that the new information is reasonably related to the allegations originally presented; LBP-17-6, 86 NRC 46 n.5 (2017); LBP-17-7, 86 NRC 87 (2017)
- Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-308, 3 NRC 20, 30 (1976) it is for the state agency to enforce the terms of its own permit; LBP-17-5, 86 NRC 29-30 (2017)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), CLI-11-8, 74 NRC 214, 221 (2011) petitioners are not required to provide expert or factual support at the contention admission stage in the form or of the quality necessary to withstand a summary disposition motion; LBP-17-7, 86 NRC 102 (2017)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), CLI-17-2, 85 NRC 33, 40 (2017) unless an appeal demonstrates an error of law or abuse of discretion, the Commission generally defers to the board on contention admissibility rulings; CLI-17-12, 86 NRC 219 (2017)
- Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), LBP-10-1, 71 NRC 165, 183 n.9 (2010) materiality in the context of section 2.309(c)(1)(ii) relates to the magnitude of the difference between previously available information and currently available information; LBP-17-6, 86 NRC 48 n.8 (2017)

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- State of New York v. NRC*, 681 F.3d 471, 483 (D.C. Cir. 2012)
risk of spent fuel pool fires is not characterized as remote and speculative; LBP-17-8, 86 NRC 159-60 (2017)
- Strata Energy, Inc.*, (Ross In Situ Uranium Recovery Project), CLI-16-13, 83 NRC 566, 570 n.17 (2016)
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when information in the final environmental impact statement is sufficiently similar to NRC Staff's draft environmental impact statement, an existing contention based on the DEIS can migrate to apply to the FEIS as it applied to the DEIS; LBP-17-9, 86 NRC 175 n.15 (2017)
- Strata Energy, Inc.* (Ross In Situ Recovery Uranium Project), LBP-12-3, 75 NRC 164, 177 (2012)
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- Strata Energy, Inc.*, (Ross In Situ Recovery Uranium Project), LBP-13-10, 78 NRC 117, 132-33 (2013)
when information in NRC Staff's environmental review document is sufficiently similar to applicant's environmental report, an existing contention based on the environmental report can migrate to apply to the Staff's review document as it applied to the environmental report; LBP-17-8, 86 NRC 164 n.153 (2017)
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- Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-07-10, 66 NRC 1, 18-19 (2007)
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- Tennessee Valley Authority* (Bellefonte Nuclear Power Plant, Units 3 and 4), CLI-09-3, 69 NRC 68, 73 n.24 (2009)
board may decide a contention admissibility issue on a theory different from that argued by litigants, provided that it explains the specific basis of its ruling and gives litigants a chance to present argument and, where appropriate, evidence regarding the board's new theory; LBP-17-7, 86 NRC 129 n.456 (2017)
- 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)
prior to license issuance, NRC must find reasonable assurance that activities authorized by an amendment can be conducted without endangering the health and safety of the public, and in compliance with Commission regulations; LBP-17-7, 86 NRC 98 n.230 (2017)
- Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 1), LBP-02-14, 56 NRC 15, 35 (2002)
prior to license issuance, NRC must find reasonable assurance that activities authorized by an amendment can be conducted without endangering the health and safety of the public and in compliance with Commission regulations; LBP-17-7, 86 NRC 98 (2017)
- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), CLI-10-12, 71 NRC 319, 327 (2010)
adherence to procedural rules by those who are cognizant of those rules and represented by counsel is especially important; LBP-17-8, 86 NRC 146 (2017)
board's unwillingness to forgive a 2-week filing delay by organizations represented by counsel was neither an abuse of discretion nor error of law; LBP-17-8, 86 NRC 146 (2017)

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- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), LBP-09-26, 70 NRC 939, 950 (2009), *aff'd*, CLI-10-12, 71 NRC 319 (2010)
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- Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), LBP-09-26, 70 NRC 939, 988 (2009)
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- Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), CLI-93-10, 37 NRC 192, 198 (1993)
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- Town of Winthrop v. FAA*, 535 F.3d 1, 11 (1st Cir. 2008)
while there will always be more data that could be gathered, agencies must have some discretion to draw the line and move forward with decisionmaking; LBP-17-5, 86 NRC 22 (2017)
- Town of Winthrop v. FAA*, 535 F.3d 1, 11-13 (1st Cir. 2008)
environmental impact statement is not a research document, and, in assessing foreseeable impacts, there will always be more data that could be gathered, so that agencies must have some discretion to draw the line and move forward with decisionmaking; LBP-17-9, 86 NRC 191 (2017)
- Town of Winthrop v. FAA*, 535 F.3d 1, 12-13 (1st Cir. 2008)
in assessing environmental impacts, NRC is not required to use the best scientific methodology or study phenomena for which there are not yet standard methods of measurement or analysis; LBP-17-9, 86 NRC 191 (2017)
- Town of Winthrop v. FAA*, 535 F.3d 1, 13 (1st Cir. 2008)
agencies are free to select their own methodology for assessing environmental impacts as long as that methodology is reasonable; LBP-17-5, 86 NRC 24 (2017); LBP-17-9, 86 NRC 191 (2017)
- Turlock Irrigation Dist. v. FERC*, 786 F.3d 18, 24 (D.C. Cir. 2015)
to claim a concrete injury to an organizational interest, petitioner must allege that the defendant's conduct perceptibly impaired the organization's ability to provide services in order to establish injury in fact; LBP-17-7, 86 NRC 83, 84 (2017)
- United States v. McIver*, 470 F.3d 550, 561-62 (4th Cir. 2006)
opinion testimony that states a legal standard or draws a legal conclusion by applying law to the facts is generally inadmissible; LBP-17-8, 86 NRC 165 n.157 (2017)
- U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island of Hawaii, Hawaii), CLI-10-20, 72 NRC 185, 192 (2010)
pro se petitioners are held to less rigid pleading standards, so that parties with a clear but imperfectly stated interest in the proceeding are not excluded; LBP-17-7, 86 NRC 77 (2017)
- U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island of Hawaii, Hawaii), LBP-10-4, 71 NRC 216, 229-30, *aff'd*, CLI-10-20, 72 NRC 185 (2010)
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- U.S. Department of Energy* (High-Level Waste Repository), CLI-09-14, 69 NRC 580, 588 (2009)
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- U.S. Department of Energy* (High-Level Waste Repository), LBP-09-6, 69 NRC 367, 416 (2009)
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- U.S. Department of Energy* (High-Level Waste Repository), LBP-09-6, 69 NRC 367, 434 (2009), *aff'd*, CLI-09-14, 69 NRC 580 (2009)
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- USEC Inc.* (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 437 (2006)
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- USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 458 (2006)
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- 10 C.F.R. 2.4
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- 10 C.F.R. 2.206
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- 10 C.F.R. 2.304(d)
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- 10 C.F.R. 2.307(a)
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- 10 C.F.R. 2.309
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- 10 C.F.R. 2.309(a)
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- 10 C.F.R. 2.309(a)-(d)
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- 10 C.F.R. 2.309(c)(1)
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- 10 C.F.R. 2.309(c)(1)(i)-(iii)
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- 10 C.F.R. 2.309(c)(1)(ii)
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- 10 C.F.R. 2.309(c)(4)
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- 10 C.F.R. 2.309(d)(1)
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- 10 C.F.R. 2.309(d)(2)
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- 10 C.F.R. 2.309(f)
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- 10 C.F.R. 2.309(f)(1)(i)
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- 10 C.F.R. 2.309(f)(1)(i)-(vi)
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- 10 C.F.R. 2.309(f)(1)(iii)
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- 10 C.F.R. 2.309(f)(1)(iv)
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- 10 C.F.R. 2.309(f)(1)(v)
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- 10 C.F.R. 2.309(f)(1)(vi)
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- 10 C.F.R. 2.309(f)(2)
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- 10 C.F.R. 2.309(i)(1)
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- 10 C.F.R. 2.310(a)
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- 10 C.F.R. 2.310(b)-(c)
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- 10 C.F.R. 2.310(d)
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- 10 C.F.R. 2.311(c)
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- 10 C.F.R. 2.315(c)
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- 10 C.F.R. 2.319
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- 10 C.F.R. 2.319(j)
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- 10 C.F.R. 2.319(k)
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- 10 C.F.R. 2.325
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- 10 C.F.R. 2.326
to the extent that new and materially different information were to come to light casting legitimate doubt on applicant's financial qualifications to construct new units, petitioners would not be foreclosed from seeking to reopen the record; LBP-17-6, 86 NRC 53-54 n.16 (2017)
- 10 C.F.R. 2.329(c)(1)
boards may hold a prehearing conference to consider matters including the simplification, clarification, and specification of the issues; LBP-17-7, 86 NRC 125 n.433 (2017)
- 10 C.F.R. 2.332
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- 10 C.F.R. 2.335(b)
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- 10 C.F.R. 2.336
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- 10 C.F.R. 2.336(a)
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- 10 C.F.R. 2.336(a)(2)(i)
all parties must disclose and provide all documents and data compilations in the possession, custody, or control of the party that are relevant to the contentions; LBP-17-9, 86 NRC 206 (2017)
- 10 C.F.R. 2.336(b)(1)-(5)
with contention still pending, parties must continue to disclose any documents relevant to the NRC Staff's efforts to resolve deficiencies identified in the board decision, in general, and any documents pertaining to the selection of a preferred methodology for Native American cultural resources, in particular; LBP-17-9, 86 NRC 207-08 (2017)
- 10 C.F.R. 2.336(d)
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each party's duty to submit mandatory disclosures is ongoing, and each party must make the mandatory disclosures once a month and without the filing of a discovery request by other parties; LBP-17-9, 86 NRC 206-07 (2017)
- 10 C.F.R. 2.336(d)
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- 10 C.F.R. 2.338
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- 10 C.F.R. 2.341(b)
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- 10 C.F.R. 2.341(b)(2)-(3)
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- 10 C.F.R. 2.341(b)(3)
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- 10 C.F.R. 2.341(b)(4)(i)-(v)
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- 10 C.F.R. 2.390(a)(4)
applicants may withhold from public disclosure trade secrets and commercial or financial information obtained from a person and privileged or confidential; LBP-17-7, 86 NRC 132 (2017)
- 10 C.F.R. 2.390(b)(6)
if parties seek, and the board enters, an appropriate protective order, petitioner will be granted access to proprietary information related to its admitted challenges to the license amendment request; LBP-17-7, 86 NRC 132 (2017)

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- 10 C.F.R. 2.705(b)(1)
because mandatory disclosures are the only form of discovery in Subpart L proceedings, they cover a vast array of information and documents that are not evidence and need not meet the requirements of admissible evidence; LBP-17-9, 86 NRC 207 (2017)
- 10 C.F.R. 2.710
if the environmental impact statement is scrubbed of any discussion that could violate 10 C.F.R. 51.75(b), NRC Staff may move for summary disposition; LBP-17-8, 86 NRC 164 (2017)
- 10 C.F.R. 2.710(a)
summary disposition movant must attach a short and concise statement of the material facts to its motion as to which movant contends that there is no genuine issue to be heard; LBP-17-9, 86 NRC 184 (2017)
- 10 C.F.R. 2.710(d)(2)
summary disposition will be granted if filings in the proceeding, depositions, answers to interrogatories, and admissions on file, plus statements of parties and affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law; LBP-17-9, 86 NRC 183 (2017)
undisputed facts provide a sufficient basis for a board to rule on a motion for summary disposition as a matter of law; LBP-17-9, 86 NRC 188 (2017)
- 10 C.F.R. 2.1205
standards governing summary disposition in Subpart L proceedings are based upon those federal courts apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure; LBP-17-9, 86 NRC 183 (2017)
- 10 C.F.R. 2.1205(a)
movant carries the burden of demonstrating that summary disposition is appropriate and must explain in writing the basis for the motion; LBP-17-9, 86 NRC 184 (2017)
- 10 C.F.R. 2.1205(c)
although the proceeding is a simplified hearing governed by Subpart L, in ruling on motions for summary disposition, the presiding officer shall apply the standards set forth in Subpart G; LBP-17-9, 86 NRC 183 (2017)
- 10 C.F.R. 2.1207(a)(3)(iii)
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- 10 C.F.R. 2.1207(b)(6)
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- 10 C.F.R. 2.1210(a)
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- 10 C.F.R. 2.1212
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- 10 C.F.R. 2.1319(a)
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- 10 C.F.R. 2.1319(f)
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- 10 C.F.R. 50.33(f)
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- combined license applicant that is an electric utility must submit information demonstrating that it either possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs; CLI-17-12, 86 NRC 220 (2017)
- 10 C.F.R. 50.33(f)(1)
- COL applicant's ability to recover construction costs is not material to its financial qualification; CLI-17-12, 86 NRC 222 (2017); LBP-17-6, 86 NRC 52 (2017)
- COL applicants must submit the financial qualification information described in this regulation; CLI-17-12, 86 NRC 216 (2017); LBP-17-6, 86 NRC 42 n.2 (2017)
- combined license application must demonstrate that applicant is financially qualified to cover the construction and fuel cycle costs for new units; LBP-17-6, 86 NRC 41 (2017)
- contention claims that applicant's bankruptcy filing means that combined license application no longer demonstrates that applicant is financially qualified to cover the construction and fuel cycle costs; CLI-17-12, 86 NRC 217 (2017)
- reasonable assurance does not mean a demonstration of near certainty that applicant will never be pressed for funds in the course of construction, but instead must merely have a reasonable financing plan in the light of relevant circumstances; LBP-17-6, 86 NRC 53 (2017)
- 10 C.F.R. 50.33(g)
- emergency plans that are not submitted at the early site permit stage are not evaluated by NRC until the combined license stage; LBP-17-8, 86 NRC 152 (2017)
- exact size and configuration of the emergency planning zones surrounding a particular nuclear power reactor shall be determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries; LBP-17-7, 86 NRC 78 n.88 (2017)
- plume exposure pathway EPZ for nuclear power reactors generally shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius; LBP-17-7, 86 NRC 78 n.88 (2017)
- 10 C.F.R. 50.38
- applicant whose stock is held by non-U.S. citizens and the majority of whose board of directors and executive officers are non-U.S. citizens fails to comply with foreign ownership requirements; CLI-17-11, 86 NRC 56 (2017)
- 10 C.F.R. 50.40
- if NRC Staff is not assured that the proposed monitoring program will accurately monitor alkali-silica reaction advancement, Staff could not plausibly conclude that the monitoring program will provide reasonable assurance that public health and safety will not be endangered by operation in the proposed manner; LBP-17-7, 86 NRC 98-99 (2017)
- prior to license issuance, NRC must find reasonable assurance that activities authorized by an amendment can be conducted without endangering the health and safety of the public and comply with Commission regulations; LBP-17-7, 86 NRC 98 (2017)
- 10 C.F.R. 50.46
- likelihood of a design basis accident concurrent with an open phase condition resulting in the plant exceeding criteria specified in this section would be small; DD-17-4, 86 NRC 240 (2017)
- open phase condition is a significant safety concern because a concurrent design basis event would in most cases result in the plant exceeding criteria for emergency core cooling systems; DD-17-4, 86 NRC 239 (2017)
- 10 C.F.R. 50.47(a)(1)(i)-(iv)
- emergency plans that are not submitted at the early site permit stage are not evaluated by NRC until the combined license stage; LBP-17-8, 86 NRC 152 (2017)
- 10 C.F.R. 50.47(a)(1)(iii)-(iv)
- early site permit applicant may (but need not) submit as part of its application either complete and integrated emergency plans or major features of its emergency plans; LBP-17-8, 86 NRC 152 (2017)
- 10 C.F.R. 50.47(c)(2)
- plume exposure emergency planning zone with a radius of about 10 miles is required, to be modified only by factors related to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries; LBP-17-8, 86 NRC 152-53 n.79 (2017)

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- 10 C.F.R. 50.55a(h)(2)
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nuclear power plants with construction permits issued after January 1, 1971, but before May 13, 1999, must have protection systems that meet the requirements in IEEE Standards 279-1968, 279-1997, 603-1991, and correction sheet dated January 30, 1995; DD-17-4, 86 NRC 238 (2017)
protection systems for nuclear power plants with construction permits issued before January 1, 1971, must be consistent with their licensing basis or meet the requirements of IEEE Standard 603-1991 and the correction sheet dated January 30, 1995; DD-17-4, 86 NRC 238 (2017)
- 10 C.F.R. 50.55a(h)(3)
applications filed on or after May 13, 1999, for construction permits and licenses under 10 C.F.R. Part 50, or for design approvals, design certifications, and combined licenses under 10 C.F.R. Part 52, must meet requirements for safety systems in IEEE Standard 603-1991 and the correction sheet dated January 30, 1995; DD-17-4, 86 NRC 238 (2017)
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- 10 C.F.R. 50.65(a)(1)
Maintenance Rule requires that if the rate of ASR degradation is changing, licensee must change its monitoring intervals accordingly; LBP-17-7, 86 NRC 122, 125 (2017)
- 10 C.F.R. 50.90
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- 10 C.F.R. 50.92(a)
in determining whether a license amendment, construction permit, or early site permit will be issued, the Commission is guided by the considerations that govern issuance of initial licenses, construction permits, or early site permits to the extent applicable and appropriate; LBP-17-7, 86 NRC 97-98 (2017)
- 10 C.F.R. 50.92(c)
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- 10 C.F.R. 50.150(a)(3)
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- 10 C.F.R. Part 50, Appendix A, GDC 2
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- 10 C.F.R. Part 50, Appendix A, GDC 17
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- 10 C.F.R. Part 50, Appendix C
COL application should include a brief statement of applicant's general financial plan for financing the cost of the facility, identifying source on which applicant relies for necessary construction funds; LBP-17-6, 86 NRC 42 n.2 (2017)
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- guidance is provided regarding how a COL applicant should establish its financial qualification; LBP-17-6, 86 NRC 42 n.2 (2017)
- if COL applicant is an established organization, it need only provide an estimate of construction costs, the source of construction funds, and its most recent annual financial statement; LBP-17-6, 86 NRC 42 n.2 (2017)
- in determining applicant's financial qualification, NRC requires the minimum amount of information necessary for that purpose; LBP-17-6, 86 NRC 42 n.2 (2017)
- 10 C.F.R. Part 50, Appendix C, I.A
combined license applicant that is an established organization should provide an estimate of construction costs, source of construction funds, and financial statements; CLI-17-12, 86 NRC 220 n.26 (2017)
- 10 C.F.R. Part 50, Appendix C, I.A.2
argument challenging applicant's financial capacity is particularly deficient in light of the assumed financial stability of established utilities under NRC regulations; LBP-17-6, 86 NRC 53 n.15 (2017)
- combined license application should include a brief statement of applicant's general plan for financing cost of the facility and identify source on which applicant relies for necessary construction funds; CLI-17-12, 86 NRC 220 n.26 (2017)
- 10 C.F.R. 51.14
as part of its NEPA analysis, and consistent with the approach outlined in the Council for Environmental Quality's regulations, NRC Staff categorizes the potential environmental impacts on a scale from small to large; LBP-17-5, 86 NRC 16 (2017)
- 10 C.F.R. 51.50(b)(2)
environmental report for early site permit need not assess economic, technical, or other benefits and costs of the proposed action or an evaluation of alternative energy sources; LBP-17-8, 86 NRC 151, 161, 163 (2017)
- 10 C.F.R. 51.75(b)
NRC Staff may not include information in an environmental impact statement if applicant chooses not to address it in the application; LBP-17-8, 86 NRC 164 (2017)
- 10 C.F.R. 52.1(a)
early site permit is a partial construction permit; LBP-17-8, 86 NRC 142-43 (2017)
- 10 C.F.R. 52.17(b)(2)(i)-(ii)
early site permit applicant may (but need not) submit as part of its application either complete and integrated emergency plans or major features of its emergency plans; LBP-17-8, 86 NRC 152 (2017)
- 10 C.F.R. 52.77
COL application must contain all of the information required by section 50.33; LBP-17-6, 86 NRC 42 n.2 (2017)
- 10 C.F.R. Part 52, Appendix D, IV.A.2.a
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- 36 C.F.R. 60.4
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- 36 C.F.R. 800.2(c)(2)(ii)(A)
federal agency consultation must provide each Indian tribe with a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects; LBP-17-9, 86 NRC 185, 190 (2017)
- 36 C.F.R. 800.2(c)(2)(ii)(C)
consultation efforts must recognize the government-to-government relationship between the federal government and Indian tribes and be sensitive to the needs of the tribal participants; LBP-17-9, 86 NRC 185 (2017)
- 36 C.F.R. 800.4(a)(4)
each agency during the consultation process must gather information from any Indian tribe to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register; LBP-17-9, 86 NRC 185 (2017)

