UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
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FLORIDA POWER & LIGHT COMPANY	)	Docket Nos. 50-250-SLR
	)	50-251-SLR
(Turkey Point Nuclear Generating,	)	
Unit Nos. 3 and 4	)	

NRC STAFF'S CORRECTED RESPONSE TO PETITIONS TO INTERVENE AND REQUESTS FOR HEARING FILED BY (1) FRIENDS OF THE EARTH, NATURAL RESOURCES DEFENSE COUNCIL AND MIAMI WATERKEEPER, AND (2) SOUTHERN ALLIANCE FOR CLEAN ENERGY

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INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(i), the Staff of the U.S. Nuclear Regulatory Commission (NRC Staff) hereby files its response to the petitions for leave to intervene and requests for hearing filed by (1) Friends of the Earth, Natural Resources Defense Council and Miami Waterkeeper (collectively, "Joint Petitioners"), and (2) Southern Alliance for Clean Energy ("SACE"),[1] concerning the subsequent license renewal application ("SLRA") submitted by Florida Power & Light Company ("FPL" or "Applicant") for Turkey Point Nuclear Generating Unit Nos. 3 and 4 ("Turkey Point Units 3 and 4"). In their petitions, the Joint Petitioners and SACE present a total of seven contentions raising environmental issues which they seek to litigate in this proceeding.

[1] *See* (1) "Request for Hearing and Petition to Intervene Submitted by Friends of the Earth, Natural Resources Defense Council, and Miami Waterkeeper" ("Joint Petition") (Aug. 1, 2018), and (2) "Southern Alliance for Clean Energy's Request for Hearing and Petition to Intervene" ("SACE Petition") (Aug. 1, 2018). A petition to intervene was also submitted by Mr. Albert Gomez, to which the Staff will respond separately, on or before September 4, 2018, in accordance with the Board's Order of August 15, 2018. *See Florida Power & Light Co*. (Turkey Point Units 3 and 4), "Order (Clarifying Briefing Schedule Regarding Gomez Petition)" (Aug. 15, 2018) (unpublished).

For the reasons set forth herein, the Staff submits that the Joint Petitioners and SACE have demonstrated representational standing to intervene in this proceeding and have proffered at least one admissible contention. Accordingly, the Staff does not oppose their petitions for leave to intervene. For the reasons discussed below, however, the Staff submits that certain of their contentions (or portions thereof) are inadmissible and should be excluded from litigation in this proceeding.

In the following discussion, the Staff provides, *first*, a brief description of the background of this proceeding; *second*, a discussion of the legal principles governing standing to intervene and an analysis of each petitioner's standing to intervene; *third*, a discussion of the legal principles governing contention admissibility, license renewal, and subsequent license renewal; and *fourth*, a discussion of the admissibility of each of the petitioners' proposed contentions.

BACKGROUND

This proceeding concerns the application submitted by FPL on January 30, 2018, as later supplemented and revised,[2] for subsequent license renewal of Facility Operating Licenses DPR-31 and DPR-41 to permit an additional 20 years of operation for Turkey Point Nuclear Plant Units 3 and 4 ("Turkey Point").[3] Turkey Point Units 3 and 4 consist of two Westinghouse pressurized water reactors, each of which is licensed to operate at a power level of 2,644 megawatts-thermal (MWt), with a net maximum output of approximately 811 megawatts electric

[2] *See* (1) Letter from Mano K. Nazar (FPL) to NRC Document Control Desk (Jan. 30, 2018) (ML18037A812); (2) Letter from William D. Maher (FPL) to NRC Document Control Desk (Feb. 9, 2018) (ML18044A653); (3) Letter from William D. Maher (FPL) to NRC Document Control Desk (Feb. 16, 2018) (ML18053A123); (4) Letter from William D. Maher (FPL) to NRC Document Control Desk (Mar. 1, 2018) (ML18072A224); and (5) Letter from William D. Maher (FPL) to NRC Document Control Desk (Apr. 10, 2018) (ML18102A521 and ML18113A132) (transmitting a revised SLRA).

[3] Turkey Point is owned and operated by FPL, which is a subsidiary of NextEra Energy Inc. (formerly FPL Group, Inc.), and the third largest electric utility in the United States. SLRA Appendix E, Environmental Report, Subsequent Operating License Renewal Stage ("ER") (ML18113A145), at 1-7.

(MWe) and 821 MWe, respectively.[4] The current renewed operating licenses for Unit 3 and Unit 4 expire at midnight on July 19, 2032, and April 10, 2033, respectively.[5] FPL's subsequent license renewal application seeks to extend the Turkey Point Units 3 and 4 operating licenses for an additional 20 years, until July 19, 2052, and April 10, 2053, respectively.[6]

Turkey Point is located on a 3,300-acre site adjacent to Biscayne Bay in Miami-Dade County, approximately two miles east of Homestead, Florida (the closest community to the site), and approximately 20 miles south of Miami, Florida (the largest population center in the region).[7] Turkey Point Units 3 and 4 utilize a closed-cycle circulating water system (the cooling canal system or "CCS"), with a circulating water flow of 1,872 million gallons per day (MGD).[8]

The NRC published a notice of receipt of the Turkey Point SLRA on April 18, 2018.[9] On May 2, 2018, the NRC issued a determination of acceptability and sufficiency for docketing of the SLRA, along with a notice of opportunity for hearing on the application.[10] The Notice

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[4] ER at 2-2.

[5] The construction permits for Turkey Point Units 3 and 4 were issued on April 27, 1967; the initial operating licenses for Units 3 and 4 were issued on July 19, 1972 and April 10, 1973, respectively; and the licenses for both Units were renewed for an additional 20 years on June 6, 2002. ER at 1-1 and 2-1.

[6] *Id.* at 1-1 and 2-1. Turkey Point Units 3 and 4 are the only nuclear plants at the site. The site is also occupied by two retired natural gas/oil steam-generating units (Units 1 and 2), which have been repurposed to support transmission reliability but which do not generate power or process water; and one 1,150 MW combined-cycle natural gas-fired steam-generating unit. (Unit 5). *Id.* at 2-1. Recently, the Commission issued combined licenses ("COLs") for two Westinghouse AP1000 (1,117 MWe) nuclear plants (Turkey Point Units 6 and 7) to be built at the site. Florida Power & Light Co.; Turkey Point Units 6 and 7; Combined licenses and record of decision; issuance, 83 Fed. Reg. 18,091 (Apr. 25, 2018).

[7] ER at 3-1.

[8] *Id.* at 2-5. The CCS is licensed by the State of Florida as an industrial wastewater (IWW) facility. *Id.* at 2-4, 3-82, 3-87 – 3-88.

[9] Florida Power & Light Co.; Turkey Point Nuclear Generating Unit Nos. 3 and 4; License renewal application; receipt, 83 Fed. Reg. 17,196 (Apr. 18, 2018).

[10] Florida Power & Light Co.; Turkey Point Nuclear Generating, Unit Nos. 3 and 4; License renewal application; opportunity to request a hearing and to petition to intervene, 83 Fed. Reg. 19,304 (May 2, 2018) ("Notice").

required that petitions for leave to intervene and requests for hearing be filed within 60 days of publication of the Notice (*i.e.,* by July 2, 2018).[11] The Commission subsequently extended the deadline for filing petitions to intervene by thirty days, until August 1, 2018, in response to requests for extension of time filed by NRDC, FOE and SACE.[12] On August 1, 2018, the Joint Petitioners and SACE timely filed their petitions for leave to intervene. An Atomic Safety and Licensing Board ("Licensing Board" or "Board") was established on August 8, 2018, to preside over any adjudicatory proceeding that may be held.[13]

DISCUSSION

II. Standing to Intervene

A. Applicable Legal Requirements

In accordance with the Commission's Rules of Practice, "[a]ny person whose interest may be affected by a proceeding and who desires to participate as a party must file a written request for hearing [or petition for leave to intervene] and a specification of the contentions which the person seeks to have litigated in the hearing." 10 C.F.R. § 2.309(a).[14] The regulations further provide that the Licensing Board "will grant the request/petition if it determines that the requestor/petitioner has standing under the provisions of [10 C.F.R. § 2.309(d)] and has proposed at least one admissible contention that meets the requirements of [10 C.F.R. § 2.309(f)]." *Id.*

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[11] *Id.,* 82 Fed. Reg. at 19,305.

[12] *Florida Power & Light Co*. (Turkey Point Nuclear Generating Units 3 and 4), "Order of the Secretary (Granting a Partial Extension)" (June 29, 2018) (ML18180A185).

[13] Establishment of Atomic Safety and Licensing Board; Florida Power & Light Co., 83 Fed. Reg. 40,360 (Aug. 14, 2018).

[14] "*Person* means (1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency other than the Commission . . . , any State or any political subdivision of, or any political entity within a State, any foreign government or nation, or other entity; and (2) any legal successor, representative, agent, or agency of the foregoing." 10 C.F.R. § 2.4.

Under the general standing requirements set forth in 10 C.F.R. § 2.309(d)(1), a request for hearing or petition for leave to intervene must state:

> (i) The name, address and telephone number of the requestor or petitioner;
>
> (ii) The nature of the requestor's/petitioner's right under the 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.

10 C.F.R. § 2.309(d)(1). The regulations state that in ruling on a request for hearing or petition to intervene, the Commission, presiding officer or Licensing Board "must determine, among other things, whether the petitioner has an interest affected by the proceeding considering the factors enumerated in [§ 2.309(d)(1)]."[15]

As the Commission has observed, the NRC has "long applied 'contemporaneous judicial concepts of standing'" which requires a "'concrete and particularized injury that is fairly traceable to the challenged action and is likely to be redressed by a favorable decision.'"[16] As the Commission has stated, "[a]t the heart of the standing inquiry is whether the petitioner has 'alleged such a personal stake in the outcome of the controversy' as to demonstrate that a concrete adverseness exists which will sharpen the presentation of issues."[17]

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[15] 10 C.F.R. § 2.309(d)(2). The presiding officer may also consider a request for discretionary intervention in the event that a petitioner is determined to lack standing to intervene as a matter of right, where a sufficient showing is made with respect to the factors enumerated in 10 C.F.R. § 2.309(e).

[16] *Calvert Cliffs 3 Nuclear Project, LLC and Unistar Nuclear Operating Servs., LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915 (2009) (quoting *Cleveland Elec. Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-93-21, 38 NRC 87, 92 (1993))

[17] *Sequoyah Fuels Corp. and Gen. Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 71 (1994), (citing *Duke Power Co. v. Carolina Environmental Study Group, Inc.*, 438 U.S. 59, 72 (1978) and quoting *Baker v. Carr*, 369 U.S. 186, 204 (1962))

In construction permit and operating license proceedings, standing to intervene has been found to exist based upon a proximity presumption, for persons who reside or frequent an area within approximately 50 miles of the facility.[18] As the Commission has noted, the Atomic Safety and Licensing Boards have also found the proximity presumption to establish standing to intervene in license renewal proceedings.[19]

An organization may establish its standing to intervene based on organizational standing (showing that its own organizational interests could be adversely affected by the proceeding), or representational standing (based on the standing of its members). Where an organization seeks to establish "representational standing," it must show that at least one of its members may be affected by the proceeding, it must identify that member's name and address, and it must show that the member has "authorized the organization to request a hearing on their behalf."[20] Further, for the organization to establish representational standing, the member seeking representation must qualify for standing in his or her own right; the interests that the organization seeks to protect must be germane to its own purpose; and neither the asserted claim nor the requested relief must require an individual member to participate in the organization's legal action.[21]

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[18] *See, e.g., Calvert Cliffs,* CLI-09-20, 70 NRC at 915-16. The proximity presumption establishes standing to intervene without the need to establish the elements of injury, causation, or redressability.

[19] *Calvert Cliffs,* CLI-09-20, 70 NRC at 915 n.15 (noting that the Board in *Florida Power and Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-06, 53 NRC 138, 150, *aff'd on other grounds*, CLI-01-17, 54 NRC 3 (2001), was "applying [the] proximity presumption in [a] reactor operating license renewal proceeding").

[20] *Consumers Energy Co.* (Palisades Nuclear Power Plant), CLI-07-18, 65 NRC 399, 409-10 (2007).

[21] *Id.*; *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999).

B. The Petitioners' Standing to Intervene

1. The Joint Petitioners

Friends of the Earth ("FOE") identifies itself as a national non-profit environmental advocacy organization with a nationwide membership of over 100,000, including approximately 4,800 members in Florida.[22] FOE states, *inter alia*, that it seeks to protect the environment, to improve the environmental, health and safety conditions of nuclear facilities, and to minimize the risks posed by nuclear facilities.[23] FOE seeks to establish representational standing to intervene, based on the individual standing of five of its members: Anne Hemingway Feuer, Laura Bauman, Vicki McGee-Absten, Patricia J. Wynn, and Jonathan Lester Fried.[24] Each of these individuals filed a Declaration in support of the Petition, in which they, *inter alia*, stated their home addresses, the distance of their homes from the Turkey Point site (5, 41, 35, 20, and 12 miles, respectively), and the nature of their activities in the area; that they are concerned over the continued operation of Turkey Point Units 3 and 4, the consequences of an accident at Turkey Point on their own and their families' health and property, and on their recreational interests and interest in protecting the environment around Turkey Point; that they are members of FOE; and that they authorize FOE to represent their interests in this proceeding.[25]

Similarly, the Natural Resources Defense Council states, in part, that it is a national non-profit environmental organization with a focus on environmental protection and the risks

[22] Joint Petition at 1-2; Declaration of Peter Stocker (July 31, 2018) (Joint Petition, Att. A), at 1-2.

[23] Joint Petition at 2; Stocker Declaration (Joint Petition, Att. A), at 1.

[24] Joint Petition at 2-5.