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- 36 C.F.R. 800.4(b)
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- 36 C.F.R. 800.4(b)(1)
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- 36 C.F.R. 800.4(c), 800.5
federal agency must assess the effects of an undertaking on any eligible historic properties found; LBP-17-9, 86 NRC 184-85 (2017)
- 36 C.F.R. 800.5
federal agency must determine whether the effects of an undertaking on any eligible historic properties found will be adverse; LBP-17-9, 86 NRC 184-85 (2017)
- 36 C.F.R. 800.6
federal agency must avoid or mitigate any adverse effects of an undertaking on any eligible historic properties found; LBP-17-9, 86 NRC 185 (2017)
- 40 C.F.R. 141.2
maximum contaminant levels for drinking water are the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety; LBP-17-5, 86 NRC 12 (2017)
- 40 C.F.R. 144.3
aquifer qualifies as a drinking water supply if the aquifer or a portion of it has total dissolved solids in the groundwater of less than 10,000 milligrams per liter contains a sufficient quantity of groundwater to supply a public water system and proposed injection zone is capable of adequately receiving the injected fluid; LBP-17-5, 86 NRC 8 (2017)
- 40 C.F.R. 1502.22
if NRC Staff chooses a methodology that does not include complete information about adverse effects on a tribe's cultural resources, Staff would need to include an explanation that satisfies the requirements of this regulation; LBP-17-9, 86 NRC 200 (2017)
when an agency is unable to obtain complete information to fully assess foreseeable significant adverse effects on the human environment, the agency shall always make clear that such information is lacking; LBP-17-9, 86 NRC 191 (2017)
- 40 C.F.R. 1502.22(a)
if incomplete information is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall obtain the information and include it in the environmental impact statement; LBP-17-9, 86 NRC 191 (2017)
- 40 C.F.R. 1502.22(b)
if costs of obtaining information are exorbitant, the agency must include information required by this regulation in the final supplemental environmental impact statement; LBP-17-9, 86 NRC 191-92 (2017)
if information 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; LBP-17-9, 86 NRC 200 (2017)
- 40 C.F.R. 1508.8
adverse effects that must be evaluated include ecological, aesthetic, historic, cultural, economic, social, or health effects; LBP-17-9, 86 NRC 190-91 (2017)
- 40 C.F.R. 1508.27
as part of its NEPA analysis, and consistent with the approach outlined in the Council on Environmental Quality's regulations, NRC Staff categorizes the potential environmental impacts on a scale from small to large; LBP-17-5, 86 NRC 16 (2017)

LEGAL CITATIONS INDEX STATUTES

- Atomic Energy Act, 104d
applicant whose stock is held by non-U.S. citizens and the majority of whose board of directors and executive officers are non-U.S. citizens fails to comply with foreign ownership requirements; CLI-17-11, 86 NRC 56 (2017)
- Atomic Energy Act, 189a, 42 U.S.C. § 2239(a)(1)(A) (2017)
NRC must grant a hearing in a license amendment proceeding upon the request of any person whose interest may be affected by the proceeding; LBP-17-7, 86 NRC 73 (2017)
- Fla. Stat. § 366.93(3)(e) (2016)
state may grant utility's request for advanced nuclear cost recovery for preconstruction and construction activities if the utility shows that the plant remains feasible and projected costs for the plant are reasonable; LBP-17-6, 86 NRC 43 n.3 (2017)
- National Environmental Policy Act, 42 U.S.C. §§ 4321-4370f
principal objectives are to ensure that an agency considers every significant aspect of the environmental impact of a proposed action and informs the public that it has considered environmental concerns in its decisionmaking process; LBP-17-5, 86 NRC 15-16 (2017)
- National Environmental Policy Act, 42 U.S.C. § 4332(A) (1975)
NRC Staff is free to select whatever course of action it deems appropriate to address final supplemental environmental impact statement deficiencies as long as its chosen method utilizes a systematic, interdisciplinary approach that will ensure integrated use of natural and social sciences; LBP-17-9, 86 NRC 193 (2017)
- National Environmental Policy Act, 42 U.S.C. § 4332(C) (2012)
agencies must prepare a detailed environmental impact statement for proposed actions significantly affecting the quality of the human environment; LBP-17-9, 86 NRC 190 (2017)
- National Environmental Policy Act, 42 U.S.C. § 4332(C)(i)
to the fullest extent possible, all federal agencies shall include in every major federal action significantly affecting the quality of the human environment, a detailed statement by the responsible official on the environmental impact of the proposed action; LBP-17-5, 86 NRC 16 (2017)
- National Historic Preservation Act, 106
NRC Staff having followed the guidance provided to it by the board in its partial initial decision, the board finds that the series of opportunities to consult is minimally sufficient to fulfill the requirements of section 106 of the NHPA; LBP-17-9, 86 NRC 190 (2017)
NRC Staff must provide an opportunity to consult but the Act does not dictate an end result; LBP-17-9, 86 NRC 189 (2017)
- National Historic Preservation Act, 106, 54 U.S.C. § 300308 (2012)
"historic property" includes any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register; LBP-17-9, 86 NRC 184 n.87 (2017)
- National Historic Preservation Act, 106, 54 U.S.C. § 302706 (2012)
NRC Staff's efforts are sufficient to satisfy NHPA's requirement tribe is afforded a meaningful opportunity to consult on federal actions that may affect properties of religious or cultural significance, as well as to advise the agency on identification and evaluation of such properties, and to participate in the resolution of any possible adverse consequences; LBP-17-9, 86 NRC 190 (2017)
tribe is simply afforded a meaningful opportunity to consult on federal actions that affect properties of religious or cultural significance to the tribe; LBP-17-9, 86 NRC 189 (2017)

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STATUTES

- National Historic Preservation Act, 106, 54 U.S.C. § 302706(a)
agencies must consider the unique interests and viewpoints of Native Americans in determining what to place on the National Register, such that properties of traditional religious and cultural importance to an Indian tribe may be determined to be eligible for inclusion on the National Register; LBP-17-9, 86 NRC 185 (2017)
- National Historic Preservation Act, 106, 54 U.S.C. § 302706(b)
federal agency shall consult with any Indian tribe that attaches religious and cultural significance to eligible properties; LBP-17-9, 86 NRC 185 (2017)
- National Historic Preservation Act, 106, 54 U.S.C. § 306108 (2012)
prior to approving any undertaking, federal agencies must take into account the effect of the undertaking on any historic property; LBP-17-9, 86 NRC 184 (2017)
- Safe Drinking Water Act, 42 U.S.C. § 300h-1
federal law delegates enforcement and administration of underground injection control programs to the states; LBP-17-5, 86 NRC 7 n.6 (2017)
- Safe Drinking Water Act, 42 U.S.C. §§ 300f *et seq.*,
Maximum Contaminant Levels for drinking water represent chemical concentrations that EPA has determined will not be harmful to public health, even if injected directly into drinking water;
LBP-17-5, 86 NRC 12 (2017)

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OTHERS**

- Fed. R. Civ. P. 56
standards governing summary disposition in Subpart L proceedings are based upon those federal courts apply to motions for summary judgment; LBP-17-9, 86 NRC 183 (2017)
- Fla. Admin. Code Ann. r. 62-528.405(1)(a)
underground injection control permitting program requires applicant to demonstrate that the hydrogeologic environment is suitable for waste injection without modifying the ambient water quality of other aquifers overlying the injection zone; LBP-17-5, 86 NRC 8 (2017)
- Fla. Admin. Code Ann. r. 62-528.405(2)
applicant is required to obtain data on effectiveness of the hydrogeologic confining zone for each of the injection wells it plans to construct at the site; LBP-17-5, 86 NRC 9 n.9 (2017)
- Fla. Admin. Code Ann. r. 62-528.405(2)(a)
regulations governing Class I injection wells require applicant to demonstrate the existence of a confining zone that will prevent fluid migration into the underground source of drinking water; LBP-17-5, 86 NRC 18 (2017)
- Fla. Admin. Code Ann. r. 62-528.405(2)(c)
hydrogeological data collection and tests used to demonstrate confining characteristics for wastewater injection wells are discussed; LBP-17-5, 86 NRC 18 (2017)
- Fla. Admin. Code Ann. r. 62-528.410 to 62-528.425
underground injection control programs require permits for the construction and operation of Class I injection wells and subject permitted wells to detailed monitoring requirements; LBP-17-5, 86 NRC 7 (2017)
- Fla. Admin. Code Ann. r. 62-528.425(1)(a)-(b)
Class I injection permittees must install devices on the injection wells to monitor flow rate and injection pressure; LBP-17-5, 86 NRC 8 (2017)
- Fla. Admin. Code Ann. r. 62-528.425(1)(g)
state underground injection control permitting program seeks to ensure the effectiveness of the hydrogeologic confining zone to prevent upward migration of the injected fluid into any underground source of drinking water; LBP-17-5, 86 NRC 8 (2017)
- Fla. Admin. Code Ann. r. 62-528.425(1)(g)1
Class I injection permittees must address their plans to construct wells capable of monitoring absence of fluid movement adjacent to the well bore and long-term effectiveness of the confining zone; LBP-17-5, 86 NRC 8 (2017)
- Fla. Admin. Code Ann. r. 62-528.430(1)-(2), 62-528.455(2)
information acquired from the well during construction and operational testing informs the state department of environmental protection's decision whether to issue an operation permit; LBP-17-5, 86 NRC 8 (2017)
- Fla. Admin. Code Ann. r. 62-528.450(1)(b)
issuance of a construction permit is conditioned on applicant's demonstration of reasonable assurance that a well, throughout its construction and operation, will comply with the state underground injection control permitting program; LBP-17-5, 86 NRC 7-8 (2017)
where there is limited understanding of geologic confinement or existing information indicates that confinement may be poor or lacking, state underground injection control permitting program requires applicant to first construct an exploratory well; LBP-17-5, 86 NRC 8 (2017)

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- Fla. Admin. Code Ann. r. 62-528.450(3)(e)-(f)
operation permit must also be obtained from the state department of environmental protection for a Class I injection well; LBP-17-5, 86 NRC 8 (2017)
- Fla. Admin. Code Ann. r. 62-550.828, tbls. 4-5
state Maximum Contaminant Levels for heptachlor, ethylbenzene, and toluene in drinking water are the same as the EPA MCLs; LBP-17-5, 86 NRC 12 n.15 (2017)
- Fla. Admin. Code Ann. r. 62-600
total suspended solids must be removed from wastewater and soluble organic matter must be treated; LBP-17-5, 86 NRC 6 (2017)
- Fla. Admin. Code Ann. r. 62-600.440(6)
wastewater must be filtered and disinfected to further reduce fecal coliform values; LBP-17-5, 86 NRC 6 (2017)
- Fla. Admin. Code r. 25-6.0423(6)(c) (2014)
to make a plant feasibility showing, a utility must demonstrate that it has committed sufficient, meaningful, and available resources to enable the project to be completed and that its intent is realistic and practical; LBP-17-6, 86 NRC 43 n.3 (2017)
- Model Code of Judicial Conduct, § 2.2 (Am. Bar Ass'n 2011)
judges shall uphold and apply the law; LBP-17-7, 86 NRC 92 (2017)
- Model Rules of Prof'l Conduct r. 3.2 (Am. Bar. Ass'n 1983)
parties' counsel have an ethical obligation to make reasonable efforts to expedite litigation in a manner consistent with their party's interests; LBP-17-9, 86 NRC 206 (2017)

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ABUSE OF DISCRETION

board's unwillingness to forgive a 2-week filing delay by organizations represented by counsel was neither an abuse of discretion nor founded on an error of law; LBP-17-8, 86 NRC 138 (2017)
recitation of appellant's prior positions in a proceeding or statement of general disagreement with a decision's result is not sufficient to demonstrate an error of law or abuse of discretion; CLI-17-12, 86 NRC 215 (2017)

ACCESS AUTHORIZATION

if parties seek, and the board enters, an appropriate protective order, petitioner will be granted access to proprietary information related to its admitted challenges to the license amendment request; LBP-17-7, 86 NRC 59 (2017)

ACCIDENTS

specific requirements for analyzing events related to spent fuel accidents do not apply until the combined license stage; LBP-17-8, 86 NRC 138 (2017)

See also Design Basis Accident

ACCIDENTS, SEVERE

petitioner had standing under the proximity presumption despite licensee's argument that hypothetical accident scenarios underlying the standing argument were incredible because they would first require three independent redundant safety systems to fail; LBP-17-7, 86 NRC 59 (2017)

ADJUDICATORY PROCEEDINGS

See Combined License Proceedings; Early Site Permit Proceedings; Evidentiary Hearings; License Amendment Proceedings; License Transfer Proceedings; Operating License Amendment Proceedings; Subpart L Proceedings

AFFIDAVITS

affidavit submitted with reply brief was excluded because it improperly attempted to backstop elemental deficiencies in the original petition to intervene; CLI-17-12, 86 NRC 215 (2017)

factual support required for contention admission need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand summary disposition; LBP-17-8, 86 NRC 138 (2017)

organization claiming representational standing must provide an affidavit specifically authorizing the organization to represent the interests of a named member; LBP-17-7, 86 NRC 59 (2017)

petitioner cannot attach an authorization affidavit for standing to its reply because this would deprive the opposing party of the opportunity to challenge the sufficiency of the affidavit; LBP-17-7, 86 NRC 59 (2017)

representational standing can be established without an authorization affidavit or declaration when the petition has been signed by a ranking official of the organization who herself has standing; LBP-17-7, 86 NRC 59 (2017)

requirement to provide affidavits from individual members applies when the organization asserts standing to represent the interests of those members; LBP-17-7, 86 NRC 59 (2017)

ALKALI SILICA REACTION

admissibility of contention arguing that license amendment request misconstrues the effects of alkali-silica reaction acting within the restraint imposed by reinforcing steel and that serious and rapid degradation of the concrete may go unnoticed is decided; LBP-17-7, 86 NRC 59 (2017)

contention that test program does not sufficiently account for concrete with respect to age, length of time alkali-silica reaction has propagated, and effects of freshwater at varying levels, salt in the water at

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varying levels of height and concentration, heat, and radiation is admissible; LBP-17-7, 86 NRC 59 (2017)

if NRC Staff is not assured that the proposed monitoring program will accurately monitor alkali-silica reaction advancement, Staff could not plausibly conclude that there is reasonable assurance that public health and safety will not be endangered by operation; LBP-17-7, 86 NRC 59 (2017)

license amendment that would allow continuing reactor operations despite acknowledged potential for alkali-silica reaction advancement creates a potential for offsite consequences that would likely affect the geographic area in which petitioner's office is located; LBP-17-7, 86 NRC 59 (2017)

Maintenance Rule requires that if the rate of alkali-silica reaction degradation is changing, licensee must change its monitoring intervals accordingly; LBP-17-7, 86 NRC 59 (2017)

AMENDMENT

See License Amendment Proceedings; Operating License Amendment Applications; Operating License Amendment Proceedings; Operating License Amendments

AMENDMENT OF REGULATIONS

Commission's intent in revising contention admissibility requirements was not to put up a fortress to deny intervention, but rather to ensure that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions; LBP-17-8, 86 NRC 138 (2017)

contention admissibility criteria are the result of a major rule change that sought to toughen NRC rules in a conscious effort to raise the threshold bar for an admissible contention; LBP-17-8, 86 NRC 138 (2017)

APPEALS

absent extreme circumstances, new argument raised for the first time on appeal will not be considered; CLI-17-12, 86 NRC 215 (2017)

appeal of a decision wholly denying a request for hearing lies as a matter of right; CLI-17-12, 86 NRC 215 (2017)

party who seeks judicial review of an initial decision must first seek Commission review, unless otherwise authorized by law; LBP-17-5, 86 NRC 1 (2017)

recitation of appellant's prior positions in a proceeding or statement of general disagreement with a decision's result is not sufficient to demonstrate an error of law or abuse of discretion; CLI-17-12, 86 NRC 215 (2017)

to demonstrate error of law or abuse of discretion, appellant must dispute with specificity a board's ruling; CLI-17-12, 86 NRC 215 (2017)

within 25 days after service of a petition for Commission review of an initial decision, parties to the proceeding may file an answer supporting or opposing Commission review; LBP-17-5, 86 NRC 1 (2017)

APPELLATE REVIEW

under 10 C.F.R. 2.341(b)(4)(i)-(v), review is discretionary, and the Commission will grant petitions for review of decisions of a presiding officer, giving due weight to the existence of a substantial question for review; CLI-17-12, 86 NRC 215 (2017)

unless an appeal demonstrates an error of law or abuse of discretion, the Commission generally defers to boards on contention admissibility rulings; CLI-17-12, 86 NRC 215 (2017)

APPLICANTS

burden of proof in NRC licensing proceedings involving safety-related contentions is on applicant; LBP-17-5, 86 NRC 1 (2017)

ATOMIC ENERGY ACT

applicant whose stock is held by non-U.S. citizens and the majority of whose board of directors and executive officers are non-U.S. citizens fails to comply with foreign ownership requirements; CLI-17-11, 86 NRC 55 (2017)

NRC must grant a hearing in a license amendment proceeding upon the request of any person whose interest may be affected by the proceeding; LBP-17-7, 86 NRC 59 (2017)

BENEFIT-COST ANALYSIS

contentions that challenge economic, technical, or other benefits and costs of a small modular reactor are not appropriate at the early site permit stage; LBP-17-8, 86 NRC 138 (2017)

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environmental report for early site permit need not assess economic, technical, or other benefits and costs of the proposed action or evaluate alternative energy sources; LBP-17-8, 86 NRC 138 (2017)
if adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs;
LBP-17-5, 86 NRC 1 (2017)

BRIEFS, APPELLATE

any petition for Commission review and any answer must conform to the requirements of 10 C.F.R. 2.341(b)(2)-(3); LBP-17-5, 86 NRC 1 (2017)

BURDEN OF PROOF

applicant bears the burden in NRC licensing proceedings involving safety-related contentions; LBP-17-5, 86 NRC 1 (2017)

NRC Staff bears the burden of proof in proceedings involving NEPA contentions because it has the statutory obligation of complying with NEPA; LBP-17-5, 86 NRC 1 (2017)

petitioner does not have to prove its contentions at the admissibility stage; LBP-17-8, 86 NRC 138 (2017)
petitioner has the burden to show that the proximity presumption should apply; LBP-17-7, 86 NRC 59 (2017)

to carry its burden of proof on environmental issues, NRC Staff must establish that its position is supported by a preponderance of the evidence; LBP-17-5, 86 NRC 1 (2017)

CASE MANAGEMENT

boards may hold conferences before or during a hearing for the simplification of contentions; LBP-17-7, 86 NRC 59 (2017)

CERTIFICATION

signature on intervention petition and reply is a certification that those documents are true and correct; LBP-17-7, 86 NRC 59 (2017)

See also Design Certification

CHEMICAL CONTAMINANTS

Maximum Contaminant Levels for drinking water represent chemical concentrations that EPA has determined will not be harmful to public health, even if injected directly into drinking water; LBP-17-5, 86 NRC 1 (2017)

Maximum Contaminant Levels for potential carcinogens in drinking water, including heptachlor and tetrachloroethylene, are set at zero for three reasons; LBP-17-5, 86 NRC 1 (2017)

CLIMATE CHANGE

issue of sea level rise is outside the scope of a license amendment request; LBP-17-7, 86 NRC 59 (2017)