[25] Declaration of Anne Hemingway Feuer (June 29, 2018) (Joint Petition, Att. B), at 1-4; Declaration of Laura Bauman (July 30, 2018) (Joint Petition, Att. C), at 1-3; Declaration of Vicki McGee-Absten (July 30, 2018) (Joint Petition, Att. D), at 1-3; Declaration of Patricia J. Wynn (July 31, 2018) (Joint Petition, Att. E), at 1-3; and Declaration of Jonathan Lester Fried (July 31, 2018) (Joint Petition, Att. F), at 1-3.

posed by nuclear facility operation.[26] NRDC states that it has a nationwide membership of over 384,000, including 15,324 members in Florida, with at least 1,746 members living within 50 miles (and at least 103 members within 10 miles) of Turkey Point.[27] NRDC seeks to establish representational standing to intervene, based on the individual standing of one of its members, Dr. Philip Stoddard, Ph.D.[28] Dr. Stoddard filed a Declaration in support of the Petition, in which he, *inter alia*, stated his home address; that he lives approximately 18 miles from Turkey Point; that he is concerned over the safety and risk of an accident at Turkey Point Units 3 and 4, and the environmental impacts of the cooling canal system; that he is a member of NRDC; and that he authorizes NRDC to represent his interests in this proceeding.[29]

Finally, Miami Waterkeeper states, *inter alia*, that it is a non-profit organization with a mission to protect and preserve the aquatic integrity of South Florida's watershed and wildlife.[30] MWK indicates that it has approximately 100 members in Florida.[31] MWK seeks to establish representational standing to intervene, based on the individual standing of two of its members: Dr. Rachel Silverstein (who is also MWK's Executive Director) and Daniel Parobok.[32] Dr. Silverstein and Mr. Parobok each filed a Declaration in support of the Petition, in which they,

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[26] Joint Petition at 5; Declaration of Gina Trujillo (Aug. 1, 2018) (Joint Petition, Att. G), at 1-2.

[27] Joint Petition at 5; Trujillo Declaration (Joint Petition, Att. G), at 1-2.

[28] Joint Petition at 2-5. The Joint Petition identifies Dr. Stoddard as the Mayor of the City of South Miami, Florida. *Id.* at 6. While Dr. Stoddard does not identify himself as such, the City of South Miami's website states that "Mayor Philip Stoddard was first elected to office in 2010 and is currently serving his fourth term as Mayor...." https://www.southmiamifl.gov/directory.aspx?EID=2 (last accessed Aug. 9, 2018).

[29] Declaration of Philip Stoddard, Ph.D. (July 24, 2018) (Joint Petition, Att. H), at 1-6.

[30] Joint Petition at 6; Declaration of Rachel Silverstein, Ph.D. (July 31, 2018) (Joint Petition, Att. I), at 1.

[31] Joint Petition at 6-7; Silverstein Declaration (Joint Petition, Att. I), at 1.

[32] Joint Petition at 7-9; Silverstein Declaration (Joint Petition, Att. I); Declaration of Daniel Parobok (July 30, 2018) (Joint Petition, Att. J).

inter alia, stated the distance of their homes from the Turkey Point site (30 and 28 miles, respectively) and the nature of their recreational and other activities in the area;[33] that they are concerned over the consequences of a radiation release at Turkey Point, the impacts of the plants' cooling water system on the environment and their drinking water, and/or the emission of pollutants from the plants;[34] that they are members of MWK, and that they authorize MWK to represent their interests in this proceeding.[35]

The Staff is satisfied that FOE, NRDC and MWK have established their representational standing to intervene in this proceeding. Each organization provided the name and address of at least one of its members, who stated that he or she is concerned about the environmental impacts of plant operation and/or the risk of an accident at Turkey Point. While the Joint Petitioners have not shown that their members would suffer any concrete or particularized injury caused by the challenged action that would be redressed by a favorable decision in this proceeding, the Declarations submitted by their members demonstrate that they reside and work within 50 miles of the plant, and that they authorize their respective organizations to represent their interests in this proceeding. As such, each of the Joint Petitioners has shown that at least one of its members would have standing to intervene in his or her own right, based on the proximity presumption, and that those members have authorized their organizations to

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[33] Silverstein Declaration (Joint Petition, Att. I), at 2-3; Declaration of Daniel Parobok (July 30, 2018) (Joint Petition, Att. J), at 1-3. Mr. Parobok provided his home address in Tavernier, FL (in the Florida Keys), and stated that he lives 28 miles from Turkey Point. Parobok Declaration (Joint Petition, Att. J), at 2-3. Dr. Silverstein stated that she is a resident of Miami-Dade County, and gave her address as "2103 Coral Way, 2nd Floor, Miami, FL 33145" – which appears to be an office building on Google maps and is the business address of Miami Waterkeeper. *See* https://www.miamiwaterkeeper.org/4768 (last accessed Aug. 9, 2018). The Staff is satisfied that Dr. Silverstein resides, works and recreates within 50 miles of Turkey Point, based upon the statements contained in her Declaration.

[34] Silverstein Declaration (Joint Petition, Att. I), at 1; Parobok Declaration (Joint Petition, Att. J), at 2.

[35] Silverstein Declaration (Joint Petition, Att. I), at 1, 3; Parobok Declaration (Joint Petition, Att. J), at 1, 2.

represent those members' interests here. Accordingly, each of the Joint Petitioners has satisfactorily established its representational standing to intervene in this proceeding under the proximity presumption.[36]

2. Southern Alliance for Clean Energy

Southern Alliance for Clean Energy similarly seeks to establish representational standing to intervene in this proceeding. SACE identifies itself as "a non-profit nonpartisan membership organization that promotes responsible energy choices that solve global warming problems and ensure clean, safe and healthy communities throughout the Southeast."[37] SACE further states that it has members in Florida and throughout the Southeast, and it provides the Declarations of three of its members (Dan Kipnis, Mark Oncavage and Richard Reynolds)[38] who live within 50 miles of Turkey Point and who, SACE states, would be adversely affected by an accident if the Turkey Point Units 3 and 4 operating licenses are renewed.[39] In their Declarations, Messrs. Kipnis, Oncavage and Reynolds state their home addresses and the distance of their homes from Turkey Point (29, 15, and 16 miles, respectively); that they are concerned about the risk of a severe accident at Turkey Point if the operating licenses are renewed; that they are members of SACE; and that they authorize SACE to represent their interests in this proceeding.[40]

SACE's Petition and its members' Declarations demonstrate that SACE has established representational standing to intervene in this proceeding. SACE has identified the name and

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[36] *Calvert Cliffs*, CLI-09-20, 70 NRC at 915 n.15; *Turkey Point*, LBP-01-06, 53 NRC at 150.

[37] SACE Petition at 3.

[38] *See* (1) Declaration of Dan Kipnis (June 19, 2018) (SACE Petition, Att. 1); (2) Declaration of Mark P. Oncavage (June 25, 2018) (SACE Petition, Att. 2); and (3) Declaration of Richard Reynolds (SACE Petition, Att. 3).

[39] SACE Petition, at 3.

[40] Kipnis Declaration (SACE Petition, Att. 1), at 1; Oncavage Declaration (SACE Petition, Att. 2), at 1; Reynolds Declaration (SACE Petition, Att. 3), at 1.

address of at least one of its members who resides within 50 miles of the plant, and who has authorized SACE to represent his interests in the proceeding. While SACE has not shown that its members would suffer any concrete or particularized injury caused by the challenged action that would be redressed by a favorable decision in this proceeding, it has shown that each of its identified members would have standing to intervene in his own right, based on the proximity presumption, and that SACE has been authorized to represent each of those persons' interests here. Accordingly, SACE has satisfactorily established its representational standing to intervene in this proceeding under the proximity presumption.[41]

III. Admissibility of the Petitioners' Proffered Contentions

A. Legal Requirements for Contentions

1. General Requirements for Admissibility

The legal requirements governing the admissibility of contentions are set forth in 10 C.F.R. § 2.309(f) of the Commission's Rules of Practice (formerly 10 C.F.R. § 2.714(b)).[42] Specifically, in order to be admitted, a contention must satisfy the following requirements:

> (f) *Contentions*. (1) A request for hearing or petition for leave to intervene must set forth with particularity the contentions sought to be raised. For each contention, the request or petition must:
>
> (i) Provide a specific statement of the issue of law or fact to be raised or controverted;

[41] *Calvert Cliffs*, CLI-09-20, 70 NRC at 915 n.15; *Turkey Point*, LBP-01-06, 53 NRC at 150.

[42] These requirements substantially reiterate the requirements stated in former § 2.714, published in revised form in 1989. *See* Statement of Consideration, "Rules of Practice for Domestic Licensing Proceedings - Procedural Changes in the Hearing Process," 54 Fed. Reg. 33,168 (Aug. 11, 1989), as corrected, 54 Fed. Reg. 39,728 (Sept. 28, 1989). While former § 2.714 was revised in 1989, those revisions did not constitute "a substantial departure" from then existing practice in licensing cases. 54 Fed. Reg. at 33,170-71. Thus, the prior standards governing the admissibility of contentions remain in effect to the extent they do not conflict with the 1989 amendments. *Arizona Public Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), LBP-91-19, 33 NRC 397, 400 (1991).

(ii) Provide a brief explanation of the basis for the contention;[43]

(iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;[44]

(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;[45]

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/ petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue;[46] [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

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[43] The requirement that a petitioner provide an explanation of the basis for its contention helps to define the scope of a contention – "[t]he reach of a contention necessarily hinges upon its terms coupled with its stated bases." *Public Serv. Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988), *aff'd sub nom Massachusetts v. NRC*, 924 F.2d 311 (D.C. Cir.), *cert. denied*, 502 U.S. 899 (1991); *accord Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 379 (2002).

[44] The scope of any particular proceeding is defined by the Commission in its initial hearing notice and Order referring the proceeding to the Board. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790-91 (1985). Contentions may only be admitted if they fall within the scope of issues set forth in the *Federal Register* Notice and comply with the requirements of former § 2.714(b) (restated in § 2.309(f)), and applicable case law. *Public Serv. Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976); *Philadelphia Elec. Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974).

[45] "Materiality" requires that the petitioner show why the alleged error or omission is of possible significance to the result of the proceeding, demonstrating a "significant link between the claimed deficiency and the agency's ultimate determination. *Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), LBP-15-20, 81 NRC 829, 850 (2015).

[46] It is the petitioner's obligation to present the factual information and expert opinions necessary to support its contention. *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 457 (2006) (moreover, it is the Proponent's responsibility to satisfy the basic contention admissibility requirements; Boards should not have to search through a petition to "uncover" arguments and support for a contention, and "may not simply "'infer' unarticulated bases of contentions"). *See also Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), CLI-91-12, 34 NRC 149, 155 (1991).

> application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief. . . . [47]
>
> (2) Contentions must be based on documents or other information available at the time the petition is to be filed, such as the application, supporting safety analysis report, environmental report or other supporting document filed by an applicant or licensee, or otherwise available to a petitioner. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report. . . .

10 C.F.R. § 2.309(f)(1)-(2) (emphasis added).

As has often been observed, the contention admissibility rules exist to "focus litigation on concrete issues, and result in a clearer and more focused record for decision."[48] In this regard, the Commission has explained that the rules governing the admissibility of contention are "strict by design."[49] Failure to comply with any of the requirements set forth in the regulations is

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[47] All contentions must "show that a genuine dispute exists" with regard to the license application in question, challenge and identify either specific portions of, or alleged omissions from, the application, and provide the supporting reasons for each dispute. This requires the Petitioner to read the entire application, state both the applicant and petitioner's views, and explain the disagreement, and if Petitioner believes an issue is not addressed, to explain the deficiency. Basic assertions that an application is insufficient or inadequate is insufficient to meet this standard. *Nuclear Mgmt. Co., LLC* (Palisades Nuclear Power Plant), LBP-06-10, 63 NRC 314, 340-42 (2006).

[48] *See e.g.*, *Crow Butte Resources, Inc.* (In Situ Leach Facility, Crawford, NE), LBP-15-15, 81 NRC 598, 601 (2015) (*citing* "Changes to Adjudicatory Process," 69 Fed. Reg. 2182, 2202 (Jan. 14, 2004)).

[49] *Entergy Nuclear Operations, Inc.* (Indian Point, Unit 2) CLI-16-5, 83 NRC 131, 136 (2016) (citing *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001) and *South Carolina Elec. & Gas Co.* (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-1, 71 NRC 1, 7 (2010). The Commission further stated that it "should not have to expend resources to support the hearing process unless there is an issue that is appropriate for, and susceptible to, resolution in an NRC hearing." Changes to Adjudicatory Process, 69 Fed. Reg. 2182, 2202 (Jan. 14, 2004).

grounds for the dismissal of a contention.[50] As further stated by the Commission, the rules require "a clear statement as to the basis for the contentions and the submission of . . . supporting information and references to specific documents and sources that establish the validity of the contention." "Mere 'notice pleading' does not suffice."[51] "A petitioner's issue will be ruled inadmissible if the petitioner 'has offered no tangible information, no experts, no substantive affidavits,' but instead only 'bare assertions and speculation.'"[52]

It is well established that the purpose for the "basis" requirements is (1) to assure that the contention raises a matter appropriate for adjudication in a particular proceeding; (2) to establish a sufficient foundation for the contention to warrant further inquiry into the assertion; and (3) to put other parties sufficiently on notice of the issues so that they will know generally what they will have to defend against or oppose.[53] Determining whether the contention is adequately supported by a concise allegation of the facts or expert opinion is not a hearing on the merits; a petitioner does not have to prove its contention at the admissibility stage,[54] or

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[50] *Indian Point*, CLI-16-5, 83 NRC at 136. *See also Oconee Nuclear Station*, CLI-99-11, 49 NRC at 334-35 (the heightened contention admissibility rules are designed to preclude contentions "based on little more than speculation"). The requirements are intended, *inter alia*, to ensure that a petitioner reviews the application and supporting documents prior to filing contentions; that contentions are supported by at least some facts or expert opinion known to the petitioner at the time of filing; and that there exists a genuine dispute before a contention is admitted for litigation, to avoid the practice of filing contentions which lack any factual support and seeking to flesh them out later through discovery. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-91-35, 34 NRC 163, 167-68 (1991).

[51] *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 NRC 111, 118-119 (2006) (footnotes omitted).

[52] *Fansteel, Inc.* (Muskogee, Oklahoma, Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *GPU Nuclear Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 192, 208 (2000)).