COMBINED LICENSE APPLICATION

applicant must include a statement of financial qualifications; CLI-17-12, 86 NRC 215 (2017)

applicant should include a brief statement of its general plan for financing cost of the facility and identify source on which it relies for necessary construction funds; CLI-17-12, 86 NRC 215 (2017)

applicant that does not qualify as an electric utility must also demonstrate that it is financially qualified to operate the units; CLI-17-12, 86 NRC 215 (2017)

applicant that is an established organization should provide an estimate of construction costs, source of construction funds, and financial statements; CLI-17-12, 86 NRC 215 (2017)

applicants must demonstrate financial qualifications to cover the construction and fuel cycle costs for new units; LBP-17-6, 86 NRC 37 (2017)

applicants must submit the financial qualification information described in 10 C.F.R. 50.33(f)(1); LBP-17-6, 86 NRC 37 (2017)

application may incorporate AP1000 design control document by reference; LBP-17-6, 86 NRC 37 (2017)

application should include a brief statement of applicant's general financial plan for financing the cost of the facility, identifying source on which applicant relies for necessary construction funds; LBP-17-6, 86 NRC 37 (2017)

electric utility applicant must submit information demonstrating that it either possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs; CLI-17-12, 86 NRC 215 (2017)

guidance is provided in 10 C.F.R. Part 50, Appendix C on how applicant should establish its financial qualification; LBP-17-6, 86 NRC 37 (2017)

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- if applicant is an established organization, it need only provide an estimate of construction costs, the source of construction funds, and its most recent annual financial statement; LBP-17-6, 86 NRC 37 (2017)
- in determining applicant's financial qualification, NRC requires the minimum amount of information necessary for that purpose; LBP-17-6, 86 NRC 37 (2017)
- COMBINED LICENSE PROCEEDINGS**
- applicant bears the burden of proof in NRC licensing proceedings involving safety-related contentions; LBP-17-5, 86 NRC 1 (2017)
- board shall provide all proposed questions to the Commission's Secretary for inclusion in the official record of the proceeding; LBP-17-5, 86 NRC 1 (2017)
- NRC Staff bears the burden of proof in proceedings involving NEPA contentions because it has the statutory obligation of complying with NEPA; LBP-17-5, 86 NRC 1 (2017)
- proximity, or geographic, presumption, dispenses with the need for petitioner who lives within 50 miles of the facility at issue to make an affirmative showing of injury, causation, and redressability in certain proceedings, including COL applications; LBP-17-6, 86 NRC 37 (2017)
- COMBINED LICENSES**
- issuance of a COL is a major federal action requiring an environmental impact statement; LBP-17-5, 86 NRC 1 (2017)
- CONCRETE**
- admissibility of contention arguing that license amendment request misconstrues the effects of alkali-silica reaction acting within the restraint imposed by reinforcing steel and that serious and rapid degradation of the concrete may go unnoticed is decided; LBP-17-7, 86 NRC 59 (2017)
- contention questioning whether test program is truly representative of concrete is admissible; LBP-17-7, 86 NRC 59 (2017)
- if NRC Staff is not assured that the proposed monitoring program will accurately monitor alkali-silica reaction advancement, Staff could not plausibly conclude that there is reasonable assurance that public health and safety will not be endangered by operation; LBP-17-7, 86 NRC 59 (2017)
- license amendment that would allow continuing reactor operations despite the acknowledged potential for alkali-silica reaction advancement creates a potential for offsite consequences that would likely affect the geographic area in which petitioner's office is located; LBP-17-7, 86 NRC 59 (2017)
- CONFIDENTIAL INFORMATION**
- applicants may withhold from public disclosure trade secrets and commercial or financial information obtained from a person and privileged or confidential; LBP-17-7, 86 NRC 59 (2017)
- parties' proposed questions in Subpart L hearings must be kept by the board in confidence either until they are propounded by the board or until issuance of the initial decision on the issue being litigated; LBP-17-5, 86 NRC 1 (2017)
- CONSIDERATION OF ALTERNATIVES**
- although NEPA establishes a national policy in favor of protecting the environment, it does not require the agency to select the most environmentally benign alternative, but rather merely prohibits uninformed, rather than unwise, agency action; LBP-17-5, 86 NRC 1 (2017)
- if incomplete information is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall obtain the information and include it in the environmental impact statement; LBP-17-9, 86 NRC 167 (2017)
- CONSTRUCTION**
- state may grant utility's request for advanced nuclear cost recovery for preconstruction and construction activities if the utility shows that the plant remains feasible and projected costs for the plant are reasonable; LBP-17-6, 86 NRC 37 (2017)
- CONSTRUCTION OF MEANING**
- boards should construe intervention petition in favor of petitioner when evaluating whether petitioner has met its burden to establish standing; LBP-17-7, 86 NRC 59 (2017); LBP-17-8, 86 NRC 138 (2017)
- CONSTRUCTION PERMITS**
- early site permit is a partial construction permit; LBP-17-8, 86 NRC 138 (2017)
- issuance is conditioned on applicant's demonstration of reasonable assurance that a well, throughout its construction and operation, will comply with the state underground injection control permitting program; LBP-17-5, 86 NRC 1 (2017)

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CONSULTATION DUTY

board found that while NRC Staff's initial efforts were inadequate to satisfy the NHPA consultation requirement, by finally offering an in-person meeting with high-level NRC management officials, NRC Staff had met its obligations; LBP-17-9, 86 NRC 167 (2017)

each agency during the consultation process must gather information from any Indian tribe to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register; LBP-17-9, 86 NRC 167 (2017)

federal agency must consult with a State Historic Preservation Officer and seek approval of the Advisory Council on Historic Preservation to avoid or mitigate any adverse effects of an undertaking on any eligible historic properties found; LBP-17-9, 86 NRC 167 (2017)

federal agency shall consult with any Indian tribe that attaches religious and cultural significance to eligible properties; LBP-17-9, 86 NRC 167 (2017)

NHPA does not empower an Indian tribe to delay or stall a licensing proceeding just because the tribe dislikes the possible outcome of the consultation process; LBP-17-9, 86 NRC 167 (2017)

NHPA requires parties to consult in good faith; LBP-17-9, 86 NRC 167 (2017)

NRC Staff has been much better served when, instead of just checking the boxes to meet some procedural minimum, it has worked with Indian tribes to comply with the substance of NEPA and the NHPA; LBP-17-9, 86 NRC 167 (2017)

NRC Staff having followed the guidance provided to it by the board in its partial initial decision, the board finds that the series of opportunities to consult is minimally sufficient to fulfill the requirements of section 106 of the NHPA; LBP-17-9, 86 NRC 167 (2017)

NRC Staff leadership must attend any meeting alongside tribal leadership for such a meeting to constitute government-to-government consultation; LBP-17-9, 86 NRC 167 (2017)

tribe is simply afforded a meaningful opportunity to consult on federal actions that affect properties of religious or cultural significance to the tribe; LBP-17-9, 86 NRC 167 (2017)

CONTENTIONS

all parties must disclose and provide all documents and data compilations in the possession, custody, or control of the party that are relevant to the contentions; LBP-17-9, 86 NRC 167 (2017)

CONTENTIONS, ADMISSIBILITY

admissible contention must meet the six pleading standards; LBP-17-8, 86 NRC 138 (2017)

although boards may reformulate contentions, petitioner must provide the information necessary to satisfy the admissibility criteria; LBP-17-7, 86 NRC 59 (2017)

argument challenging applicant's financial capacity is particularly deficient in light of the assumed financial stability of established utilities under NRC regulations; LBP-17-6, 86 NRC 37 (2017)

attempt to require use of a specific methodology for determining acceptance criteria is inadmissible; LBP-17-7, 86 NRC 59 (2017)

board declines to dismiss petition solely on the basis of a technical pleading defect; LBP-17-7, 86 NRC 59 (2017)

board did not supply its own basis for a contention but reasonably reformulated it to clarify the issue for hearing; LBP-17-7, 86 NRC 59 (2017)

board extensively rewrote a contention that was originally one sentence, transforming it into a three-paragraph reformulation; LBP-17-7, 86 NRC 59 (2017)

board may decide a contention admissibility issue on a theory different from that argued by litigants, provided that it explains the specific basis of its ruling and gives litigants a chance to present argument and, where appropriate, evidence regarding the board's new theory; LBP-17-7, 86 NRC 59 (2017)

board may not provide any legal support or a reasoned basis or explanation for a conclusion not provided by petitioners or connect arguments or support from separate contentions in a manner that is not clearly and explicitly pleaded by petitioner; LBP-17-7, 86 NRC 59 (2017)

board submitted a reformulated contention to the parties for review and then rewrote the contention again based on their comments; LBP-17-7, 86 NRC 59 (2017)

board will not reject a contention filed by a pro se petitioner because it did not use specific words to connect its allegations to NRC Staff's ultimate findings; LBP-17-7, 86 NRC 59 (2017)

board will not require procedural formalism from a pro se petitioner in order to reject an otherwise valid contention; LBP-17-7, 86 NRC 59 (2017)

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boards admit contentions, not bases, and it is appropriate to adopt a simplified version of NRC Staff's proposed reformulation that focuses solely on the representativeness of the test program and the corresponding consequences; LBP-17-7, 86 NRC 59 (2017)

boards are authorized under 10 C.F.R. 2.319(j) and 2.329(c)(1) to reformulate contentions; LBP-17-7, 86 NRC 59 (2017)

boards do not adjudicate disputed facts at the contention admission stage; LBP-17-8, 86 NRC 138 (2017)

boards do not decide which side has the better argument on the merits; LBP-17-7, 86 NRC 59 (2017)

boards may consider the readily apparent legal implications of a pro se petitioner's arguments, even if not expressly stated in the petition; LBP-17-7, 86 NRC 59 (2017)

boards may hold conferences before or during a hearing for the simplification of contentions; LBP-17-7, 86 NRC 59 (2017)

challenges to an environmental impact statement must be based on documents or other information available at the time the petition is to be filed; LBP-17-8, 86 NRC 138 (2017)

Commission's intent in revising admissibility requirements was not to put up a fortress to deny intervention, but rather to ensure that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions; LBP-17-8, 86 NRC 138 (2017)

contention admissibility criteria are the result of a major rule change that sought to raise the threshold bar for an admissible contention; LBP-17-8, 86 NRC 138 (2017)

contention admission standard of 10 C.F.R. 2.309(f)(1) is strict by design; LBP-17-6, 86 NRC 37 (2017)

contention arguing that license amendment request misconstrues the effects of alkali-silica reaction acting within the restraint imposed by reinforcing steel and that serious and rapid degradation of the concrete may go unnoticed is decided; LBP-17-7, 86 NRC 59 (2017)

contention claims that applicant's bankruptcy filing means that combined license application no longer demonstrates that applicant is financially qualified to cover the construction and fuel cycle costs; CLI-17-12, 86 NRC 215 (2017)

contention must be within the scope of the proceeding, which is defined by the Commission in its initial hearing notice; LBP-17-7, 86 NRC 59 (2017)

contention must challenge, at the earliest opportunity available, whether it would be lawful for language similar to that in applicant's environmental report ultimately to be included in the NRC's environmental impact statement; LBP-17-8, 86 NRC 138 (2017)

contention must identify the specific issues intended to be raised, the basis for each issue, the facts and expert opinions on which it relies, and the specific sections of the license amendment request challenged; LBP-17-7, 86 NRC 59 (2017)

contention must meet six pleading requirements; LBP-17-7, 86 NRC 59 (2017)

contention questioning whether test program is truly representative of concrete is admissible; LBP-17-7, 86 NRC 59 (2017)

contention that bankruptcy casts doubt on applicant's ability to secure external funding for construction costs is inadmissible for failure to raise a genuine dispute on a material issue of law or fact; LBP-17-6, 86 NRC 37 (2017)

contention that environmental report for small modular reactor early site permit does not address consequences of a fire in the spent fuel storage pool or demonstrate that a pool fire is remote and speculative is inadmissible; LBP-17-8, 86 NRC 138 (2017)

contention that is merely a restatement of another would be rejected as duplicative; LBP-17-7, 86 NRC 59 (2017)

contention that test program does not sufficiently account for concrete with respect to age, length of time alkali-silica reaction has propagated, and effects of freshwater at varying levels, salt in the water at varying levels of height and concentration, heat, and radiation is admissible; LBP-17-7, 86 NRC 59 (2017)

contention was inadmissible because arguments underlying the contention didn't raise a genuine dispute on a material issue of law or fact; CLI-17-12, 86 NRC 215 (2017)

contentions cannot be based on speculation but must have some reasonably specific factual or legal basis; CLI-17-12, 86 NRC 215 (2017)

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contentions in license amendment proceeding must focus on the issues identified in the hearing notice, the license amendment application, and NRC Staff's environmental responsibilities relating to the application; LBP-17-7, 86 NRC 59 (2017)

contentions that challenge economic, technical, or other benefits and costs of a small modular reactor are not appropriate at the early site permit stage; LBP-17-8, 86 NRC 138 (2017)

demonstrating a genuine dispute of fact or law requires petitioner to show specific ties to NRC regulatory requirements or to safety in general; LBP-17-7, 86 NRC 59 (2017)

factual support required for contention admission need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand a summary disposition motion; LBP-17-8, 86 NRC 138 (2017)

filing of an environmental concern based on the environmental report will not be deferred because NRC Staff may provide a different analysis in its environmental impact statement; LBP-17-8, 86 NRC 138 (2017)

for any new arguments or new support for a contention, petitioner must, among other things, explain why it could not have raised the argument or introduced the factual support earlier; CLI-17-12, 86 NRC 215 (2017)

if contention as originally pleaded did not cite adequate documentary support, petitioner cannot remediate the deficiency by introducing in the reply, documents that were available to it during the time frame for initially filing contentions; LBP-17-6, 86 NRC 37 (2017)

if petitioner tries belatedly to challenge a defect in an environmental impact statement that should have been apparent from applicant's environmental report, it generally will not be allowed to do so; LBP-17-8, 86 NRC 138 (2017)

in the case of environmental contentions, participants shall file contentions based on applicant's environmental report; LBP-17-8, 86 NRC 138 (2017)

issue of sea level rise is outside the scope of a license amendment request; LBP-17-7, 86 NRC 59 (2017)

legal analysis of board authority to rewrite contentions has been cited with approval by the Commission; LBP-17-7, 86 NRC 59 (2017)

licensing boards are expected to reformulate contentions to eliminate extraneous issues or to consolidate issues for a more efficient proceeding; LBP-17-7, 86 NRC 59 (2017)

licensing boards should not accept in individual license proceedings contentions that are or are about to become the subject of general rulemaking by the Commission; LBP-17-7, 86 NRC 59 (2017); LBP-17-8, 86 NRC 138 (2017)

materiality in the context of section 2.309(c)(1)(ii) relates to the magnitude of the difference between previously available information and currently available information; LBP-17-6, 86 NRC 37 (2017)

mere notice pleading is insufficient for admission of a contention; LBP-17-8, 86 NRC 138 (2017)

nothing in contention admissibility requirements prohibits a board from citing Commission decisions, agency regulations, or other relevant legal support not cited by a petitioner, or from providing its own reasoned explanation for its conclusions; LBP-17-7, 86 NRC 59 (2017)

NRC Staff is authorized to propose a reformulation of a petitioner's contentions as part of its authority to address its view of the admissibility of petitioner's proffered contentions; LBP-17-7, 86 NRC 59 (2017)

NRC Staff's assurances are not a proper basis for rejecting a contention prior to issuance of the environmental impact statement; LBP-17-8, 86 NRC 138 (2017)

opinion testimony that states a legal standard or draws a legal conclusion by applying law to the facts is generally inadmissible; LBP-17-8, 86 NRC 138 (2017)

petitioner at the contention admission stage need not set forth all evidence on which it may rely at later stages of the proceeding; LBP-17-7, 86 NRC 59 (2017)

petitioner cannot remediate a deficiency by introducing documents in its reply that were available to it during the time frame for initially filing contentions; CLI-17-12, 86 NRC 215 (2017)

petitioner does not have to prove its contentions at the admissibility stage; LBP-17-8, 86 NRC 138 (2017)

petitioner must provide sufficient information to show a genuine dispute concerning a material issue of law or fact, including references to specific portions of the application that petitioner disputes; LBP-17-7, 86 NRC 59 (2017)

petitioner must state asserted facts or expert opinions that support petitioner's position and on which the petitioner intends to rely at hearing; CLI-17-12, 86 NRC 215 (2017)

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- petitioner need not introduce at the contention phase every document on which it will rely in a hearing; LBP-17-6, 86 NRC 37 (2017)
- petitioners are not required to provide expert or factual support at the contention admission stage in the form or of the quality necessary to withstand a summary disposition motion; LBP-17-7, 86 NRC 59 (2017)
- petitioners have an ironclad obligation to raise issues in licensing proceedings as soon as the information becomes available to them; LBP-17-8, 86 NRC 138 (2017)
- petitioners may not rely on bare assertions and speculation to support their proffered contention; LBP-17-6, 86 NRC 37 (2017)
- pleading rules are strict by design; LBP-17-8, 86 NRC 138 (2017)
- raised threshold incorporated into contention rule must be reasonably applied and is not to be mechanically construed; LBP-17-7, 86 NRC 59 (2017)
- regulation is not subject to challenge in a proceeding absent a waiver request showing special circumstances; LBP-17-7, 86 NRC 59 (2017)
- requirement to demonstrate a genuine dispute of material fact at the summary disposition stage requires a more rigorous evidentiary showing than that required to establish an admissible contention; LBP-17-7, 86 NRC 59 (2017)
- requiring petitioners to proffer conclusive support for the effect of their proposed contention would improperly require boards to adjudicate the merits of contentions before admitting them; LBP-17-7, 86 NRC 59 (2017)
- safety-related contentions must challenge the adequacy of a license application, not the adequacy of NRC Staff's review; LBP-17-6, 86 NRC 37 (2017)
- significant link between the claimed deficiency in the application and the agency's ultimate determination whether the applicant will adequately protect the health and safety of the public and the environment is required; LBP-17-7, 86 NRC 59 (2017)
- support required for contention admission is a minimal showing that material facts are in dispute, thereby demonstrating that an inquiry in depth is appropriate; LBP-17-8, 86 NRC 138 (2017)
- technical issue should be addressed after a contention is admitted; LBP-17-7, 86 NRC 59 (2017)
- to the extent that new and materially different information were to come to light casting legitimate doubt on applicant's financial qualifications to construct new units, petitioners would not be foreclosed from seeking to reopen the record; LBP-17-6, 86 NRC 37 (2017)
- when information in NRC Staff's environmental review document is sufficiently similar to applicant's environmental report, an existing contention based on the environmental report can migrate to apply to the Staff's review document as it applied to the environmental report; LBP-17-8, 86 NRC 138 (2017)
- when information in the final environmental impact statement is sufficiently similar to NRC Staff's draft environmental impact statement, an existing contention based on the DEIS can migrate to apply to the FEIS as it applied to the DEIS; LBP-17-9, 86 NRC 167 (2017)
- COOLANT SYSTEM, MAIN**
- request for enforcement action to address automatic reactor trip from full power caused by undervoltage condition on buses that power reactor coolant pumps is denied; DD-17-4, 86 NRC 229 (2017)
- COSTS**
- if costs of obtaining information are exorbitant, the agency must include information required by 40 C.F.R. 1502.22(b) in the final supplemental environmental impact statement; LBP-17-9, 86 NRC 167 (2017)
- if incomplete information is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall obtain the information and include it in the environmental impact statement; LBP-17-9, 86 NRC 167 (2017)
- state may grant utility's request for advanced nuclear cost recovery for preconstruction and construction activities if the utility shows that the plant remains feasible and projected costs are reasonable; LBP-17-6, 86 NRC 37 (2017)
- COUNSEL**
- adherence to procedural rules by those who are cognizant of those rules and represented by counsel is especially important; LBP-17-8, 86 NRC 138 (2017)
- board's unwillingness to forgive a 2-week filing delay by organizations represented by counsel was neither an abuse of discretion nor founded on an error of law; LBP-17-8, 86 NRC 138 (2017)

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parties' counsel have an ethical obligation to make reasonable efforts to expedite litigation in a manner consistent with their party's interests; LBP-17-9, 86 NRC 167 (2017)
petitioners represented by counsel are generally held to a higher standard than pro se litigants; LBP-17-8, 86 NRC 138 (2017)

CRITICALITY

nuclear criticality is a legitimate concern in the context of license to operate a mixed oxide fuel fabrication facility; LBP-17-7, 86 NRC 59 (2017)

CULTURAL RESOURCES

agencies must consider the unique interests and viewpoints of Native Americans in determining what to place on the National Register, such that properties of traditional religious and cultural importance to an Indian tribe may be determined to be eligible for inclusion on the National Register; LBP-17-9, 86 NRC 167 (2017)

agencies routinely rely on qualified agency social scientists as trained ethnographers to carry out the cultural surveys and analysis, with significant input, participation, and consultation from relevant tribes, without any mandate that a certain tribe conduct the survey; LBP-17-9, 86 NRC 167 (2017)

consultation efforts must recognize the government-to-government relationship between the federal government and Indian tribes and be sensitive to the needs of the tribal participants; LBP-17-9, 86 NRC 167 (2017)

each agency during the consultation process must gather information from any Indian tribe to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register; LBP-17-9, 86 NRC 167 (2017)

federal agency shall consult with any Indian tribe that attaches religious and cultural significance to eligible properties; LBP-17-9, 86 NRC 167 (2017)

if NRC Staff chooses a methodology that does not include complete information about adverse effects on a tribe's cultural resources, Staff would need to include an explanation that satisfies the requirements of 40 C.F.R. 1502.22; LBP-17-9, 86 NRC 167 (2017)

prior to approving any undertaking, federal agencies must take into account the effect of the undertaking on any historic property; LBP-17-9, 86 NRC 167 (2017)

tribe is simply afforded a meaningful opportunity to consult on federal actions that affect properties of religious or cultural significance to the tribe; LBP-17-9, 86 NRC 167 (2017)

CULTURAL SENSITIVITY

consultation efforts must recognize the government-to-government relationship between the federal government and Indian tribes and be sensitive to the needs of the tribal participants; LBP-17-9, 86 NRC 167 (2017)

DECISION ON THE MERITS

at the contention admissibility stage, boards do not decide which side has the better argument on the merits; LBP-17-7, 86 NRC 59 (2017)

boards are to avoid the familiar trap of confusing the standing determination with the assessment of petitioner's case on the merits; LBP-17-7, 86 NRC 59 (2017)

fundamental principle is that the ultimate merits of the case have no bearing on the threshold question of standing; LBP-17-7, 86 NRC 59 (2017)

requiring petitioners to proffer conclusive support for the effect of their proposed contention would improperly require boards to adjudicate the merits of contentions before admitting them; LBP-17-7, 86 NRC 59 (2017)

standing is a threshold legal question that does not require an assessment of the petitioner's case on the merits; LBP-17-7, 86 NRC 59 (2017)

DECISIONS

See Initial Decisions; Intervention Rulings; Licensing Board Decisions; Record of Decision

DEFICIENCIES

NRC Staff is free to select whatever course of action it deems appropriate to address final supplemental environmental impact statement deficiencies as long as its chosen method utilizes a systematic, interdisciplinary approach that will ensure integrated use of natural and social sciences; LBP-17-9, 86 NRC 167 (2017)

DEFINITIONS

early site permit is a partial construction permit; LBP-17-8, 86 NRC 138 (2017)

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- “historic property” includes any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register; LBP-17-9, 86 NRC 184 n.87 (2017); LBP-17-9, 86 NRC 167 (2017)
- “materially” describes the type or degree of difference between the new information and previously available information that a petitioner must establish, and is synonymous with, “significantly,” “considerably,” or “importantly; LBP-17-6, 86 NRC 37 (2017)
- maximum contaminant levels for drinking water are the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety; LBP-17-5, 86 NRC 1 (2017)
- organization, like an individual, is entitled to the benefit of the proximity presumption when it applies because an organization, like an individual, is considered a “person”; LBP-17-7, 86 NRC 59 (2017)
- “participant” includes any interested local governmental body that seeks to participate in a proceeding under section 2.315(c); LBP-17-6, 86 NRC 37 (2017)
- DELAY**
- board’s unwillingness to forgive a 2-week filing delay by organizations represented by counsel was neither an abuse of discretion nor founded on an error of law; LBP-17-8, 86 NRC 138 (2017)
- delay in seeking an extension of time because organization had not yet decided whether to join in a petition to intervene does not constitute good cause for failure to file a timely petition; LBP-17-8, 86 NRC 138 (2017)
- pro se litigant’s representation that it did not understand how the 1-week extension was applied is good cause for late filing; LBP-17-8, 86 NRC 138 (2017)
- DELAY OF PROCEEDING**
- NHPA does not empower an Indian tribe to delay or stall a licensing proceeding just because the tribe dislikes the possible outcome of the consultation process; LBP-17-9, 86 NRC 167 (2017)
- DESIGN**
- requirements for the electric design of nuclear power plants for which a construction permit application was submitted after the Commission promulgated the General Design Criteria are discussed; DD-17-4, 86 NRC 229 (2017)
- See also Reactor Design; Seismic Design
- DESIGN BASIS ACCIDENT**
- likelihood of a design basis accident concurrent with an open phase condition resulting in the plant exceeding criteria specified in this section would be small; DD-17-4, 86 NRC 229 (2017)
- DESIGN CERTIFICATION**
- combined license application may incorporate AP1000 design control document by reference; LBP-17-6, 86 NRC 37 (2017)
- DISCLOSURE**
- all parties must disclose and provide all documents and data compilations in the possession, custody, or control of the party that are relevant to the contentions; LBP-17-9, 86 NRC 167 (2017)
- applicants may withhold from public disclosure trade secrets and commercial or financial information obtained from a person and privileged or confidential; LBP-17-7, 86 NRC 59 (2017)
- because mandatory disclosures are the only form of discovery in Subpart L proceedings, they cover a vast array of information and documents that are not evidence and need not meet the requirements of admissible evidence; LBP-17-9, 86 NRC 167 (2017)
- board ruling on its motion for summary disposition means that NRC Staff no longer has a continuing obligation to disclose documents relevant to that contention; LBP-17-9, 86 NRC 167 (2017)
- each party’s duty to submit mandatory disclosures is ongoing, and each party must make the mandatory disclosures once a month and without the filing of a discovery request by other parties; LBP-17-9, 86 NRC 167 (2017)
- parties’ proposed questions in Subpart L hearings must be kept by the board in confidence until they are either propounded by the board, or until issuance of the initial decision on the issue being litigated; LBP-17-5, 86 NRC 1 (2017)
- scope of mandatory disclosures is wide-reaching; LBP-17-9, 86 NRC 167 (2017)
- with contention still pending, parties must continue to disclose any documents relevant to NRC Staff’s efforts to resolve deficiencies identified in the board decision, in general, and any documents pertaining

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to the selection of a preferred methodology for Native American cultural resources, in particular;
LBP-17-9, 86 NRC 167 (2017)

DISCOVERY

because mandatory disclosures are the only form of discovery in Subpart L proceedings, they cover a vast array of information and documents that are not evidence and need not meet the requirements of admissible evidence; LBP-17-9, 86 NRC 167 (2017)

each party's duty to submit mandatory disclosures is ongoing, and each party must make the mandatory disclosures once a month and without the filing of a discovery request by other parties; LBP-17-9, 86 NRC 167 (2017)

general discovery is provided for Subpart L proceedings; LBP-17-9, 86 NRC 167 (2017)

if parties seek, and the board enters, an appropriate protective order, petitioner will be granted access to proprietary information related to its admitted challenges to the license amendment request; LBP-17-7, 86 NRC 59 (2017)

EARLY SITE PERMIT APPLICATION

applicant may (but need not) submit as part of its application either complete and integrated emergency plans or major features of its emergency plans; LBP-17-8, 86 NRC 138 (2017)

emergency plans that are not submitted at the early site permit stage are not evaluated by NRC until the combined license stage; LBP-17-8, 86 NRC 138 (2017)

incomplete information at the early site permit stage is not a flaw in an environmental document provided the drafter sets forth and evaluates such information that does exist; LBP-17-8, 86 NRC 138 (2017)

EARLY SITE PERMIT PROCEEDINGS

contention that environmental report for small modular reactor ESP does not address consequences of a fire in the spent fuel storage pool or demonstrate that a pool fire is remote and speculative is inadmissible; LBP-17-8, 86 NRC 138 (2017)

EARLY SITE PERMITS

contentions that challenge economic, technical, or other benefits and costs of a small modular reactor are not appropriate at the ESP stage; LBP-17-8, 86 NRC 138 (2017)

environmental report need not assess economic, technical, or other benefits and costs of the proposed action or an evaluation of alternative energy sources; LBP-17-8, 86 NRC 138 (2017)

ESP is a partial construction permit; LBP-17-8, 86 NRC 138 (2017)

ESP relates only to site suitability; LBP-17-8, 86 NRC 138 (2017)

ELECTRICAL EQUIPMENT

request for enforcement action to address automatic reactor trip from full power caused by undervoltage condition on buses that power reactor coolant pumps is denied; DD-17-4, 86 NRC 229 (2017)

requirements for the electric design of nuclear power plants for which a construction permit application was submitted after the Commission promulgated the General Design Criteria are discussed; DD-17-4, 86 NRC 229 (2017)

EMERGENCY CORE COOLING SYSTEM

open phase condition is a significant safety concern because a concurrent design basis event would in most cases result in the plant exceeding criteria for emergency core cooling systems; DD-17-4, 86 NRC 229 (2017)

EMERGENCY PLANNING ZONES

applicant requests an exemption from the NRC's requirement for establishing a 10-mile emergency planning zone to use a methodology that likely would justify a much smaller emergency planning zone for a small modular reactor; LBP-17-8, 86 NRC 138 (2017)

exact size and configuration of EPZs surrounding a particular nuclear power reactor shall be determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries; LBP-17-7, 86 NRC 59 (2017); LBP-17-8, 86 NRC 138 (2017)

plume exposure pathway EPZ for nuclear power reactors generally shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius; LBP-17-7, 86 NRC 59 (2017); LBP-17-8, 86 NRC 138 (2017)

EMERGENCY PLANS

early site permit applicant may (but need not) submit as part of its application either complete and integrated emergency plans or major features of its emergency plans; LBP-17-8, 86 NRC 138 (2017)

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- plans that are not submitted at the early site permit stage are not evaluated by NRC until the combined license stage; LBP-17-8, 86 NRC 138 (2017)
- ENFORCEMENT**
state agency is responsible for enforcing the terms of its own permit; LBP-17-5, 86 NRC 1 (2017)
See also Request for Action
- ENGINEERED SAFETY FEATURES**
capability of the onsite ESF power system to permit functioning of structures, systems, and components may depend upon successful operation of open phase isolation system is discussed; DD-17-4, 86 NRC 229 (2017)
- ENVIRONMENTAL EFFECTS**
as part of its NEPA analysis, and consistent with the approach outlined in the Council on Environmental Quality's regulations, NRC Staff categorizes the potential environmental impacts on a scale from small to large; LBP-17-5, 86 NRC 1 (2017)
- ENVIRONMENTAL IMPACT STATEMENT**
adverse effects that must be evaluated include ecological, aesthetic, historic, cultural, economic, social, or health effects; LBP-17-9, 86 NRC 167 (2017)
agencies must prepare a detailed EIS for proposed actions significantly affecting the quality of the human environment; LBP-17-9, 86 NRC 167 (2017)
challenges to an EIS must be based on documents or other information available at the time the petition is to be filed; LBP-17-8, 86 NRC 138 (2017)
EIS is not a research document, and, in assessing foreseeable impacts, there will always be more data that could be gathered, so that agencies must have some discretion to draw the line and move forward with decisionmaking; LBP-17-9, 86 NRC 167 (2017)
if incomplete information is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall obtain the information and include it in the EIS; LBP-17-9, 86 NRC 167 (2017)
if information 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 EIS; LBP-17-9, 86 NRC 167 (2017)
issuance of a combined license is a major federal action requiring an EIS; LBP-17-5, 86 NRC 1 (2017)
NEPA does not require agencies to analyze every conceivable aspect of a proposed project; LBP-17-9, 86 NRC 167 (2017)
NEPA requirement to prepare an EIS ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; LBP-17-5, 86 NRC 1 (2017)
NEPA requires that an agency take a hard look at the environmental consequences of a planned action; LBP-17-9, 86 NRC 167 (2017)
NRC Staff may not include information in an EIS if applicant chooses not to address it in the application; LBP-17-8, 86 NRC 138 (2017)
NRC Staff's assurances are not a proper basis for rejecting a contention prior to issuance of the EIS; LBP-17-8, 86 NRC 138 (2017)
to the fullest extent possible, all federal agencies shall include in every major federal action significantly affecting the quality of the human environment, a detailed statement by the responsible official on the environmental impact of the proposed action; LBP-17-5, 86 NRC 1 (2017)
under NEPA's hard look standard, an agency's analysis is adequate if it contains sufficient discussion of the relevant issues and opposing viewpoints, and the agency's decision is fully informed and well considered; LBP-17-5, 86 NRC 1 (2017)
when an agency is unable to obtain complete information to fully assess foreseeable significant adverse effects on the human environment, the agency shall always make clear that such information is lacking; LBP-17-9, 86 NRC 167 (2017)
See also Final Environmental Impact Statement; Supplemental Environmental Impact Statement
- ENVIRONMENTAL ISSUES**
board's ultimate NEPA judgments are made on the basis of the entire adjudicatory record in addition to NRC Staff's final supplemental environmental impact statement; LBP-17-9, 86 NRC 167 (2017)

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filing of an environmental concern based on the environmental report will not be deferred because NRC Staff may provide a different analysis in its environmental impact statement; LBP-17-8, 86 NRC 138 (2017)

if petitioner tries belatedly to challenge a defect in an environmental impact statement that should have been apparent from the applicant's environmental report, it generally will not be allowed to do so; LBP-17-8, 86 NRC 138 (2017)

in the case of environmental contentions, participants shall file contentions based on applicant's environmental report; LBP-17-8, 86 NRC 138 (2017)

NRC Staff bears the burden of proof in proceedings involving NEPA contentions because it has the statutory obligation of complying with NEPA; LBP-17-5, 86 NRC 1 (2017)

ENVIRONMENTAL REPORT

contention must challenge, at the earliest opportunity available, whether it would be lawful for language similar to that in applicant's ER ultimately to be included in the NRC's environmental impact statement; LBP-17-8, 86 NRC 138 (2017)

early site permit ER need not assess economic, technical, or other benefits and costs of the proposed action or evaluation of alternative energy sources; LBP-17-8, 86 NRC 138 (2017)

incomplete information at the early site permit stage is not a flaw in an environmental document provided the drafter sets forth and evaluates such information that does exist; LBP-17-8, 86 NRC 138 (2017)

NRC Staff may not include information in an environmental impact statement if applicant chooses not to address it in the application; LBP-17-8, 86 NRC 138 (2017)

safety regulation in 10 C.F.R. 50.150(a)(3) has no bearing on the question of whether applicant's environmental report must include an analysis of the consequences of spent pool fires; LBP-17-8, 86 NRC 138 (2017)

ENVIRONMENTAL REVIEW

agencies need not consider risks that are remote and speculative or events that have a very low probability of occurring; LBP-17-5, 86 NRC 1 (2017); LBP-17-9, 86 NRC 167 (2017)

although NEPA establishes a national policy in favor of protecting the environment, it does not require the agency to select the most environmentally benign alternative, but rather merely prohibits uninformed, rather than unwise, agency action; LBP-17-5, 86 NRC 1 (2017)

as part of its NEPA analysis, and consistent with the approach outlined in the Council on Environmental Quality's regulations, NRC Staff categorizes the potential environmental impacts on a scale from small to large; LBP-17-5, 86 NRC 1 (2017)

environmental impact statement is not a research document, and, in assessing foreseeable impacts, there will always be more data that could be gathered, so that agencies must have some discretion to draw the line and move forward with decisionmaking; LBP-17-9, 86 NRC 167 (2017)

if adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs; LBP-17-5, 86 NRC 1 (2017)

if NRC Staff chooses a methodology that does not include complete information about adverse effects on a tribe's cultural resources, Staff would need to include an explanation that satisfies the requirements of 40 C.F.R. 1502.22; LBP-17-9, 86 NRC 167 (2017)

in assessing environmental impacts, NRC is not required to use the best scientific methodology or study phenomena for which there are not yet standard methods of measurement or analysis; LBP-17-9, 86 NRC 167 (2017)

it is inappropriate for board to direct NRC Staff in the completion of its NEPA review activities, but the boards are given the responsibility to manage the schedule for the adjudicatory proceeding; LBP-17-9, 86 NRC 167 (2017)

NEPA allows agencies to select their own methodology as long as that methodology is reasonable; LBP-17-5, 86 NRC 1 (2017); LBP-17-9, 86 NRC 167 (2017)

NEPA does not call for certainty or precision, but an estimate of anticipated (not unduly speculative) impacts; LBP-17-5, 86 NRC 1 (2017)

NEPA does not require NRC Staff to analyze every conceivable aspect of a proposed project; LBP-17-5, 86 NRC 1 (2017)

NEPA itself does not mandate particular results, but simply prescribes the necessary process; LBP-17-5, 86 NRC 1 (2017)

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NEPA seeks to ensure that an agency considers every significant aspect of the environmental impact of a proposed action and informs the public that it has, in fact, considered environmental concerns in its decision-making process; LBP-17-9, 86 NRC 167 (2017)

NEPA should be construed in the light of reason if it is not to demand virtually infinite study and resources; LBP-17-5, 86 NRC 1 (2017)

NEPA's requisite hard look is subject to a rule of reason; LBP-17-5, 86 NRC 1 (2017); LBP-17-9, 86 NRC 167 (2017)

NRC Staff is free to select whatever course of action it deems appropriate to address final supplemental environmental impact statement deficiencies as long as its chosen method utilizes a systematic, interdisciplinary approach that will ensure integrated use of natural and social sciences; LBP-17-9, 86 NRC 167 (2017)

to carry its burden of proof on environmental issues, NRC Staff must establish that its position is supported by a preponderance of the evidence; LBP-17-5, 86 NRC 1 (2017)

under NEPA's hard look standard, an agency's analysis is adequate if it contains sufficient discussion of the relevant issues and opposing viewpoints, and the agency's decision is fully informed and well considered; LBP-17-5, 86 NRC 1 (2017)

while there will always be more data that could be gathered, agencies must have some discretion to draw the line and move forward with decisionmaking; LBP-17-5, 86 NRC 1 (2017)

ERROR

board's unwillingness to forgive a 2-week filing delay by organizations represented by counsel was neither an abuse of discretion nor founded on an error of law; LBP-17-8, 86 NRC 138 (2017)

recitation of appellant's prior positions in a proceeding or statement of general disagreement with a decision's result is not sufficient to demonstrate an error of law or abuse of discretion; CLI-17-12, 86 NRC 215 (2017)

ETHICAL ISSUES

parties' counsel have an ethical obligation to make reasonable efforts to expedite litigation in a manner consistent with their party's interests; LBP-17-9, 86 NRC 167 (2017)

EVIDENCE

factual support required for contention admission need not be in affidavit or formal evidentiary form or of the quality necessary to withstand a summary disposition motion; LBP-17-8, 86 NRC 138 (2017)

opponent of summary disposition is to be believed, and all justifiable inferences are to be drawn in favor of his evidence; LBP-17-9, 86 NRC 167 (2017)

petitioner at the contention admission stage need not set forth all evidence on which it may rely at later stages of the proceeding; LBP-17-7, 86 NRC 59 (2017)

petitioner need not introduce at the contention phase every document on which it will rely in a hearing; LBP-17-6, 86 NRC 37 (2017)

petitioners are not required to demonstrate their asserted injury with certainty, or to provide extensive technical studies in support of their standing argument; LBP-17-7, 86 NRC 59 (2017)

requirement to demonstrate a genuine dispute of material fact at the summary disposition stage requires a more rigorous evidentiary showing than that required to establish an admissible contention; LBP-17-7, 86 NRC 59 (2017)

requiring petitioners to proffer conclusive support for the effect of their proposed contention would improperly require boards to adjudicate the merits of contentions before admitting them; LBP-17-7, 86 NRC 59 (2017)