[53] *Peach Bottom*, ALAB-216, 8 AEC at 20-21.

[54] *Private Fuel Storage L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 139 (2004).

provide all the evidence required to withstand a summary disposition motion.[55] Nonetheless, the Petitioner must provide some support for its contention, either in the form of facts or expert testimony, and "[f]ailure to do so requires that the contention be rejected."[56]

If a petitioner neglects to provide the requisite support for its contentions, the Board should not make assumptions of fact that favor the petitioner, or search for or supply information that is lacking.[57] Moreover, any supporting material provided by a petitioner, including those portions of the material that are not relied upon, is subject to Board scrutiny.[58] Likewise, providing any material or document as a basis for a contention, without setting forth an explanation of its significance, is inadequate to support the admission of the contention.[59] In short, the information, facts, and expert opinions provided by the petitioner are to be examined by the Board to confirm that they do indeed supply adequate support for the contention.[60]

Finally, the *Peach Bottom* decision requires that a contention be rejected if it constitutes an attack on applicable statutory requirements; challenges the basic structure of the

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[55] *Compare with* 10 C.F.R. § 2.710(c). "[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." 54 Fed. Reg. at 33,171.

[56] *Palo Verde*, CLI-91-12, 34 NRC at 155; *accord, Indian Point*, CLI-16-5, 83 NRC at 136. *See* "Rules of Practice for Domestic Licensing Proceedings - Procedural Changes in the Hearing Process," 54 Fed. Reg. at 33,170 ("This requirement does not call upon the intervener to make its case at this stage of the proceeding, but rather to indicate what facts or expert opinions, be it one fact or opinion or many, of which it is aware at that point in time which provide the basis for its contention.").

[57] *See American Centrifuge Plant*, CLI-06-10, 63 NRC at 457 (2006).

[58] *Tennessee Valley Authority* (Bellefonte Nuclear Plant, Units 1 and 2), LBP-10-7, 71 NRC 391, 421 (2010); *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 90 (1996).

[59] *See Fansteel*, CLI-03-13, 58 NRC at 205.

[60] *Bellefonte Nuclear Plant*, LBP-10-7, 71 NRC at 421.

Commission's regulatory process or is an attack on the regulations;[61] is nothing more than a generalization regarding the petitioner's view of what applicable policies ought to be; seeks to raise an issue which is not proper for adjudication in the proceeding or does not apply to the facility in question; or seeks to raise an issue which is not concrete or litigable.[62]

2. Scope of License Renewal Proceedings

As stated in 10 C.F.R. § 2.309(f)(1)(iii), *supra*, a petitioner must demonstrate that the "issue raised in the contention is within the scope of the proceeding"; any contention that falls outside the scope of the proceeding must be rejected.[63] The scope of a license renewal proceeding is limited, under the Commission's regulations in 10 C.F.R. Part 54, to the specific matters that must be considered for the license renewal application to be granted.[64]

Pursuant to 10 C.F.R. § 54.29, the following standards are considered in determining whether to grant a license renewal application:

> **10 C.F.R. § 54.29 Standards for issuance of a renewed license**:
>
> A renewed license may be issued by the Commission up to the full term authorized by § 54.31 if the Commission finds that:
>
> (a) Actions have been identified and have been or will be taken with respect to the matters identified in Paragraphs (a)(1) and (a)(2) of this section, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB [current licensing basis], and that any changes made to the plant's CLB in order to

[61] As set forth in 10 C.F.R. § 2.335(a), "no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding," in the absence of a waiver petition granted by the Commission. *See also Millstone*, CLI-03-14, 58 NRC at 218. Further, any contention that amounts to an attack on applicable statutory requirements or represents a challenge to the basic structure of the Commission's regulatory process must be rejected. *Public Serv. Co. of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-82-76, 16 NRC 1029, 1035 (1982) (*citing Peach Bottom*, ALAB-216, 8 AEC at 20-21).

[62] *Peach Bottom*, ALAB-216, 8 AEC at 20-21.

[63] *Portland Gen. Elec. Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-90 n.6 (1979); *Calvert Cliffs 3 Nuclear Project, LLC & Unistar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), LBP-12-18, 76 NRC 127, 157 (2012).

[64] *Oyster Creek*, CLI-06-24, 64 NRC at 118-119.

> comply with this paragraph are in accord with the Act and the Commission's regulations. These matters are:
>
> (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under § 54.21(a)(1); and
>
> (2) time-limited aging analyses that have been identified to require review under § 54.21(c).
>
> (b) Any applicable requirements of Subpart A of 10 C.F.R. Part 51 have been satisfied.
>
> (c) Any matters raised under § 2.335 have been addressed.

These standards, along with other regulations in 10 C.F.R. Part 54, and the environmental regulations related to license renewal set forth in 10 C.F.R. Part 51 and Appendix B thereto (discussed *infra* at 24-28), establish the scope of issues that may be considered in a license renewal proceeding.[65] The failure of a proposed contention to demonstrate that an issue is within the scope of the proceeding is grounds for its dismissal.[66]

The NRC conducts a technical review pursuant to 10 C.F.R. Part 54, to assure that pertinent public health and safety requirements have been satisfied.[67] Regardless of whether or not a license renewal application has been filed for a facility, the Commission has a continuing responsibility to oversee the safety and security of ongoing plant operations, and it routinely oversees a broad range of operating issues under its statutory responsibility to assure the protection of public health and safety for operations under existing operating licenses.

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[65] *See generally*, Final rule, "Nuclear Power Plant License Renewal," 56 Fed. Reg. 64,943 (Dec. 13, 1991) ("1991 Statement of Considerations"); Final rule, "Nuclear Power Plant License Renewal; Revisions," 60 Fed. Reg. 22,461 (May 8, 1995) ("1995 Statement of Considerations").

[66] *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-05-24, 62 NRC 551, 567 (2005).

[67] *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 & 4), CLI-01-17, 54 NRC 3, 6 (2001).

Therefore, for license renewal, the Commission has found it generally unnecessary to include a review of issues already monitored and reviewed in ongoing regulatory oversight processes.[68] Rather, the NRC's license renewal safety review focuses on "plant systems, structures, and components for which current [regulatory] activities and requirements *may* not be sufficient to manage the effects of aging in the period of extended operation."[69] Adjudicatory proceedings on license renewal applications are bounded by the same rules and scope.[70]

3. Subsequent License Renewal Proceedings

The Atomic Energy Act provides no limit on the number of times that a nuclear power plant's operating license may be renewed; rather, Section 103(c) of the Act provides that each license "shall be issued for a specified period, as determined by the Commission, depending on the type of activity to be licensed, but not exceeding forty years . . . and may be renewed upon the expiration of such period."[71] Likewise, the Commission's regulations do not limit the number of times that an operating license may be renewed. The NRC has long recognized the potential that nuclear power plant licensees might seek to extend their operating licenses to permit plant operation beyond 60 years, *i.e.,* after the expiration of a renewed license. Prior to 1991, the Commission's regulations provided only that operating licenses may be issued for up to 40 years and "may be renewed by the Commission upon the expiration of the period."[72] Upon

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[68] *Id.* at 8-10. For example, the Commission has held that "[i]ssues like emergency planning – which already are the focus of ongoing regulatory processes – do not come within the NRC's safety review at the license renewal stage." *Turkey Point*, CLI-01-17, 54 NRC at 10; *accord*, *Millstone*, CLI-05-24, 62 NRC at 565, 567.