EVIDENTIARY HEARINGS

to carry its burden of proof on environmental issues, NRC Staff must establish that its position is supported by a preponderance of the evidence; LBP-17-5, 86 NRC 1 (2017)

upon admission of a contention the board must identify the specific hearing procedures to be used; LBP-17-8, 86 NRC 138 (2017)

EXCEPTIONS

exception to excluding expert testimony on purely legal issues is for questions of foreign law; LBP-17-8, 86 NRC 138 (2017)

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EXEMPTIONS

although exemption requests themselves do not ordinarily confer hearing rights on interested third parties, exemption requests that are a direct part of an initial licensing or licensing amendment action do; LBP-17-8, 86 NRC 138 (2017)

exemption from NRC's requirement for establishing a 10-mile emergency planning zone to use a methodology that likely would justify a much smaller emergency planning zone for a small modular reactor is discussed; LBP-17-8, 86 NRC 138 (2017)

EXTENSION OF TIME

delay in seeking an extension because organization had not yet decided whether to join in a petition to intervene does not constitute good cause for failure to file a timely petition; LBP-17-8, 86 NRC 138 (2017)

pro se litigant's representation that it did not understand how the 1-week extension was applied is good cause for late filing; LBP-17-8, 86 NRC 138 (2017)

FINAL ENVIRONMENTAL IMPACT STATEMENT

if costs of obtaining information are exorbitant, the agency must include information required by 40 C.F.R. 1502.22(b) in the final supplemental environmental impact statement; LBP-17-9, 86 NRC 167 (2017)

in an NRC adjudicatory hearing, even if a board finds the environmental impact statement inadequate in some respects, the board's findings, as well as the adjudicatory record, become, in effect, part of the final supplemental environmental impact statement; LBP-17-9, 86 NRC 167 (2017)

NRC Staff is free to select whatever course of action it deems appropriate to address final supplemental environmental impact statement deficiencies as long as its chosen method utilizes a systematic, interdisciplinary approach that will ensure integrated use of natural and social sciences; LBP-17-9, 86 NRC 167 (2017)

one can always flyspeck an FEIS to come up with more specifics and more areas of discussion that conceivably could have been included; LBP-17-5, 86 NRC 1 (2017)

when information in the FEIS is sufficiently similar to NRC Staff's draft environmental impact statement, an existing contention based on the DEIS can migrate to apply to the FEIS as it applied to the DEIS; LBP-17-9, 86 NRC 167 (2017)

FINALITY

initial decision constitutes final action of the Commission on the contested matter 120 days after its issuance unless a party files for Commission review within 25 days after service of the decision or the Commission directs otherwise; LBP-17-5, 86 NRC 1 (2017)

FINANCIAL ASSURANCE

established organizations will normally have a history of operating experience and be able to submit financial statements reflecting the financial results of past operations; CLI-17-12, 86 NRC 215 (2017)

reasonable assurance does not mean a demonstration of near certainty that applicant will never be pressed for funds in the course of construction, but instead must merely have a reasonable financing plan in the light of relevant circumstances; LBP-17-6, 86 NRC 37 (2017)

FINANCIAL ASSURANCE PLAN

combined license application should include a brief statement of applicant's general financial plan for financing the cost of the facility, identifying sources on which applicant relies for necessary construction funds; CLI-17-12, 86 NRC 215 (2017); LBP-17-6, 86 NRC 37 (2017)

if combined license applicant is an established organization, it need only provide an estimate of construction costs, the source of construction funds, and its most recent annual financial statement; LBP-17-6, 86 NRC 37 (2017)

FINANCIAL ISSUES

argument challenging applicant's financial capacity is particularly deficient in light of the assumed financial stability of established utilities under NRC regulations; LBP-17-6, 86 NRC 37 (2017)

contention that bankruptcy casts doubt on applicant's ability to secure external funding for construction costs is inadmissible for failure to raise a genuine dispute on a material issue of law or fact; LBP-17-6, 86 NRC 37 (2017)

SUBJECT INDEX

FINANCIAL QUALIFICATIONS

- anticipated difficulties in raising funds are relevant to the reasonable assurance determination, but a showing of some potential difficulty would not necessarily preclude that determination, all other relevant factors being taken into account; CLI-17-12, 86 NRC 215 (2017)
- applicant does not have to demonstrate with near certainty that it will never be pressed for funds in the course of construction, but instead requires only that it have a reasonable financing plan in the light of relevant circumstances; CLI-17-12, 86 NRC 215 (2017)
- applicants must submit the financial qualification information described in 10 C.F.R. 50.33(f)(1); LBP-17-6, 86 NRC 37 (2017)
- claim that combined license applicant will not be able to recover construction costs is not material to applicant's financial qualification; CLI-17-12, 86 NRC 215 (2017)
- combined license applicant that does not qualify as an electric utility must also demonstrate that it is financially qualified to operate the units; CLI-17-12, 86 NRC 215 (2017)
- combined license applicant that is an electric utility must submit information demonstrating that it either possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs; CLI-17-12, 86 NRC 215 (2017)
- combined license applicant that is an established organization should provide an estimate of construction costs, source of construction funds, and financial statements; CLI-17-12, 86 NRC 215 (2017)
- combined license application must demonstrate that applicant is financially qualified to cover the construction and fuel cycle costs for new units; CLI-17-12, 86 NRC 215 (2017); LBP-17-6, 86 NRC 37 (2017)
- contention claims that applicant's bankruptcy filing means that combined license application no longer demonstrates that applicant is financially qualified to cover the construction and fuel cycle costs; CLI-17-12, 86 NRC 215 (2017)
- guidance is provided in 10 C.F.R. Part 50, Appendix C on how a combined license applicant should establish its financial qualification; LBP-17-6, 86 NRC 37 (2017)
- to the extent that new and materially different information were to come to light casting legitimate doubt on applicant's financial qualifications to construct new units, petitioners would not be foreclosed from seeking to reopen the record; LBP-17-6, 86 NRC 37 (2017)

FINANCIAL QUALIFICATIONS REVIEW

- in determining applicant's financial qualification, NRC requires the minimum amount of information necessary for that purpose; LBP-17-6, 86 NRC 37 (2017)

FINANCIAL RESOURCES

- to make a plant feasibility showing, a utility must demonstrate that it has committed sufficient, meaningful, and available resources to enable the project to be completed and that its intent is realistic and practical; LBP-17-6, 86 NRC 37 (2017)

FINDINGS OF FACT

- in an NRC adjudicatory hearing, even if a board finds the environmental impact statement inadequate in some respects, the board's findings, as well as the adjudicatory record, become, in effect, part of the final supplemental environmental impact statement; LBP-17-9, 86 NRC 167 (2017)

FIRES

- contention that environmental report for small modular reactor early site permit does not address consequences of a fire in the spent fuel storage pool or demonstrate that a pool fire is remote and speculative is inadmissible; LBP-17-8, 86 NRC 138 (2017)
- risk of spent fuel pool fires is not characterized as remote and speculative; LBP-17-8, 86 NRC 138 (2017)
- safety regulation in 10 C.F.R. 50.150(a)(3) has no bearing on the question of whether applicant's environmental report must include an analysis of the consequences of spent pool fires; LBP-17-8, 86 NRC 138 (2017)

FOREIGN OWNERSHIP

- applicant whose stock is held by non-U.S. citizens and the majority of whose board of directors and executive officers are non-U.S. citizens fails to comply with foreign ownership requirements; CLI-17-11, 86 NRC 55 (2017)

SUBJECT INDEX

FUEL FABRICATION FACILITY LICENSING

nuclear criticality is a legitimate concern in the context of license to operate a mixed oxide fuel fabrication facility; LBP-17-7, 86 NRC 59 (2017)

GOOD CAUSE

delay in seeking an extension of time because organization had not yet decided whether to join in a petition to intervene does not constitute good cause for failure to file a timely petition; LBP-17-8, 86 NRC 138 (2017)

pro se litigant's representation that it did not understand how the 1-week extension was applied is good cause for late filing; LBP-17-8, 86 NRC 138 (2017)

to intervene in a licensing proceeding after the original deadline prescribed in section 2.309(b) has lapsed, petitioner must satisfy the good cause standard; LBP-17-6, 86 NRC 37 (2017)

GROUNDWATER CONTAMINATION

applicant must demonstrate that the hydrogeologic environment is suitable for waste injection without modifying the ambient water quality of other aquifers overlying the injection zone; LBP-17-5, 86 NRC 1 (2017)

aquifer qualifies as a drinking water supply if it or a portion of it contains total dissolved solids of less than 10,000 milligrams per liter and quantity of groundwater is sufficient to supply a public water system and proposed injection zone is capable of adequately receiving the injected fluid; LBP-17-5, 86 NRC 1 (2017)

regulations governing Class I injection wells require applicant to demonstrate the existence of a confining zone that will prevent fluid migration into the underground source of drinking water; LBP-17-5, 86 NRC 1 (2017)

state underground injection control permitting program seeks to ensure the effectiveness of the hydrogeologic confining zone to prevent upward migration of the injected fluid into any underground source of drinking water; LBP-17-5, 86 NRC 1 (2017)

HEARING DENIALS

appeal of a decision wholly denying a request for hearing lies as a matter of right; CLI-17-12, 86 NRC 215 (2017)

HEARING PROCEDURES

early site permit proceeding may be conducted under the procedures of Subpart L of 10 C.F.R. Part 2; LBP-17-8, 86 NRC 138 (2017)

in most licensing matters, Subpart G procedures will be used only if a contention necessitates resolution of issues of material fact relating to occurrence of a past activity, where the credibility of an eyewitness may reasonably be expected to be at issue, and/or issues of motive or intent of the party or eyewitness are material to the resolution of the contested matter; LBP-17-8, 86 NRC 138 (2017)

unless parties agree otherwise, enforcement matters and licensing of uranium facility construction and operation must be conducted under Subpart G; LBP-17-8, 86 NRC 138 (2017)

upon admission of a contention the board must identify the specific hearing procedures to be used; LBP-17-8, 86 NRC 138 (2017)

HEARING RIGHTS

although exemption requests themselves do not ordinarily confer hearing rights on interested third parties, exemption requests that are a direct part of an initial licensing or licensing amendment action do; LBP-17-8, 86 NRC 138 (2017)

NRC must grant a hearing in a license amendment proceeding upon the request of any person whose interest may be affected by the proceeding; LBP-17-7, 86 NRC 59 (2017)

HISTORIC SITES

federal agency must assess the effects of an undertaking on any eligible historic properties found; LBP-17-9, 86 NRC 167 (2017)

federal agency must consult with a State Historic Preservation Officer and seek the approval of the Advisory Council on Historic Preservation to avoid or mitigate any adverse effects of an undertaking on any eligible historic properties found; LBP-17-9, 86 NRC 167 (2017)

federal agency must make a reasonable and good faith effort to identify historic properties; LBP-17-9, 86 NRC 167 (2017)

SUBJECT INDEX

HYDROGEOLOGY

applicant is required to obtain data on effectiveness of the hydrogeologic confining zone for each of the injection wells it plans to construct at the site; LBP-17-5, 86 NRC 1 (2017)

data collection and tests used to demonstrate confining characteristics for wastewater injection wells are discussed; LBP-17-5, 86 NRC 1 (2017)

state underground injection control permitting program seeks to ensure the effectiveness of the hydrogeologic confining zone to prevent upward migration of the injected fluid into any underground source of drinking water; LBP-17-5, 86 NRC 1 (2017)

where there is limited understanding of geologic confinement or existing information indicates that confinement may be poor or lacking, state underground injection control permitting program requires applicant to first construct an exploratory well; LBP-17-5, 86 NRC 1 (2017)

INITIAL DECISIONS

decision constitutes final action of the Commission on the contested matter 120 days after its issuance unless a party files for Commission review within 25 days after service of the decision or the Commission directs otherwise; LBP-17-5, 86 NRC 1 (2017)

INJURY IN FACT

frustration of an organization's objectives is the type of abstract concern that does not impart standing; LBP-17-7, 86 NRC 59 (2017)

organization's ability to provide services has been perceptibly impaired when defendant's conduct causes an inhibition of the organization's daily operations; LBP-17-7, 86 NRC 59 (2017)

petitioners are not required to demonstrate their asserted injury with certainty, or to provide extensive technical studies in support of their standing argument; LBP-17-7, 86 NRC 59 (2017)

traditional test for standing requires that petitioner make a particularized showing of injury-in-fact caused by the challenged action; LBP-17-7, 86 NRC 59 (2017)

under judicially recognized concepts of standing, magnitude, as distinct from directness, of the injury is not critical to the concerns that underlie the requirement of standing; LBP-17-7, 86 NRC 59 (2017)

INTERESTED GOVERNMENTAL ENTITY

"participant" includes any interested local governmental body that seeks to participate in a proceeding under section 2.315(c); LBP-17-6, 86 NRC 37 (2017)

participation rights of an entity that is admitted to a proceeding as an interested local governmental body are described; LBP-17-5, 86 NRC 1 (2017)

INTERESTED STATE PARTICIPATION

rights of an entity that is admitted to a proceeding as an interested local governmental body are described; LBP-17-5, 86 NRC 1 (2017)

INTERVENTION

although petitioners have standing to intervene and have proffered a timely contention, their contention fails to satisfy the admissibility standards; LBP-17-6, 86 NRC 37 (2017)

to intervene as a party in an adjudicatory proceeding, petitioner must establish standing and proffer at least one admissible contention; LBP-17-8, 86 NRC 138 (2017)

INTERVENTION PETITIONS

at the pleading stage, it is generally sufficient if petitioner provides plausible factual allegations that satisfy each element of standing; LBP-17-7, 86 NRC 59 (2017)

board must accept as true all material allegations of the intervention petition; LBP-17-7, 86 NRC 59 (2017)

boards are to construe petition in favor of the petitioner when determining whether a petitioner has demonstrated standing; LBP-17-8, 86 NRC 138 (2017)

hearing request must contain name, address, and telephone number of requestor or petitioner, nature of the right under the AEA or NEPA to be made a party, nature and extent of property, financial, or other interest, possible effect of any decision or order that may be issued on requestor's/petitioner's interest; LBP-17-7, 86 NRC 59 (2017)

intervention petitioner must not only establish standing, but also must proffer at least one contention that meets the requirements of 10 C.F.R. 2.309(f)(1); LBP-17-7, 86 NRC 59 (2017)

petitioners' reply may not attempt to backstop elemental deficiencies in their original petition to intervene; LBP-17-6, 86 NRC 37 (2017)

SUBJECT INDEX

- signature on intervention petition and reply is a certification that those documents are true and correct; LBP-17-7, 86 NRC 59 (2017)
- INTERVENTION PETITIONS, LATE-FILED**
to intervene in a licensing proceeding after the original deadline prescribed in section 2.309(b) has lapsed, petitioner must satisfy the good cause standard; LBP-17-6, 86 NRC 37 (2017)
- INTERVENTION RULINGS**
boards are to avoid the familiar trap of confusing the standing determination with the assessment of petitioner's case on the merits; LBP-17-7, 86 NRC 59 (2017)
boards have an independent obligation to determine whether petitioners have adequately demonstrated standing even if applicant and NRC Staff do not object; LBP-17-8, 86 NRC 138 (2017)
in ruling on proximity standing, board must decide whether petitioner is located within an appropriate radius of the plant, taking into account the nature of the proposed action and the significance of the radioactive source; LBP-17-7, 86 NRC 59 (2017)
pro se petitioners are held to less rigid pleading standards, so that parties with a clear but imperfectly stated interest in the proceeding are not excluded; LBP-17-7, 86 NRC 59 (2017)
unless an appeal demonstrates an error of law or abuse of discretion, the Commission generally defers to the board on contention admissibility rulings; CLI-17-12, 86 NRC 215 (2017)
- INTERVENTION, LATE**
delay in seeking an extension of time because organization had not yet decided whether to join in a petition to intervene does not constitute good cause for failure to file a timely petition; LBP-17-8, 86 NRC 138 (2017)
- IRRADIATOR**
unlikely, yet plausible, scenario in which an accident of some sort could damage the armored pool containing cobalt-60 at a food processing irradiator facility is a legitimate concern in the context of an operating license; LBP-17-7, 86 NRC 59 (2017)
- LABOR ISSUES**
Commission has rejected proximity standing for certain changes to worker-protection requirements; LBP-17-7, 86 NRC 59 (2017)
- LICENSE AMENDMENT PROCEEDINGS**
Commission has rejected proximity standing for license amendments associated with shutdown and defueled reactors; LBP-17-7, 86 NRC 59 (2017)
See also Operating License Amendment Proceedings
- LICENSE APPLICATIONS**
See Combined License Application; Operating License Amendment Applications
- LICENSE TRANSFER PROCEEDINGS**
Chief Administrative Judge of the Atomic Safety and Licensing Board Panel may serve as presiding officer; CLI-17-11, 86 NRC 55 (2017)
Commission has rejected proximity standing for license transfers; LBP-17-7, 86 NRC 59 (2017)
presiding officer's jurisdiction terminates upon certification of the hearing record to the Commission
- LICENSING BOARD DECISIONS**
board's ultimate NEPA judgments are made on the basis of the entire adjudicatory record in addition to the NRC Staff's final supplemental environmental impact statement; LBP-17-9, 86 NRC 167 (2017)
in an NRC adjudicatory hearing, even if a board finds the environmental impact statement inadequate in some respects, the board's findings, as well as the adjudicatory record, become, in effect, part of the final supplemental environmental impact statement; LBP-17-9, 86 NRC 167 (2017)
- LICENSING BOARDS, AUTHORITY**
board extensively rewrote a contention that was originally one sentence, transforming it into a three-paragraph reformulated contention; LBP-17-7, 86 NRC 59 (2017)
board has authority to deny a motion for summary disposition if it finds there is a material fact in dispute, even if the opposing party fails to make any claim there is a material fact in dispute; LBP-17-9, 86 NRC 167 (2017)
board has the duty to conduct a fair and impartial hearing according to law and has all the powers necessary to those ends; LBP-17-7, 86 NRC 59 (2017)

SUBJECT INDEX

board may decide a contention admissibility issue on a theory different from that argued by litigants, provided that it explains the specific basis of its ruling and gives litigants a chance to present argument and, where appropriate, evidence regarding the board's new theory; LBP-17-7, 86 NRC 59 (2017)

board may not provide any legal support or a reasoned basis or explanation for a conclusion not provided by petitioners or connect arguments or support from separate contentions in a manner that is not clearly and explicitly pleaded by petitioner; LBP-17-7, 86 NRC 59 (2017)

board submitted a reformulated contention to the parties for review and then rewrote the contention again based on their comments; LBP-17-7, 86 NRC 59 (2017)

boards are authorized under 10 C.F.R. 2.319(j) and 2.329(c)(1) to reformulate contentions; LBP-17-7, 86 NRC 59 (2017)

boards may consider the readily apparent legal implications of a pro se petitioner's arguments, even if not expressly stated in the petition; LBP-17-7, 86 NRC 59 (2017)

boards may hold conferences before or during a hearing for the simplification of contentions; LBP-17-7, 86 NRC 59 (2017)

it is inappropriate for boards to direct NRC Staff in completion of its NEPA review activities, but boards are given the responsibility to manage the schedule for the adjudicatory proceeding; LBP-17-9, 86 NRC 167 (2017)

legal analysis of board authority to rewrite contentions has been cited with approval by the Commission; LBP-17-7, 86 NRC 59 (2017)

nothing in contention admissibility requirements prohibits a board from citing Commission decisions, agency regulations, or other relevant legal support not cited by a petitioner, or from providing its own reasoned explanation for its conclusions; LBP-17-7, 86 NRC 59 (2017)

where the Commission has referred a proceeding to the Atomic Safety and Licensing Board Panel without limitations, the board operates under the same scope of review as the Commission; LBP-17-7, 86 NRC 59 (2017)