[69] *Turkey Point*, CLI-01-17, 54 NRC at 10 (quoting 60 Fed. Reg. at 22,469).

[70] As the Commission stated, "[a]djudicatory hearings in individual license renewal proceedings will share the same scope of issues as our NRC Staff review; for our hearing process (like our Staff's review) necessarily examines only the [safety] questions our safety rules make pertinent." *Id.* at 10.

[71] Atomic Energy Act of 1954, as amended, 42 U.S.C. 2133.c.

[72] 10 C.F.R. § 50.51 (1991).

adopting 10 C.F.R. Part 54 in 1991, the Commission provided, in 10 C.F.R. § 54.31(d), that "[a] renewed license may be subsequently renewed upon expiration of the renewal term, in accordance with all applicable requirements."[73]

In determining which requirements are "applicable" to subsequent license renewal, the Commission's statements in adopting the license renewal rules in 1991 are instructive. Thus, in responding to comments regarding proposed § 54.31(d), the Commission observed as follows:

> ***m. Subsequent Renewals***
>
> Section 54.31(d) allows a renewed license to be further renewed upon expiration of the renewal term. . . . [A] subsequent renewal application may be submitted prior to expiration of the previous renewal term . . . . However, § 54.31(d) makes clear that a renewed license may be further renewed in accordance with "applicable requirements," which would include the provisions of part 54 (unless the Commission subsequently adopts special provisions applicable only to subsequent renewals). . . .
>
> Another commenter observed that the concept of subsequent renewals is not developed in the supporting documentation for the proposed rule. The Commission does not believe that further exposition of this concept is necessary at this time. If experience with renewals discloses a previously unknown aging or other time-dependent issue, appropriate regulatory action, including modifying the requirements for obtaining subsequent renewals, can be implemented. Further discussions of the concept are not likely to be fruitful at this time.[74]

Notably, the license renewal regulations adopted in 1991 contained no specific requirements that are unique to subsequent license renewal, and no such provisions have been adopted at

[73] 10 C.F.R. § 54.31(d) (1992). This provision has continued in effect, with minor revisions, until the present; § 54.31(d) currently states, "[a] renewed license may be subsequently renewed in accordance with all applicable requirements." 10 C.F.R. § 54.31(d) (2018). This formulation of the regulation appeared in the Commission's 1995 revision of the license renewal regulations. *See* "Nuclear Power Plant License Renewal; Revisions," Final Rule, 60 Fed. Reg. 22,461, 22,494 (May 8, 1995).

[74] "Nuclear Power Plant License Renewal," Final Rule, 56 Fed. Reg. 64,943, 64,964-965 (Dec. 13, 1991) (emphasis added).

any time since the license renewal regulations were enacted.[75] Similarly, the requirements in 10 C.F.R. Part 51, concerning the consideration of license renewal environmental impacts, apply as well to subsequent license renewal;[76] no requirements have been adopted by the Commission for subsequent license renewal beyond those pertaining to license renewal.[77]

In early 2014, the Staff submitted SECY-14-0016 to the Commission.[78] Therein, the Staff provided an assessment of the license renewal regulatory process and regulations, and

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[75] *See generally*, NUREG-1850, "Frequently Asked Questions on License Renewal of Nuclear Power Reactors" (March 2006), Question 1.3.10 ("There are no specific limitations in the Atomic Energy Act or the NRC's regulations restricting the number of times a license may be renewed. However, an applicant has to meet all of the applicable requirements for each subsequent renewal. Any subsequent renewal would require a review similar to that required for the first renewal.").

[76] To be sure, 10 C.F.R. § 51.53(c)(3) states that an applicant for an "initial renewed license" must submit certain information in its environmental report; the regulation does not state whether similar or different information must be submitted by applicants for subsequent license renewal. No similar language appears in any other provision of 10 C.F.R. Part 51 or Part 54, nor was there any discussion of this word in the Statement of Considerations for the final rule. *See* Final Rule, "Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," 61 Fed. Reg. 28,467 (June 5, 1996); *but see* Proposed Rule, "Environmental Review for Renewal of Operating Licenses," 56 Fed. Reg. 47,016, 47,017 (Sept. 17, 1991) ("The Part 54 rule could be applied to multiple renewals of an operating license for various increments. However, the part 51 amendments apply to one renewal of the initial license for up to 20 years beyond the expiration of the initial license."). Regardless, as discussed *infra* at 20-23, the Commission has determined that the existing license renewal safety and environmental regulatory framework applies to subsequent license renewal, and no new rulemaking for SLR is needed.

[77] The 1996 GEIS observed that "Operating licenses may be renewed for up to 20 years beyond the 40-year term of the initial license. No limit on the number of renewals is specified." NUREG-1437 (May 1996), Vol. 1, at 1-1. Similarly, the 2013 revision of the GEIS observed:

> The Atomic Energy Act of 1954 authorizes the [NRC] to issue commercial nuclear power plant operating licenses for up to 40 years. The 40-year length of the original license period was imposed for economic and antitrust reasons rather than the technical limitations of the nuclear power plant. NRC regulations allow for the renewal of these operating licenses for up to an additional 20 years, depending on the outcome of an assessment determining whether the nuclear power plant can continue to operate safely and protect the environment during the 20-year period of extended operation. There are no specific limitations in the Atomic Energy Act or the NRC's regulations restricting the number of times a license may be renewed.

NUREG-1437, Rev. 1 (June 2013), at 1-1.

[78] SECY-14-0016, "Ongoing Staff Activities to Assess Regulatory Considerations for Power Reactor Subsequent License Renewal" (Jan. 13, 2014) (ML14050A306).

presented four options for consideration by the Commission regarding potential regulatory approaches to subsequent license renewal:

> *Option 1*: No change to the existing 10 C.F.R. Part 54 regulations
>
> *Option 2*: Minor clarifications to existing 10 C.F.R. Part 54 regulations for current and subsequent renewals
>
> *Option 3*: Update 10 C.F.R. Part 54 regulations for current and subsequent renewals and pursue Option 2 clarifications
>
> *Option 4*: Pursue rulemaking for subsequent renewal-specific changes and Option 2 and 3 changes.

Upon evaluating these options, the Staff recommended that the Commission select Option 4:

> The staff recommends the Commission direct the staff to begin the rulemaking process to address all of the proposed topics in Option 4. Addressing these topics through rulemaking would provide additional assurance that aging-management activities would be effectively implemented and provide regulatory clarity, transparency, stability, and efficiency by defining requirements at the outset of the subsequent license renewal process rather than on a case-by-case basis during license renewal reviews.[79]

On August 29, 2014, the Commission issued its Staff Requirements Memorandum ("SRM") in response to SECY-14-0016.[80] Therein, the Commission *declined* to approve the Staff's recommendation to initiate rulemaking for subsequent license renewal. Rather, the Commission directed the Staff to (a) "continue to update license renewal guidance, as needed, to provide additional clarity on the implementation of the license renewal regulatory framework"; (b) "address emerging technical issues and operating experience through alternative vehicles

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[79] *Id.* at 9. Although the Staff recommended in SECY-14-0016 that the Commission initiate rulemaking for subsequent license renewal with respect to aging management issues, the Staff concluded that its license renewal environmental review process is adequate for consideration of the environmental impacts of subsequent license renewal. In this regard, the Staff observed, "[t]he GEIS describes the most common environmental impacts to nuclear power facilities and allows applicants and the NRC to focus on important environmental issues specific to each site pursuing license renewal. The staff revised the GEIS in June 2013, and believes that the update is adequate for a future subsequent license renewal application." SECY-14-0016, at 3.

[80] "Staff Requirements – SECY-14-0016 – Ongoing Staff Activities to Assess Regulatory Considerations for Power Reactor Subsequent License Renewal" (Aug. 29, 2014) (ML14241A578).

(e.g., issuance of generic communications, voluntary industry initiatives, or updates to NUREG-1801 [the GALL Report]";[81] (c) implement inspection enhancements identified in the Reactor Oversight Process Enhancement Project related to aging management, and implement the "Inspection Procedure (IP) Operating Experience (OpE) Update Process"; and (d) keep the Commission informed on various specified matters and emphasize to the industry the need for resolution of these issues.[82]

Following the Commission's issuance of its SRM, the Staff met with industry and other interested stakeholders to discuss subsequent license renewal-related issues, acted upon the Commission's instructions, briefed the Commission on its progress in addressing subsequent license renewal-related issues, and updated its regulatory guidance to specifically address subsequent license renewal. In particular, the Staff issued two regulatory guidance documents, updating the GALL Report and SRP-LR, for use in the preparation and review of SLR applications ("SLRAs"). These guidance documents are:

> (1) NUREG-2191, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report," Vols. 1 and 2 (July 2017) (ML17187A031 and ML17187A204); and
>
> (2) NUREG-2192, "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants" ("SRP-SLR") (July 2017) (ML17188A158).[83]

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[81] Guidance concerning the preparation and review of initial license renewal applications is provided in NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Rev. 2 ("SRP-LR") (Dec. 2010); and NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Rev. 2 (Dec. 2010).

[82] Staff Requirements – SECY-14-0016 – Ongoing Staff Activities to Assess Regulatory Considerations for Power Reactor Subsequent License Renewal" (Aug. 29, 2014) (ML14241A578).

[83] *See* "Final Guidance Documents for Subsequent License Renewal," 82 Fed. Reg. 32,588 (July 14, 2014). Subsequently, the Staff issued two other documents concerning the GALL-SLR and SRP-SLR: (a) NUREG-2221, "Technical Bases for Changes in the Subsequent License Renewal Guidance Documents NUREG–2191 and NUREG-2192" (Dec. 2017) (ML17362A126), and (b) NUREG-2222, "Disposition of Public Comments on the Draft Subsequent License Renewal Guidance Documents NUREG–2191 and NUREG-2192" (Dec. 2017). *See* "Supplementary Guidance Documents for Subsequent License Renewal," 83 Fed. Reg. 16,133 (Apr. 13, 2018).

In sum, the Atomic Energy Act and the Commission's regulations provide no limit on the number of times that a nuclear power plant's operating license may be renewed. The regulations in 10 C.F.R. Parts 51 and 54 establish the applicable requirements for nuclear power plant license renewals and, as the Commission made clear in 2014, the existing license renewal regulatory framework and regulatory process apply, as well, to subsequent license renewal. That regulatory framework and process are set out in 10 C.F.R. Parts 51 and 54, as supported by guidance in (a) the GALL-SLR Report (NUREG-2191); (b) the SRP-SLR (NUREG-2192), (c) the GEIS-LR, Rev. 1 (NUREG-1437, Rev. 1), and (d) the ESRP-LR (NUREG-1555, Supp. 1, Rev. 1).[84] Indeed, those are the regulatory requirements and guidance documents that will primarily frame the Staff's evaluation of the Turkey Point subsequent license renewal application.[85]

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[84] Additional guidance for the preparation of a subsequent license renewal application is provided in NEI-17-01, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 for Subsequent License Renewal (ML17339A599) and NEI 17-04, "Model SLR New and Significant Assessment Approach for SAMA, Revision 0," both of which the Staff approved for interim use on December 20, 2017.

[85] The Commission recently summarized these matters as follows**:**

> In August 2014, the Commission affirmed that no revisions to either the safety or environmental regulations are needed to support the assessment of a SLR application. However, the Commission directed the staff to update license renewal guidance, as needed, to provide additional clarity on the implementation of the license renewal regulatory framework. . . .
>
> The staff determined that no revisions were needed to the NRC guidance document entitled, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants," to support environmental reviews from 60 to 80 years. However, the staff determined that the GALL Report and the SRP-LR should be updated to facilitate more effective and efficient reviews of SLR applications.

Letter from Kristine L. Svinicki (Chairman, NRC) to Hon. John A. Barrasso (Chairman, U.S. Sen. Committee on Environment and Public Works) (July 19, 2018) (ML18170A241), Enclosure (ML18170A284), at 45-46 (emphasis added).

4. Environmental Review of License Renewal and SLR Applications

The National Environmental Policy Act of 1969, as amended ("NEPA"), 42 U.S.C. § 4321 *et seq.,* requires Federal agencies to include in any recommendation or report on proposals for major Federal actions significantly affecting the quality of the human environment, a detailed statement on:

> (i) the environmental impact of the proposed action,
>
> (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
>
> (iii) alternatives to the proposed action,
>
> (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
>
> (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.[86]

In accordance with NEPA, the NRC is required to take a "hard look" at the environmental impacts of a proposed major Federal action that could significantly affect the environment, as well as reasonable alternatives to that action.[87] This "hard look" is tempered by a "rule of reason" that requires agencies to address only impacts that are reasonably foreseeable – not remote and speculative.[88] "NEPA does not call for certainty or precision, but an *estimate* of anticipated (not unduly speculative) impacts."[89] Neither does NEPA call for Federal agencies to

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[86] NEPA, Section 102(2)(C), 42 U.S.C. § 4332.

[87] *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 87-88 (1998).

[88] *See, e.g., Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-156, 6 AEC 831, 836 (1973).

[89] *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005) (emphasis in original).

do the impossible.[90] Further, "NEPA gives agencies broad discretion to keep their inquiries within appropriate and manageable boundaries."[91] As the Commission has observed, "NEPA requires consideration of 'reasonable' alternatives, not all conceivable ones."[92] Further, the Staff's EISs "need only discuss those alternatives that . . . 'will bring about the ends' of the proposed action" – a principle equally applicable to Environmental Reports."[93]

The NRC has adopted regulations in 10 C.F.R. Part 51, implementing its NEPA responsibilities, pursuant to which the NRC Staff performs an environmental review for license renewal to assess the potential impacts of 20 additional years of operation.[94] In 1996, the Commission amended the environmental review requirements in 10 C.F.R. Part 51 to address the scope of environmental review for license renewal applications;[95] as part of that rulemaking, Appendix B was added to Part 51, delineating the issues that are to be considered in a license renewal environmental review.[96] The regulations in Part 51 and Appendix B were further amended in 2013, updating the Commission's 1996 findings; in particular, the 2013 amendment redefined the number and scope of the environmental impact issues that must be addressed

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[90] The Supreme Court has observed that where it is not possible for an agency to analyze the environmental consequences of a proposed action or alternatives to it, requiring such analysis would have "no factual predicate" and under those circumstances an Environmental Impact Statement ("EIS") is not required. *Kleppe v. Sierra Club*, 427 U.S. 390, 401-02 (1976).