MATERIALITY

type or degree of difference between new information and previously available information that a petitioner must establish is described and is synonymous with, "significantly," "considerably," or "importantly"; LBP-17-6, 86 NRC 37 (2017)

MAXIMUM CONTAMINANT LEVELS

MCLs for drinking water represent chemical concentrations that EPA has determined will not be harmful to public health, even if injected directly into drinking water; LBP-17-5, 86 NRC 1 (2017)

MCLs for potential carcinogens in drinking water, including heptachlor and tetrachloroethylene, are set at zero for three reasons; LBP-17-5, 86 NRC 1 (2017)

MIGRATION TENET

when information in NRC Staff's environmental review document is sufficiently similar to applicant's environmental report, an existing contention based on the environmental report can migrate to apply to the Staff's review document as it applied to the environmental report; LBP-17-8, 86 NRC 138 (2017)

when information in the final environmental impact statement is sufficiently similar to NRC Staff's draft environmental impact statement, an existing contention based on the DEIS can migrate to apply to the FEIS as it applied to the DEIS; LBP-17-9, 86 NRC 167 (2017)

MONITORING

Class I injection permittees must address their plans to construct wells capable of monitoring absence of fluid movement adjacent to the well bore and long-term effectiveness of the confining zone; LBP-17-5, 86 NRC 1 (2017)

Class I injection permittees must install devices on the injection wells to monitor flow rate and injection pressure; LBP-17-5, 86 NRC 1 (2017)

if NRC Staff were not assured that the proposed monitoring program will accurately monitor alkali-silica reaction advancement, Staff could not plausibly conclude that there is reasonable assurance that public health and safety will not be endangered by operation; LBP-17-7, 86 NRC 59 (2017)

Maintenance Rule requires that if the rate of alkali-silica reaction degradation is changing, licensee must change its monitoring intervals accordingly; LBP-17-7, 86 NRC 59 (2017)

underground injection control programs require permits for the construction and operation of Class I injection wells and subjects permitted wells to detailed monitoring requirements; LBP-17-5, 86 NRC 1 (2017)

SUBJECT INDEX

NATIONAL ENVIRONMENTAL POLICY ACT

- agencies may select their methodology as long as that methodology is reasonable; LBP-17-5, 86 NRC 1 (2017)
- agencies must prepare a detailed environmental impact statement for proposed actions significantly affecting the quality of the human environment; LBP-17-9, 86 NRC 167 (2017)
- agencies must take a hard look at the environmental consequences of each planned action; LBP-17-5, 86 NRC 1 (2017)
- agencies need not consider risks that are remote and speculative or events that have a very low probability of occurring; LBP-17-5, 86 NRC 1 (2017)
- agency is not required to analyze every conceivable aspect of a proposed project; LBP-17-9, 86 NRC 167 (2017)
- agency must take a hard look at the environmental consequences of a planned action; LBP-17-9, 86 NRC 167 (2017)
- although NEPA establishes a national policy in favor of protecting the environment, it does not require the agency to select the most environmentally benign alternative, but rather merely prohibits uninformed, rather than unwise, agency action; LBP-17-5, 86 NRC 1 (2017)
- certainty or precision is not called for, but rather an estimate of anticipated (not unduly speculative) impacts; LBP-17-5, 86 NRC 1 (2017)
- NEPA itself does not mandate particular results, but simply prescribes the necessary process; LBP-17-5, 86 NRC 1 (2017)
- NEPA should be construed in the light of reason if it is not to demand virtually infinite study and resources; LBP-17-5, 86 NRC 1 (2017)
- NRC Staff need not analyze every conceivable aspect of a proposed project; LBP-17-5, 86 NRC 1 (2017)
- principal objectives are to ensure that an agency considers every significant aspect of the environmental impact of a proposed action and informs the public that it has considered environmental concerns in its decisionmaking process; LBP-17-5, 86 NRC 1 (2017)
- requirement to prepare an environmental impact statement ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; LBP-17-5, 86 NRC 1 (2017)
- requisite hard look is subject to a rule of reason; LBP-17-9, 86 NRC 167 (2017)
- to the fullest extent possible, all federal agencies shall include in every major federal action significantly affecting the quality of the human environment, a detailed statement by the responsible official on the environmental impact of the proposed action; LBP-17-5, 86 NRC 1 (2017)

NATIONAL HISTORIC PRESERVATION ACT

- board found that while NRC Staff's initial efforts were inadequate to satisfy the NHPA consultation requirement, by finally offering an in-person meeting with high-level NRC management officials, NRC Staff had met its obligations; LBP-17-9, 86 NRC 167 (2017)
- NHPA does not empower an Indian tribe to delay or stall a licensing proceeding just because the tribe dislikes the possible outcome of the consultation process; LBP-17-9, 86 NRC 167 (2017)
- NRC Staff must provide an opportunity to consult but the Act does not dictate an end result; LBP-17-9, 86 NRC 167 (2017)
- prior to approving any undertaking, federal agencies must take into account the effect of the undertaking on any historic property; LBP-17-9, 86 NRC 167 (2017)
- tribe is simply afforded a meaningful opportunity to consult on federal actions that affect properties of religious or cultural significance to the tribe; LBP-17-9, 86 NRC 167 (2017)

NATIONAL REGISTER OF HISTORIC PLACES

- federal agency must determine whether identified properties are eligible for listing based on the criteria in 36 C.F.R. 60.4; LBP-17-9, 86 NRC 167 (2017)
- "historic property" includes any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register; LBP-17-9, 86 NRC 184 n.87 (2017); LBP-17-9, 86 NRC 167 (2017)

NATIVE AMERICANS

- agencies must consider the unique interests and viewpoints of Native Americans in determining what to place on the National Register, such that properties of traditional religious and cultural importance to an Indian tribe may be determined to be eligible for inclusion; LBP-17-9, 86 NRC 167 (2017)

SUBJECT INDEX

- board found that while NRC Staff's initial efforts were inadequate to satisfy the NHPA consultation requirement, by finally offering an in-person meeting with high-level NRC management officials, NRC Staff had met its obligations; LBP-17-9, 86 NRC 167 (2017)
- consultation efforts must recognize the government-to-government relationship between the federal government and Indian tribes and be sensitive to the needs of the tribal participants; LBP-17-9, 86 NRC 167 (2017)
- each agency during the consultation process must gather information from any Indian tribe to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register; LBP-17-9, 86 NRC 167 (2017)
- federal agency shall consult with any Indian tribe that attaches religious and cultural significance to eligible properties; LBP-17-9, 86 NRC 167 (2017)
- National Historic Preservation Act does not empower an Indian tribe to delay or stall a licensing proceeding just because the tribe dislikes the possible outcome of the consultation process; LBP-17-9, 86 NRC 167 (2017)
- NRC Staff leadership must attend any meeting alongside tribal leadership for such a meeting to constitute government-to-government consultation; LBP-17-9, 86 NRC 167 (2017)
- NO SIGNIFICANT HAZARDS DETERMINATION**
- NRC Staff must determine that an operating license amendment request involves no significant hazards consideration; LBP-17-7, 86 NRC 59 (2017)
- NOTICE OF HEARING**
- notices are the means by which the Commission identifies the subject matter of the hearings and delegates to boards the authority to conduct proceedings; LBP-17-7, 86 NRC 59 (2017)
- NOTICE PLEADING**
- mere notice pleading is insufficient for admission of a contention; LBP-17-8, 86 NRC 138 (2017)
- NRC STAFF**
- presumption of administrative regularity applies to NRC Staff and state regulatory officials in the execution of their official duties; LBP-17-5, 86 NRC 1 (2017)
- Staff is authorized to propose a reformulation of a petitioner's contentions as part of its authority to address its view of the admissibility of the contentions; LBP-17-7, 86 NRC 59 (2017)
- NRC STAFF REVIEW**
- agencies are free to select their own methodology for assessing environmental impacts as long as that methodology is reasonable; LBP-17-9, 86 NRC 167 (2017)
- as part of its NEPA analysis, and consistent with the approach outlined in the Council on Environmental Quality's regulations, Staff categorizes the potential environmental impacts on a scale from small to large; LBP-17-5, 86 NRC 1 (2017)
- emergency plans that are not submitted at the early site permit stage are not evaluated by NRC until the combined license stage; LBP-17-8, 86 NRC 138 (2017)
- if Staff chooses a methodology that does not include complete information about adverse effects on a tribe's cultural resources, Staff would need to include an explanation that satisfies the requirements of 40 C.F.R. 1502.22; LBP-17-9, 86 NRC 167 (2017)
- in assessing environmental impacts, NRC is not required to use the best scientific methodology or study phenomena for which there are not yet standard methods of measurement or analysis; LBP-17-9, 86 NRC 167 (2017)
- it is inappropriate for boards to direct Staff in the completion of its NEPA review activities, but boards are given the responsibility to manage the schedule for the adjudicatory proceeding; LBP-17-9, 86 NRC 167 (2017)
- NEPA does not require Staff to analyze every conceivable aspect of a proposed project; LBP-17-5, 86 NRC 1 (2017)
- NEPA's requisite hard look is subject to a rule of reason; LBP-17-5, 86 NRC 1 (2017)
- prior to license issuance, NRC must find reasonable assurance that activities authorized by an amendment can be conducted without endangering the health and safety of the public and are in compliance with Commission regulations; LBP-17-7, 86 NRC 59 (2017)
- safety-related contentions must challenge the adequacy of a license application, not the adequacy of Staff's review of that application; LBP-17-6, 86 NRC 37 (2017)

SUBJECT INDEX

- Staff bears the burden of proof in proceedings involving NEPA contentions, because it has the statutory obligation of complying with NEPA; LBP-17-5, 86 NRC 1 (2017)
- Staff is free to select whatever course of action it deems appropriate to address final supplemental environmental impact statement deficiencies as long as its chosen method uses a systematic, interdisciplinary approach that will ensure integration of natural and social sciences; LBP-17-9, 86 NRC 167 (2017)
- Staff must determine that an operating license amendment request involves no significant hazards consideration; LBP-17-7, 86 NRC 59 (2017)
- to carry its burden of proof on environmental issues, Staff must establish that its position is supported by a preponderance of the evidence; LBP-17-5, 86 NRC 1 (2017)
- NUCLEAR REGULATORY COMMISSION, AUTHORITY
- Commission refuses to apply its rules of procedure in an overly formalistic manner; LBP-17-6, 86 NRC 37 (2017)
- OPEN PHASE ISOLATION SYSTEM
- capability of the onsite engineered safety features power system to permit functioning of structures, systems, and components may depend upon successful operation of open phase isolation system is discussed; DD-17-4, 86 NRC 229 (2017)
- OPERATING LICENSE AMENDMENT APPLICATIONS
- applicant must 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; LBP-17-7, 86 NRC 59 (2017)
- NRC Staff must determine that an operating license amendment request involves no significant hazards consideration; LBP-17-7, 86 NRC 59 (2017)
- OPERATING LICENSE AMENDMENT PROCEEDINGS
- contentions must focus on the issues identified in the hearing notice, the license amendment application, and NRC Staff's environmental responsibilities relating to the application; LBP-17-7, 86 NRC 59 (2017)
- issue of sea level rise is outside the scope of a license amendment request; LBP-17-7, 86 NRC 59 (2017)
- license amendment that would allow continuing reactor operations despite the acknowledged potential for alkali-silica reaction advancement creates a potential for offsite consequences that would likely affect the geographic area in which petitioner's office is located; LBP-17-7, 86 NRC 59 (2017)
- NRC must grant a hearing upon the request of any person whose interest may be affected by the proceeding; LBP-17-7, 86 NRC 59 (2017)
- petitioner cannot base standing simply on a residence or visits near the plant, unless the proposed action quite obviously entails an increased potential for offsite consequences; LBP-17-7, 86 NRC 59 (2017)
- petitioner had standing under the proximity presumption in a case involving relicensing of a research reactor that did not involve new construction; LBP-17-7, 86 NRC 59 (2017)
- proximity presumption applied even though the challenged license amendment affected only petitioner's right to request a hearing on any changes to the material specimen testing schedule that might be proposed at some future date; LBP-17-7, 86 NRC 59 (2017)
- significant link between the claimed deficiency in the application and the agency's ultimate determination whether applicant will adequately protect the health and safety of the public and the environment is required; LBP-17-7, 86 NRC 59 (2017)
- to establish standing, it is sufficient that petitioner has identified some plausible chain of causation, some scenario suggesting how particular license amendments would result in a distinct new harm or threat to petitioner; LBP-17-7, 86 NRC 59 (2017)
- OPERATING LICENSE AMENDMENTS
- prior to license issuance, NRC must find reasonable assurance that activities authorized by an amendment can be conducted without endangering the health and safety of the public and are in compliance with Commission regulations; LBP-17-7, 86 NRC 59 (2017)
- OPINIONS
- opinion testimony that states a legal standard or draws a legal conclusion by applying law to the facts is generally inadmissible; LBP-17-8, 86 NRC 138 (2017)
- PERMITS
- See Early Site Permit Application; Early Site Permit Proceedings; Early Site Permits

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burden of setting forth a clear and coherent argument for standing is on petitioner; LBP-17-7, 86 NRC 59 (2017)

petitioners represented by counsel are generally held to a higher standard than pro se litigants; LBP-17-8, 86 NRC 138 (2017)

pro se petitioners are not held to the same standards of clarity and precision to which a lawyer might reasonably be expected to adhere; LBP-17-7, 86 NRC 59 (2017); LBP-17-8, 86 NRC 138 (2017)

See also Briefs, Appellate; Intervention Petitions; Notice Pleading; Reply Briefs

POWER UPRATE

extended power uprate directly associated with continuing reactor operations is an action similar to that which supports a 50-mile proximity presumption in operating license proceedings; LBP-17-7, 86 NRC 59 (2017)

PREHEARING CONFERENCES

boards may hold conferences before or during a hearing for the simplification of contentions; LBP-17-7, 86 NRC 59 (2017)

PRESIDING OFFICER, AUTHORITY

Chief Administrative Judge of the Atomic Safety and Licensing Board Panel may serve as presiding officer for a license transfer hearing

PRESIDING OFFICER, JURISDICTION

upon certification of the license transfer hearing record to the Commission, presiding officer's jurisdiction terminates

PRESUMPTION

in some instances, representational authorization of a member with personal standing might be presumed; LBP-17-7, 86 NRC 59 (2017)

PRESUMPTION OF REGULARITY

presumption applies to NRC Staff and state regulatory officials in the execution of their official duties; LBP-17-5, 86 NRC 1 (2017)

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applicants may withhold from public disclosure trade secrets and commercial or financial information obtained from a person and privileged or confidential; LBP-17-7, 86 NRC 59 (2017)

PRO SE LITIGANTS

board will not reject a contention filed by a pro se petitioner because it did not use specific words to connect its allegations to NRC Staff's ultimate findings; LBP-17-7, 86 NRC 59 (2017)

board will not require procedural formalism from a pro se petitioner in order to reject an otherwise valid contention; LBP-17-7, 86 NRC 59 (2017)

petitioner's representation that it did not understand how the 1-week extension was applied is good cause for late filing; LBP-17-8, 86 NRC 138 (2017)

petitioners are held to less rigid pleading standards, so that parties with a clear but imperfectly stated interest in the proceeding are not excluded; LBP-17-7, 86 NRC 59 (2017)

petitioners without legal representation are not held to the same standards of clarity and precision to which a lawyer might reasonably be expected to adhere; LBP-17-8, 86 NRC 138 (2017)

PROPRIETARY INFORMATION

if parties seek, and the board enters, an appropriate protective order, petitioner will be granted access to proprietary information related to its admitted challenges; LBP-17-7, 86 NRC 59 (2017)

PROTECTIVE ORDERS

if parties seek, and the board enters, an appropriate protective order, petitioner will be granted access to proprietary information related to its admitted challenges to a license amendment request; LBP-17-7, 86 NRC 59 (2017)

PROXIMITY PRESUMPTION

boards have found standing in cases where the proximity presumption was based on unlikely but plausible risk scenarios; LBP-17-7, 86 NRC 59 (2017)

Commission has rejected proximity standing for certain changes to worker-protection requirements; LBP-17-7, 86 NRC 59 (2017)

Commission has rejected proximity standing for license amendments associated with shutdown and defueled reactors; LBP-17-7, 86 NRC 59 (2017)

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Commission has rejected proximity standing for license transfers; LBP-17-7, 86 NRC 59 (2017)

extended power uprate directly associated with continuing reactor operations is an action similar to that which supports a 50-mile presumption in operating license proceedings; LBP-17-7, 86 NRC 59 (2017)

geographic presumption dispenses with the need for petitioner who lives within 50 miles of the facility at issue to make an affirmative showing of injury, causation, and redressability in certain proceedings, including COL applications; LBP-17-6, 86 NRC 37 (2017)

geographic zone of potential harm for application of proximity presumption in power reactor construction and operating license proceedings is the area within a 50-mile radius of the site; LBP-17-8, 86 NRC 138 (2017)

having a significant property interest within 50 miles of a nuclear power reactor is sufficient to establish standing without the need to make an individualized showing of injury, causation, and redressability; LBP-17-7, 86 NRC 59 (2017)

if the proposed action quite obviously entails an increased potential for offsite consequences, proximity presumption applies; LBP-17-8, 86 NRC 138 (2017)

individual is presumed to have standing to intervene without the need to address traditional judicial standing concepts upon a showing that he or she lives within, or otherwise has frequent contacts with, a geographic zone of potential harm; LBP-17-8, 86 NRC 138 (2017)

living within a specific distance from a nuclear power plant is enough to confer standing on an individual or group in proceedings for construction permits, operating licenses, or significant amendments thereto; LBP-17-7, 86 NRC 59 (2017)

location of petitioner's office within the 10-mile plume exposure pathway EPZ means that it would face a realistic threat of harm if a release from the facility of radioactive material were to occur; LBP-17-7, 86 NRC 59 (2017)

office location as well as a residence may serve as the basis of standing under the proximity presumption; LBP-17-7, 86 NRC 59 (2017)

organization, like an individual, is entitled to the benefit of the proximity presumption when it applies because an organization, like an individual, is considered a "person"; LBP-17-7, 86 NRC 59 (2017)

persons who have frequent contacts in the area near a nuclear power plant are presumed to have standing; LBP-17-7, 86 NRC 59 (2017)

petitioner had standing under the proximity presumption despite licensee's argument that hypothetical accident scenarios underlying the standing argument were incredible because they would first require three independent redundant safety systems to fail; LBP-17-7, 86 NRC 59 (2017)

petitioner had standing under the proximity presumption in a case involving relicensing of a research reactor that did not involve new construction; LBP-17-7, 86 NRC 59 (2017)

petitioner has the burden to show that the proximity presumption should apply; LBP-17-7, 86 NRC 59 (2017)

petitioner in a license amendment case cannot base standing simply on a residence or visits near the plant, unless the proposed action quite obviously entails an increased potential for offsite consequences; LBP-17-7, 86 NRC 59 (2017)

petitioner need not expressly establish the traditional standing elements of injury, causation, or redressability; LBP-17-7, 86 NRC 59 (2017)

petitioner who made only vague and generalized claims supporting his argument for proximity standing had the opportunity to cure on reply the defects in his initial petition; LBP-17-7, 86 NRC 59 (2017)

proximity presumption allows an individual or group living, having frequent contacts, or having a significant property interest within 50 miles of a nuclear power reactor to establish standing without the need to make an individualized showing of injury, causation, and redressability; LBP-17-7, 86 NRC 59 (2017)

proximity presumption rests on licensing board 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; LBP-17-7, 86 NRC 59 (2017); LBP-17-8, 86 NRC 138 (2017)

proximity standing rests on the presumption that an accident associated with the nuclear facility could adversely affect the health and safety of people working or living offsite but within a certain distance of that facility; LBP-17-7, 86 NRC 59 (2017)

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- standing was granted even though the challenged license amendment affected only petitioner's right to request a hearing on any changes to the material specimen testing schedule that might be proposed at some future date; LBP-17-7, 86 NRC 59 (2017)
- when the Commission has found no obvious potential for offsite consequences, it has been because there were no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel; LBP-17-7, 86 NRC 59 (2017)
- whether and at what distance petitioner can be presumed to be affected must be judged on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source; LBP-17-7, 86 NRC 59 (2017)
- RADIOGRAPHY**
- applicant whose stock is held by non-U.S. citizens and the majority of whose board of directors and executive officers are non-U.S. citizens fails to comply with foreign ownership requirements; CLI-17-11, 86 NRC 55 (2017)
- REACTOR DESIGN**
- combined license application may incorporate AP1000 design control document by reference; LBP-17-6, 86 NRC 37 (2017)
- REACTOR OPERATION**
- license amendment that would allow continuing reactor operations despite the acknowledged potential for alkali-silica reaction advancement creates a potential for offsite consequences that would likely affect the geographic area in which petitioner's office is located; LBP-17-7, 86 NRC 59 (2017)
- REACTOR TRIP**
- request for enforcement action to address automatic reactor trip from full power caused by undervoltage condition on buses that power reactor coolant pumps is denied; DD-17-4, 86 NRC 229 (2017)
- REASONABLE ASSURANCE**
- anticipated difficulties in raising funds are relevant to the reasonable assurance determination, but a showing of some potential difficulty would not necessarily preclude that determination, all other relevant factors being taken into account; CLI-17-12, 86 NRC 215 (2017)
- prior to license issuance, NRC must find reasonable assurance that activities authorized by an amendment can be conducted without endangering the health and safety of the public and are in compliance with Commission regulations; LBP-17-7, 86 NRC 59 (2017)
- RECORD OF DECISION**
- board shall provide all proposed questions to the Commission's Secretary for inclusion in the official record of the proceeding; LBP-17-5, 86 NRC 1 (2017)
- REGULATIONS**
- See also Amendment of Regulations; Rules of Practice
- REGULATIONS, INTERPRETATION**
- safety regulation in 10 C.F.R. 50.150(a)(3) has no bearing on the question of whether applicant's environmental report must include an analysis of the consequences of spent pool fires; LBP-17-8, 86 NRC 138 (2017)
- REOPENING A RECORD**
- to the extent that new and materially different information were to come to light casting legitimate doubt on applicant's financial qualifications to construct new units, petitioners would not be foreclosed from seeking to reopen the record; LBP-17-6, 86 NRC 37 (2017)
- REPLY BRIEFS**
- affidavit submitted with reply brief was excluded because it improperly attempted to backstop elemental deficiencies in the original petition to intervene; CLI-17-12, 86 NRC 215 (2017)
- any petition for Commission review and any answer must conform to the requirements of 10 C.F.R. 2.341(b)(2)-(3); LBP-17-5, 86 NRC 1 (2017)
- if contention as originally pleaded did not cite adequate documentary support, petitioner cannot remediate the deficiency by introducing in the reply, documents that were available to it during the time frame for initially filing contentions; CLI-17-12, 86 NRC 215 (2017); LBP-17-6, 86 NRC 37 (2017)
- introduction of new arguments in a reply is prohibited when doing so would unfairly deprive other participants of an opportunity to rebut the new claims; LBP-17-7, 86 NRC 59 (2017)

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petitioner cannot attach an authorization affidavit for standing to its reply because this would deprive the opposing party of the opportunity to challenge the sufficiency of the affidavit; LBP-17-7, 86 NRC 59 (2017)

petitioner may not attempt to backstop elemental deficiencies in their original petition to intervene; LBP-17-6, 86 NRC 37 (2017)

petitioner may, to an extent, use a reply brief to cure deficiencies in an original petition regarding a claim of standing; LBP-17-6, 86 NRC 37 (2017); LBP-17-7, 86 NRC 59 (2017)

petitioner who made only vague and generalized claims supporting his argument for proximity standing had the opportunity to cure on reply the defects in his initial petition; LBP-17-7, 86 NRC 59 (2017)

reply may be used to clarify and to develop information included in its initial petition; LBP-17-7, 86 NRC 59 (2017)

within 25 days after service of a petition for Commission review of an initial decision, parties to the proceeding may file an answer supporting or opposing Commission review; LBP-17-5, 86 NRC 1 (2017)

REQUEST FOR ACTION

petitioners may raise any concerns about putative safety deficiencies through a petition for enforcement action; LBP-17-6, 86 NRC 37 (2017)

request for enforcement action to address automatic reactor trip from full power caused by undervoltage condition on buses that power reactor coolant pumps is denied; DD-17-4, 86 NRC 229 (2017)

section 2.206 provides a process for stakeholders to advance concerns and obtain full or partial relief, or written reasons why the requested relief is not warranted; LBP-17-6, 86 NRC 37 (2017)

where another ongoing proceeding is already addressing petitioners concern, request for enforcement action will be declined; LBP-17-7, 86 NRC 59 (2017)

RESEARCH REACTORS

applicant whose stock is held by non-U.S. citizens and the majority of whose board of directors and executive officers are non-U.S. citizens fails to comply with foreign ownership requirements; CLI-17-11, 86 NRC 55 (2017)

petitioner had standing under the proximity presumption in a case involving relicensing of a research reactor that did not involve new construction; LBP-17-7, 86 NRC 59 (2017)

REVIEW

See Appellate Review; Environmental Review; Financial Qualifications Review; NRC Staff Review; Safety Review

REVIEW, DISCRETIONARY

under 10 C.F.R. 2.341(b)(4)(i)-(v), review is discretionary, and the Commission will grant review of decisions of a presiding officer, giving due weight to the existence of a substantial question for review; CLI-17-12, 86 NRC 215 (2017)

RISKS

boards have found standing in cases where the proximity presumption was based on unlikely but plausible risk scenarios; LBP-17-7, 86 NRC 59 (2017)

spent fuel pool fires are not characterized as remote and speculative; LBP-17-8, 86 NRC 138 (2017)

unlikely, yet plausible, scenario in which an accident of some sort could damage the armored pool containing the cobalt-60 at a food processing irradiator facility is a legitimate concern in the context of on operating license; LBP-17-7, 86 NRC 59 (2017)

when the Commission has found no obvious potential for offsite consequences, it has been because there were no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel; LBP-17-7, 86 NRC 59 (2017)

RULE OF REASON

NEPA should be construed in the light of reason if it is not to demand virtually infinite study and resources; LBP-17-5, 86 NRC 1 (2017)

NEPA's requisite hard look is subject to a rule of reason; LBP-17-5, 86 NRC 1 (2017); LBP-17-9, 86 NRC 167 (2017)

RULEMAKING

licensing boards should not accept in individual license proceedings contentions that are or are about to become the subject of general rulemaking by the Commission; LBP-17-8, 86 NRC 138 (2017)

litigation of matters subject to rulemaking is prohibited; LBP-17-7, 86 NRC 59 (2017)

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RULES OF PRACTICE

- adherence to procedural rules by those who are cognizant of those rules and represented by counsel is especially important; LBP-17-8, 86 NRC 138 (2017)
- admissible contention must meet six pleading requirements; LBP-17-7, 86 NRC 59 (2017); LBP-17-8, 86 NRC 138 (2017)
- although petitioners have standing to intervene and have proffered a timely contention, their contention fails to satisfy the admissibility standards; LBP-17-6, 86 NRC 37 (2017)
- although the proceeding is a simplified hearing governed by Subpart L, in ruling on motions for summary disposition, the presiding officer shall apply the standards for summary disposition set forth in subpart G; LBP-17-9, 86 NRC 167 (2017)
- any petition for Commission review and any answer must conform to the requirements of 10 C.F.R. 2.341(b)(2)-(3); LBP-17-5, 86 NRC 1 (2017)
- appeal of a decision wholly denying a request for hearing lies as a matter of right; CLI-17-12, 86 NRC 215 (2017)
- board refuses to apply procedural rules in an overly formalistic manner; LBP-17-7, 86 NRC 59 (2017)
- boards are authorized under 10 C.F.R. 2.319(j) and 2.329(c)(1) to reformulate contentions; LBP-17-7, 86 NRC 59 (2017)
- Chief Administrative Judge of the Atomic Safety and Licensing Board Panel may serve as presiding officer for a license transfer hearing; CLI-17-11, 86 NRC 55 (2017)
- Commission refuses to apply its rules in an overly formalistic manner; LBP-17-6, 86 NRC 37 (2017)
- Commission's intent in revising contention admissibility requirements was not to put up a fortress to deny intervention, but rather to ensure that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions; LBP-17-8, 86 NRC 138 (2017)
- contention admissibility criteria are the result of a major rule change that sought to toughen NRC rules in a conscious effort to raise the threshold bar for an admissible contention; LBP-17-8, 86 NRC 138 (2017)
- contention admissibility rules are strict by design; LBP-17-8, 86 NRC 138 (2017)
- contention must be within the scope of the proceeding, which is defined by the Commission in its initial hearing notice; LBP-17-7, 86 NRC 59 (2017)
- contention must identify the specific issues intended to be raised, the basis for each issue, the facts and expert opinions on which it relies, and the specific sections of the license amendment request challenged; LBP-17-7, 86 NRC 59 (2017)
- contention was inadmissible because arguments underlying the contention didn't raise a genuine dispute on a material issue of law or fact; CLI-17-12, 86 NRC 215 (2017)
- each party's duty to submit mandatory disclosures is ongoing, and each party must make the mandatory disclosures once a month and without the filing of a discovery request by other parties; LBP-17-9, 86 NRC 167 (2017)
- hearing request must contain name, address, and telephone number of the requestor or petitioner, nature of the requestor's/petitioner's right under the AEA or NEPA to be made a party, nature and extent of requestor's/petitioner's property, financial, or other interest, possible effect of any decision or order that may be issued on the requestor's/petitioner's interest; LBP-17-7, 86 NRC 59 (2017)
- hearing request will be granted if petitioner meets the standing requirements; LBP-17-7, 86 NRC 59 (2017)
- if a party or participant has already satisfied the requirements for standing in the same proceeding in which new or amended contentions are filed, it does not need to do so again; LBP-17-6, 86 NRC 37 (2017)
- initial decision constitutes final action of the Commission on the contested matter 120 days after its issuance unless a party files for Commission review within 25 days after service of the decision or the Commission directs otherwise; LBP-17-5, 86 NRC 1 (2017)
- participation rights of an entity that is admitted to a proceeding as an interested local governmental body are described; LBP-17-5, 86 NRC 1 (2017)
- party who seeks judicial review of an initial decision must first seek Commission review, unless otherwise authorized by law; LBP-17-5, 86 NRC 1 (2017)

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- petitioner must provide sufficient information to show a genuine dispute concerning a material issue of law or fact, including references to specific portions of the application that petitioner disputes; LBP-17-7, 86 NRC 59 (2017)
- petitioner must state asserted facts or expert opinions that support petitioner's position and on which the petitioner intends to rely at hearing; CLI-17-12, 86 NRC 215 (2017)
- petitioners may raise any concerns about putative safety deficiencies through a petition for enforcement action; LBP-17-6, 86 NRC 37 (2017)
- presiding officer's jurisdiction terminates upon certification of the hearing record to the Commission raised threshold incorporated into contention rule must be reasonably applied and is not to be mechanically construed; LBP-17-7, 86 NRC 59 (2017)
- review under 10 C.F.R. 2.341(b)(4)(i)-(v) is discretionary, and the Commission will grant petitions for review of decisions of a presiding officer, giving due weight to the existence of a substantial question for review; CLI-17-12, 86 NRC 215 (2017)
- standards governing summary disposition in Subpart L proceedings are based upon those federal courts apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure; LBP-17-9, 86 NRC 167 (2017)
- summary disposition will be granted if filings in the proceeding, depositions, answers to interrogatories, and admissions on file, plus statements of parties and affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law; LBP-17-9, 86 NRC 167 (2017)
- to intervene as a party in an adjudicatory proceeding, petitioner must establish standing and proffer at least one admissible contention; LBP-17-6, 86 NRC 37 (2017); LBP-17-8, 86 NRC 138 (2017)
- traditional judicial standing concepts require a showing that the individual 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-17-8, 86 NRC 138 (2017)
- SAFE DRINKING WATER ACT**
- federal law delegates enforcement and administration of underground injection control programs to the states; LBP-17-5, 86 NRC 1 (2017)
- Maximum Contaminant Levels for drinking water represent chemical concentrations that EPA has determined will not be harmful to public health, even if injected directly into drinking water; LBP-17-5, 86 NRC 1 (2017)
- SAFE SHUTDOWN EARTHQUAKE**
- structures that must remain functional in the event of a safe shutdown earthquake are referred to as Category I structures; LBP-17-7, 86 NRC 59 (2017)
- SAFETY ISSUES**
- applicant bears the burden of proof in NRC licensing proceedings involving safety-related contentions; LBP-17-5, 86 NRC 1 (2017)
- contentions must challenge the adequacy of a license application, not the adequacy of NRC Staff's review of that application; LBP-17-6, 86 NRC 37 (2017)
- if NRC Staff is not assured that the proposed monitoring program will accurately monitor alkali-silica reaction advancement, Staff could not plausibly conclude that there is reasonable assurance that public health and safety will not be endangered by operation; LBP-17-7, 86 NRC 59 (2017)
- in determining whether a license amendment, construction permit, or early site permit will be issued, the Commission is guided by the considerations that govern issuance of initial licenses, construction permits, or early site permits to the extent applicable and appropriate; LBP-17-7, 86 NRC 59 (2017)
- open phase condition is a significant safety concern because a concurrent design basis event would in most cases result in the plant exceeding criteria for emergency core cooling systems; DD-17-4, 86 NRC 229 (2017)
- petitioners may raise any concerns about putative safety deficiencies through a petition for enforcement action; LBP-17-6, 86 NRC 37 (2017)
- SAFETY REVIEW**
- safety-related contentions must challenge the adequacy of a license application, not the adequacy of NRC Staff's review of that application; LBP-17-6, 86 NRC 37 (2017)

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nuclear power plant structures, systems, and components important to safety must be designed to withstand the effects of earthquakes and other natural phenomena without loss of capability to perform their safety functions; LBP-17-7, 86 NRC 59 (2017)

See also Engineered Safety Features

SEISMIC DESIGN

nuclear power plant structures, systems, and components important to safety must be designed to withstand the effects of earthquakes and other natural phenomena without loss of capability to perform their safety functions; LBP-17-7, 86 NRC 59 (2017)

safety-related structures must be able to withstand an earthquake and other natural disasters within the design basis of the plant; LBP-17-7, 86 NRC 59 (2017)

structures that must remain functional in the event of a safe shutdown earthquake are referred to as Category I structures; LBP-17-7, 86 NRC 59 (2017)

SETTLEMENT JUDGES

parties may request appointment of a settlement judge to conduct settlement negotiations to assist in the resolution of their dispute; LBP-17-9, 86 NRC 167 (2017)

SETTLEMENT NEGOTIATIONS

parties may request appointment of a settlement judge to assist in the resolution of their dispute; LBP-17-9, 86 NRC 167 (2017)

SHUTDOWN

Commission has rejected proximity standing for license amendments associated with shutdown and defueled reactors; LBP-17-7, 86 NRC 59 (2017)

SITE SUITABILITY

early site permit relates only to site suitability; LBP-17-8, 86 NRC 138 (2017)

SMALL MODULAR REACTORS

contention that environmental report for early site permit does not address consequences of a fire in the spent fuel storage pool or demonstrate that a pool fire is remote and speculative is inadmissible; LBP-17-8, 86 NRC 138 (2017)

contentions that challenge economic, technical, or other benefits and costs are not appropriate at the early site permit stage; LBP-17-8, 86 NRC 138 (2017)

environmental report for early site permit need not assess economic, technical, or other benefits and costs of the proposed action or alternative energy sources; LBP-17-8, 86 NRC 138 (2017)

request for exemption from the NRC's requirement for establishing a 10-mile emergency planning zone to use a methodology that likely would justify a much smaller emergency planning zone is discussed; LBP-17-8, 86 NRC 138 (2017)

safety regulation in 10 C.F.R. 50.150(a)(3) has no bearing on the question of whether applicant's environmental report must include an analysis of the consequences of spent pool fires; LBP-17-8, 86 NRC 138 (2017)

specific requirements for analyzing events related to spent fuel accidents do not apply until the combined license stage; LBP-17-8, 86 NRC 138 (2017)

SPENT FUEL POOLS

contention that environmental report for small modular reactor early site permit does not address consequences of a fire in the spent fuel storage pool or demonstrate that a pool fire is remote and speculative is inadmissible; LBP-17-8, 86 NRC 138 (2017)

risk of spent fuel pool fires is not characterized as remote and speculative; LBP-17-8, 86 NRC 138 (2017)

safety regulation in 10 C.F.R. 50.150(a)(3) has no bearing on the question of whether applicant's environmental report must include an analysis of the consequences of spent pool fires; LBP-17-8, 86 NRC 138 (2017)

specific requirements for analyzing events related to spent fuel accidents do not apply until the combined license stage; LBP-17-8, 86 NRC 138 (2017)

STANDARD OF PROOF

preponderance of the evidence standard requires the trier of fact to believe that the existence of a fact is more probable than its nonexistence; LBP-17-5, 86 NRC 1 (2017)

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to carry its burden of proof on environmental issues, NRC Staff must establish that its position is supported by a preponderance of the evidence; LBP-17-5, 86 NRC 1 (2017)
unless an appeal demonstrates an error of law or abuse of discretion, the Commission generally defers to boards on contention admissibility rulings; CLI-17-12, 86 NRC 215 (2017)

STANDARDS OF ETHICAL CONDUCT

board has the duty to conduct a fair and impartial hearing according to law and has all the powers necessary to those ends; LBP-17-7, 86 NRC 59 (2017)
judges shall uphold and apply the law; LBP-17-7, 86 NRC 59 (2017)

STANDING TO INTERVENE

at the pleading stage, it is generally sufficient if petitioner provides plausible factual allegations that satisfy each element of standing; LBP-17-7, 86 NRC 59 (2017)
boards have an independent obligation to determine whether petitioners have adequately demonstrated standing even if applicant and NRC Staff do not object; LBP-17-8, 86 NRC 138 (2017)
boards have found standing in cases where the proximity presumption was based on unlikely but plausible risk scenarios; LBP-17-7, 86 NRC 59 (2017)
boards should construe intervention petition in favor of petitioner when evaluating whether petitioner has met its burden to establish standing; LBP-17-7, 86 NRC 59 (2017)
Commission has rejected proximity standing for certain changes to worker-protection requirements; LBP-17-7, 86 NRC 59 (2017)
Commission has rejected proximity standing for license amendments associated with shutdown and defueled reactors; LBP-17-7, 86 NRC 59 (2017)
Commission has rejected proximity standing for license transfers; LBP-17-7, 86 NRC 59 (2017)
contemporaneous judicial concepts of standing require a showing of a concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision; LBP-17-7, 86 NRC 59 (2017)
extended power uprate directly associated with continuing reactor operations is an action similar to that which supports a 50-mile presumption in operating license proceedings; LBP-17-7, 86 NRC 59 (2017)
fundamental principle is that the ultimate merits of the case have no bearing on the threshold question of standing; LBP-17-7, 86 NRC 59 (2017)
geographic zone of potential harm for application of proximity presumption in power reactor construction and operating license proceedings is the area within a 50-mile radius of the site; LBP-17-8, 86 NRC 138 (2017)
having a significant property interest within 50 miles of a nuclear power reactor is sufficient to establish standing without the need to make an individualized showing of injury, causation, and redressability; LBP-17-7, 86 NRC 59 (2017)
hearing request will be granted if petitioner meets the standing requirements; LBP-17-7, 86 NRC 59 (2017)
if a party or participant has already satisfied the requirements for standing in the same proceeding in which new or amended contentions are filed, it does not need to do so again; LBP-17-6, 86 NRC 37 (2017)
in ruling on proximity standing, board must decide whether petitioner is located within an appropriate radius of the plant, taking into account the nature of the proposed action and the significance of the radioactive source; LBP-17-7, 86 NRC 59 (2017)
individual is presumed to have standing to intervene without the need to address traditional judicial standing concepts upon a showing that he or she lives within, or otherwise has frequent contacts with, a geographic zone of potential harm; LBP-17-8, 86 NRC 138 (2017)
living within a specific distance from a nuclear power plant is enough to confer standing on an individual or group in proceedings for construction permits, operating licenses, or significant amendments thereto; LBP-17-7, 86 NRC 59 (2017)
location of petitioner's office within the 10-mile plume exposure pathway EPZ means that it would face a realistic threat of harm if a release from the facility of radioactive material were to occur; LBP-17-7, 86 NRC 59 (2017)
office location as well as a residence may serve as the basis of standing under the proximity presumption; LBP-17-7, 86 NRC 59 (2017)

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petitioner had standing under the proximity presumption despite licensee's argument that hypothetical accident scenarios underlying the standing argument were incredible because they would first require three independent redundant safety systems to fail; LBP-17-7, 86 NRC 59 (2017)

petitioner had standing under the proximity presumption in a case involving relicensing of a research reactor that did not involve new construction; LBP-17-7, 86 NRC 59 (2017)

petitioner has the burden to show that the proximity presumption should apply; LBP-17-7, 86 NRC 59 (2017)

petitioner in a license amendment case cannot base standing simply on a residence or visits near the plant, unless the proposed action quite obviously entails an increased potential for offsite consequences; LBP-17-7, 86 NRC 59 (2017)

petitioner may provide additional facts and/or argument related to standing in its reply, provided that the new information is reasonably related to the allegations originally presented; LBP-17-7, 86 NRC 59 (2017)

petitioner may, to an extent, use a reply brief to cure deficiencies in an original petition regarding a claim of standing; LBP-17-6, 86 NRC 37 (2017)

petitioner who made only vague and generalized claims supporting his argument for proximity standing had the opportunity to cure on reply the defects in his initial petition; LBP-17-7, 86 NRC 59 (2017)

petitioners are not required to demonstrate their asserted injury with certainty, or to provide extensive technical studies in support of their standing argument; LBP-17-7, 86 NRC 59 (2017)

proximity presumption allows an individual or group living, having frequent contacts, or having a significant property interest within 50 miles of a nuclear power reactor to establish standing without the need to make an individualized showing of injury, causation, and redressability; LBP-17-7, 86 NRC 59 (2017)

proximity presumption applied even though the challenged license amendment affected only petitioner's right to request a hearing on any changes to the material specimen testing schedule that might be proposed at some future date; LBP-17-7, 86 NRC 59 (2017)

proximity presumption applies if the proposed action quite obviously entails an increased potential for offsite consequences; LBP-17-8, 86 NRC 138 (2017)

proximity presumption applies to persons who have frequent contacts in the area near a nuclear power plant; LBP-17-7, 86 NRC 59 (2017)

proximity presumption rests on licensing board 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; LBP-17-7, 86 NRC 59 (2017); LBP-17-8, 86 NRC 138 (2017)

proximity, or geographic, presumption, dispenses with the need for petitioner who lives within 50 miles of the facility at issue to make an affirmative showing of injury, causation, and redressability in certain proceedings, including combined license applications; LBP-17-6, 86 NRC 37 (2017)

regardless of whether intervention petitioner is an individual or an organization, the same showing is required for standing; LBP-17-7, 86 NRC 59 (2017)

satisfaction of traditional test for standing in addition to requirements of proximity presumption is not required; LBP-17-7, 86 NRC 59 (2017)

standing can only be determined based on the pleadings in the case at hand; LBP-17-7, 86 NRC 59 (2017)

standing is a threshold legal question that does not require an assessment of the petitioner's case on the merits; LBP-17-7, 86 NRC 59 (2017)

to establish standing, it is sufficient that petitioner has identified some plausible chain of causation, some scenario suggesting how particular license amendments would result in a distinct new harm or threat to petitioner; LBP-17-7, 86 NRC 59 (2017)

to participate in an NRC licensing proceeding, petitioner must establish standing; LBP-17-6, 86 NRC 37 (2017)

traditional judicial standing concepts require a showing that the individual 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-17-8, 86 NRC 138 (2017)

traditional test for standing requires that petitioner make a particularized showing of injury-in-fact caused by the challenged action; LBP-17-7, 86 NRC 59 (2017)

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- under judicially recognized concepts of standing, magnitude, as distinct from directness, of the injury is not critical to the concerns that underlie the requirement of standing; LBP-17-7, 86 NRC 59 (2017)
- under the proximity presumption, petitioner need not expressly establish the traditional standing elements of injury, causation, or redressability; LBP-17-7, 86 NRC 59 (2017)
- when the Commission has found no obvious potential for offsite consequences, it has been because there were no changes to the physical plant itself, its operating procedures, design basis accident analysis, management, or personnel; LBP-17-7, 86 NRC 59 (2017)
- whether and at what distance petitioner can be presumed to be affected must be judged on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source; LBP-17-7, 86 NRC 59 (2017)
- STANDING TO INTERVENE, ORGANIZATIONAL**
- frustration of an organization's objectives is the type of abstract concern that does not impart standing; LBP-17-7, 86 NRC 59 (2017)
- organization has standing to sue on behalf of its members when its members would otherwise have standing to sue in their own right, interests at stake are germane to organization's purpose, and neither the claim asserted nor the relief requested requires participation of individual members in the lawsuit; LBP-17-8, 86 NRC 138 (2017)
- organization is entitled to the benefit of the proximity presumption when it applies because an organization, like an individual, is considered a "person"; LBP-17-7, 86 NRC 59 (2017)
- organization may establish standing either in its own right or as a representative for an individual; LBP-17-7, 86 NRC 59 (2017)
- organization may intervene based on the interests, germane to the purpose of the organization, of a member or members injured by the proposed actions; LBP-17-7, 86 NRC 59 (2017)
- organization seeking to intervene in its own right must satisfy the same standing requirements of injury, traceability, and redressability as an individual seeking to intervene; LBP-17-7, 86 NRC 59 (2017)
- organization's ability to provide services has been perceptibly impaired when the defendant's conduct causes an inhibition of the organization's daily operations; LBP-17-7, 86 NRC 59 (2017)
- STANDING TO INTERVENE, REPRESENTATIONAL**
- associational standing, generally referred to as representational standing, requires that at least one injured member authorize the organization to represent the member's interests; LBP-17-7, 86 NRC 59 (2017)
- in some instances, representational authorization of a member with personal standing might be presumed; LBP-17-7, 86 NRC 59 (2017)
- not even inherently representative organizations qualify for automatic standing, but instead must satisfy certain requirements before being permitted to represent others; LBP-17-7, 86 NRC 59 (2017)
- organization claiming representational standing must provide an affidavit specifically authorizing the organization to represent the interests of a named member; LBP-17-7, 86 NRC 59 (2017)
- organization has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, interests at stake are germane to organization's purpose, and neither the claim asserted nor the relief requested requires participation of individual members in the lawsuit; LBP-17-8, 86 NRC 138 (2017)
- organization may establish standing either in its own right or as a representative for an individual; LBP-17-7, 86 NRC 59 (2017)
- petitioner cannot attach an authorization affidavit for standing to its reply because this would deprive the opposing party of the opportunity to challenge the sufficiency of the affidavit; LBP-17-7, 86 NRC 59 (2017)
- requirement to provide affidavits from individual members applies when the organization asserts standing to represent the interests of those members; LBP-17-7, 86 NRC 59 (2017)
- standing can be established without an authorization affidavit or declaration when the petition has been signed by a ranking official of the organization who herself has standing; LBP-17-7, 86 NRC 59 (2017)
- STATE GOVERNMENT**
- presumption of administrative regularity applies to NRC Staff and state regulatory officials in the execution of their official duties; LBP-17-5, 86 NRC 1 (2017)
- STATE REGULATORY REQUIREMENTS**
- federal law delegates enforcement and administration of underground injection control programs to the states; LBP-17-5, 86 NRC 1 (2017)

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it is for the state agency to enforce the terms of its own permit; LBP-17-5, 86 NRC 1 (2017)

STRUCTURAL INTEGRITY

if NRC Staff is not assured that the proposed monitoring program will accurately monitor alkali-silica reaction advancement, Staff could not plausibly conclude that there is reasonable assurance that public health and safety will not be endangered by operation; LBP-17-7, 86 NRC 59 (2017)

license amendment that would allow continuing reactor operations despite the acknowledged potential for alkali-silica reaction advancement, creates a potential for offsite consequences that would likely affect the geographic area in which petitioner's office is located; LBP-17-7, 86 NRC 59 (2017)

nuclear power plant structures, systems, and components important to safety must be designed to withstand the effects of earthquakes and other natural phenomena without loss of capability to perform their safety functions; LBP-17-7, 86 NRC 59 (2017)

structures that must remain functional in the event of a safe shutdown earthquake are referred to as Category I structures; LBP-17-7, 86 NRC 59 (2017)

SUBPART G PROCEDURES

in most licensing matters, Subpart G procedures will be used only if a contention necessitates resolution of issues of material fact relating to the occurrence of a past activity, where the credibility of an eyewitness may reasonably be expected to be at issue and/or issues of motive or intent of the party or eyewitness are material to the resolution of the contested matter; LBP-17-8, 86 NRC 138 (2017)

unless parties agree otherwise, enforcement matters and licensing of uranium facility construction and operation must be conducted under Subpart G; LBP-17-8, 86 NRC 138 (2017)

SUBPART L PROCEEDINGS

although the proceeding is a simplified hearing governed by Subpart L, in ruling on motions for summary disposition, the presiding officer shall apply the standards for summary disposition set forth in Subpart G; LBP-17-9, 86 NRC 167 (2017)

because mandatory disclosures are the only form of discovery in Subpart L proceedings, they cover a vast array of information and documents that are not evidence and need not meet the requirements of admissible evidence; LBP-17-9, 86 NRC 167 (2017)

board members ask witnesses questions in those areas that, in the board's judgment, require additional clarification; LBP-17-5, 86 NRC 1 (2017)

general discovery is provided for Subpart L proceedings; LBP-17-9, 86 NRC 167 (2017)

parties' proposed questions must be kept by the board in confidence until they are either propounded by the board, or until issuance of the initial decision on the issue being litigated; LBP-17-5, 86 NRC 1 (2017)

standards governing summary disposition in Subpart L proceedings are based upon those federal courts apply to motions for summary judgment; LBP-17-9, 86 NRC 167 (2017)

Subpart C of 10 C.F.R. Part 2, is generally applicable to all adjudications pursuant to the Atomic Energy Act, including Subpart L proceedings; LBP-17-9, 86 NRC 167 (2017)

SUMMARY DISPOSITION

although the proceeding is a simplified hearing governed by Subpart L, in ruling on motions for summary disposition, the presiding officer shall apply the standards set forth in Subpart G; LBP-17-9, 86 NRC 167 (2017)

board has authority to deny a motion for summary disposition if it finds there is a material fact in dispute, even if the opposing party fails to make any such claim; LBP-17-9, 86 NRC 167 (2017)

board ruling on its motion for summary disposition means that NRC Staff no longer has a continuing obligation to disclose documents relevant to that contention; LBP-17-9, 86 NRC 167 (2017)

board's only role in deciding whether to grant a motion for summary disposition is to determine whether any genuine issue of material fact exists; LBP-17-9, 86 NRC 167 (2017)

board's role in summary disposition should not require it to conduct a trial on the written record by weighing the evidence and endeavoring to determine the truth of the matter; LBP-17-9, 86 NRC 167 (2017)

motion should not be granted if it would require the board make credibility determinations, weigh evidence, or draw legitimate inferences from the facts; LBP-17-9, 86 NRC 167 (2017)

motion will be granted if filings in the proceeding, depositions, answers to interrogatories, and admissions on file, plus statements of parties and affidavits, if any, show that there is no genuine issue as to any

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- material fact and that movant is entitled to a decision as a matter of law; LBP-17-9, 86 NRC 167 (2017)
- movant carries the burden of demonstrating that summary disposition is appropriate and must explain in writing the basis for the motion; LBP-17-9, 86 NRC 167 (2017)
- movant must attach a short and concise statement of the material facts to its motion as to which movant contends that there is no genuine issue to be heard; LBP-17-9, 86 NRC 167 (2017)
- opponent is to be believed, and all justifiable inferences are to be drawn in favor of his evidence; LBP-17-9, 86 NRC 167 (2017)
- requirement to demonstrate a genuine dispute of material fact at the summary disposition stage requires a more rigorous evidentiary showing than that required to establish an admissible contention; LBP-17-7, 86 NRC 59 (2017)
- standards governing summary disposition in Subpart L proceedings are based upon those federal courts apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure; LBP-17-9, 86 NRC 167 (2017)
- to grant summary disposition, board must determine if any material facts remain genuinely in dispute, and, if no such disputes remain, the board must determine if the movant's legal position is correct; LBP-17-9, 86 NRC 167 (2017)
- undisputed facts provide a sufficient basis for a board to rule on a motion for summary disposition as a matter of law; LBP-17-9, 86 NRC 167 (2017)
- SUMMARY JUDGMENT**
- standards governing summary disposition in Subpart L proceedings are based upon those federal courts apply to motions for summary judgment; LBP-17-9, 86 NRC 167 (2017)
- SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT**
- if costs of obtaining information are exorbitant, the agency must include information required by 40 C.F.R. 1502.22(b) in the final SEIS; LBP-17-9, 86 NRC 167 (2017)
- NRC Staff is free to select whatever course of action it deems appropriate to address final SEIS deficiencies as long as its chosen method uses a systematic, interdisciplinary approach that will ensure integrated use of natural and social sciences; LBP-17-9, 86 NRC 167 (2017)
- SURVEYS**
- agencies routinely rely on qualified agency social scientists as trained ethnographers to carry out the cultural surveys and analysis, with significant input, participation, and consultation from relevant tribes, without any mandate that a certain tribe conduct the survey; LBP-17-9, 86 NRC 167 (2017)
- TESTIMONY**
- exception to excluding expert testimony on purely legal issues is for questions of foreign law; LBP-17-8, 86 NRC 138 (2017)
- opinion testimony that states a legal standard or draws a legal conclusion by applying law to the facts is generally inadmissible; LBP-17-8, 86 NRC 138 (2017)
- TESTING**
- contention questioning whether test program is truly representative of concrete is admissible; LBP-17-7, 86 NRC 59 (2017)
- hydrogeological data collection and tests used to demonstrate confining characteristics for wastewater injection wells are discussed; LBP-17-5, 86 NRC 1 (2017)
- UNDERGROUND INJECTION CONTROL PERMIT**
- applicant is required to obtain data on effectiveness of the hydrogeologic confining zone for each of the injection wells it plans to construct at the site; LBP-17-5, 86 NRC 1 (2017)
- applicant must demonstrate that the hydrogeologic environment is suitable for waste injection without modifying the ambient water quality of other aquifers overlying the injection zone; LBP-17-5, 86 NRC 1 (2017)
- Class I injection permittees must address their plans to construct wells capable of monitoring absence of fluid movement adjacent to the well bore and long-term effectiveness of the confining zone; LBP-17-5, 86 NRC 1 (2017)
- Class I injection permittees must install devices on the injection wells to monitor flow rate and injection pressure; LBP-17-5, 86 NRC 1 (2017)
- federal law delegates enforcement and administration of underground injection control programs to the states; LBP-17-5, 86 NRC 1 (2017)

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hydrogeological data collection and tests used to demonstrate confining characteristics for wastewater injection wells are discussed; LBP-17-5, 86 NRC 1 (2017)

information acquired from the well during construction and operational testing informs the state department of environmental protection's decision whether to issue an operation permit; LBP-17-5, 86 NRC 1 (2017)

issuance of a construction permit is conditioned on applicant's demonstration of reasonable assurance that a well, throughout its construction and operation, will comply with the state UIC permitting program; LBP-17-5, 86 NRC 1 (2017)

it is for the state agency to enforce the terms of its own permit; LBP-17-5, 86 NRC 1 (2017)

operation permit must also be obtained from the state department of environmental protection for a Class I injection well; LBP-17-5, 86 NRC 1 (2017)

programs require permits for the construction and operation of Class I injection wells and subject permitted wells to detailed monitoring requirements; LBP-17-5, 86 NRC 1 (2017)

regulations governing Class I injection wells require applicant to demonstrate the existence of a confining zone that will prevent fluid migration into the underground source of drinking water; LBP-17-5, 86 NRC 1 (2017)

state program seeks to ensure effectiveness of the hydrogeologic confining zone to prevent upward migration of the injected fluid into any underground source of drinking water; LBP-17-5, 86 NRC 1 (2017)

where there is limited understanding of geologic confinement or existing information indicates that confinement may be poor or lacking, state UIC permitting program requires applicant to first construct an exploratory well; LBP-17-5, 86 NRC 1 (2017)

WASTEWATER

applicant must demonstrate that the hydrogeologic environment is suitable for waste injection without modifying the ambient water quality of other aquifers overlying the injection zone; LBP-17-5, 86 NRC 1 (2017)

Class I injection permittees must address their plans to construct wells capable of monitoring absence of fluid movement adjacent to the well bore and long-term effectiveness of the confining zone; LBP-17-5, 86 NRC 1 (2017)

Class I injection permittees must install devices on the injection wells to monitor flow rate and injection pressure; LBP-17-5, 86 NRC 1 (2017)

hydrogeological data collection and tests used to demonstrate confining characteristics for wastewater injection wells are discussed; LBP-17-5, 86 NRC 1 (2017)

information acquired from the well during construction and operational testing informs the state department of environmental protection's decision whether to issue an operation permit; LBP-17-5, 86 NRC 1 (2017)

operation permit must also be obtained from the state department of environmental protection for a Class I injection well; LBP-17-5, 86 NRC 1 (2017)

regulations governing Class I injection wells require applicant to demonstrate the existence of a confining zone that will prevent fluid migration into the underground source of drinking water; LBP-17-5, 86 NRC 1 (2017)

total suspended solids must be removed from wastewater and soluble organic matter must be treated; LBP-17-5, 86 NRC 1 (2017)

underground injection control programs require permits for the construction and operation of Class I injection wells and subjects permitted wells to detailed monitoring requirements; LBP-17-5, 86 NRC 1 (2017)

water must be filtered and disinfected to further reduce fecal coliform values; LBP-17-5, 86 NRC 1 (2017)

WATER QUALITY

applicant must demonstrate that the hydrogeologic environment is suitable for waste injection without modifying the ambient water quality of other aquifers overlying the injection zone; LBP-17-5, 86 NRC 1 (2017)

aquifer qualifies as a drinking water supply if the aquifer or a portion of it has total dissolved solids in the groundwater of less than 10,000 milligrams per liter, contains a sufficient quantity of groundwater

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to supply a public water system, and proposed injection zone is capable of adequately receiving the injected fluid; LBP-17-5, 86 NRC 1 (2017)

Maximum Contaminant Levels for drinking water represent chemical concentrations that EPA has determined will not be harmful to public health, even if injected directly into drinking water; LBP-17-5, 86 NRC 1 (2017)

Maximum Contaminant Levels for potential carcinogens in drinking water, including heptachlor and tetrachloroethylene, are set at zero for three reasons; LBP-17-5, 86 NRC 1 (2017)

total suspended solids must be removed from wastewater and soluble organic matter must be treated; LBP-17-5, 86 NRC 1 (2017)

wastewater must be filtered and disinfected to further reduce fecal coliform values; LBP-17-5, 86 NRC 1 (2017)

WITNESSES, EXPERT

exception to excluding expert testimony on purely legal issues is for questions of foreign law; LBP-17-8, 86 NRC 138 (2017)

WORK ENVIRONMENT

Commission has rejected proximity standing for certain changes to worker-protection requirements; LBP-17-7, 86 NRC 59 (2017)

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