[91] *Louisiana Energy Servs., L.P.*, CLI-98-3, 47 NRC at 103 (citation omitted).

[92] *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 338 (2012).

[93] *Id.* at 339 (footnotes omitted).

[94] *Turkey Point*, CLI-01-17, 54 NRC at 6-7.

[95] Final Rule, "Environmental Review of Renewal of Nuclear Power Plant Operating Licenses," 61 Fed. Reg. 28,467 (June 5, 1996).

[96] The 1996 rule added Appendix B to Subpart A of 10 C.F.R. Part 51, "Environmental Effect of Renewing the Operating License of a Nuclear Power Plant"; Appendix B included Table B-1, "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants," which summarized the findings of the 1996 GEIS.

during license renewal environmental reviews, and incorporated lessons learned and knowledge gained during previous license renewal environmental reviews.[97]

The regulations in 10 C.F.R. Part 51, Appendix B divide the license renewal environmental review into (1) generic issues, and (2) plant-specific issues. The generic impacts of operating a plant for an additional 20 years that are common to all plants, or to a specific subgroup of plants, were addressed in the Commission's "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" ("GEIS"), NUREG-1437 (May 1996), as later revised in 2013.[98] The findings and analyses contained in the GEIS were used by the Commission as the technical basis for its revisions of 10 C.F.R. Part 51, defining the scope of its review of the environmental impacts of license renewal under NEPA.

Generic impacts analyzed in the GEIS are designated as "Category 1" issues, whereas site-specific issues are designated as "Category 2" issues. A license renewal applicant is generally not required to discuss generic Category 1 issues in its Environmental Report, but instead may reference and adopt the Commission's generic findings set forth in 10 C.F.R. Part 51 and the GEIS.[99] In addition, pursuant to 10 C.F.R. § 51.53(c)(3)(iv), an applicant's environmental report "must contain any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware." Thus, an applicant must provide a plant-specific review of the non-generic "Category 2" issues in its Environmental

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[97] Final Rule, "Revisions to Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," 78 Fed. Reg. 37,281 (June 20, 2013).

[98] *See* NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," Rev. 1 (June 2013), Vols. 1-3 (ML13106A241, ML13106A242, and ML13106A244).

[99] *Turkey Point*, CLI-01-17, 54 NRC at 11. The Commission has emphasized that generic analysis is an appropriate method of meeting the agency's statutory obligations under NEPA. *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-09-10, 69 NRC 521, 523-25 (2009) (*citing Massachusetts v. NRC*, 522 F.3d 115 (1st Cir. 2008)).

Report, and must address any *new and significant* information which might render the Commission's generic Category 1 determinations incorrect in that proceeding.[100]

The Staff's license renewal environmental review is guided by the 2013 GEIS-LR (NUREG-1437, Rev. 1 (June 2013), and by the "Standard Review Plan for Environmental Review of Nuclear Power Plants – Operating License Renewal" ("ESRP-LR") (NUREG-1555, Supp. 1, Rev. 1) (June 2013). Like the applicant, the NRC Staff is not required to address generic (Category 1) impacts in its plant-specific environmental impact statement, which it publishes as a supplement to the GEIS ("SEIS").[101] The Staff must, however, address any new and significant information of which it becomes aware, which might affect the applicability of the Commission's generic Category 1 determinations in the proceeding.[102]

Contentions raising environmental issues in a license renewal proceeding are limited to those issues which are affected by license renewal and have not been addressed by rulemaking or on a generic basis.[103] As the Commission stated, Category 1 issues "are not subject to site-

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[100] *See, e.g., Exelon Generation Co., LLC* (Limerick Generating Station, Units 1 and 2), CLI-13-07, 78 NRC 199, 212-13 (2013); *Turkey Point*, CLI-01-17, 54 NRC at 11-12; *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), CLI-09-10, 69 NRC 521, 527 (2009).

[101] The 1996 GEIS identified 92 license renewal environmental issues, of which 69 were determined to be generic (*i.e.*, Category 1), 21 were determined to be plant-specific (*i.e.*, Category 2), and two did not fit into either category (i.e., uncategorized). The 2013 revision to the GEIS modified this list, identifying 78 environmental impact issues for license renewal, of which 59 were determined to be generic for all sites, 2 are uncategorized, and 17 are site-specific Category 2 issues. NUREG-1437, Rev. 1, Vol. 1, at 1-36. The findings of the environmental impact analyses conducted for the GEIS (as revised in 2013) are listed in Table B-1 of Appendix B, which lists each issue and its category level.

[102] *See, e.g., Limerick*, CLI-13-07, 78 NRC at 216-17; *Florida Power & Light Co*. (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-16-8, 83 NRC 417, 439 (2016). Following publication of a site-specific supplement to the GEIS, further supplementation is required only "if there are 'significant new circumstances or information' . . . [that] paint[s] a dramatically different picture of impacts compared to the description of impacts in the EIS.'" *Massachusetts v. NRC,* 708 F.3d at 68-69, *quoting Town of Winthrop v. FAA*, 535 F.3d 1, 7, 12 (1st Cir. 2008); *accord, Limerick*, CLI-13-07, 78 NRC at 211, 216-17.

[103] *Turkey Point*, CLI-01-17, 54 NRC at 11-12; *see* 10 C.F.R. § 51.53(c)(3)(i)-(ii).

specific review and thus fall beyond the scope of individual license renewal proceedings."[104] Thus, the Commission has stated:

> The license renewal GEIS determined that the environmental effects of storing spent fuel for an additional 20 years at the site of nuclear reactors would be "not significant." Accordingly, this finding was expressly incorporated into Part 51 of our regulations. Because the generic environmental analysis was incorporated into a regulation, the conclusions of that analysis may not be challenged in litigation unless the rule is waived by the Commission for a particular proceeding or the rule itself is suspended or altered in a rulemaking proceeding.[105]

B. Analysis of the Petitioners' Proposed Contentions

1. Joint Petitioners

The Joint Petitioners present five environmental contentions for litigation in this proceeding. As discussed below, the Staff does not oppose the admission of portions of Contentions 1-E and 5-E, but opposes the admission of Contentions 2-E, 3-E and 4-E in their entirety.

> Contention 1-E
> The Environmental Report fails to consider a reasonable range of alternatives to the proposed action, as required by NEPA and NRC implementing regulations.

[104] *Id.* at 12; *see* 10 C.F.R. § 51.53(c)(3)(i)-(ii). In *Turkey Point*, the Commission recognized that the rules "provide a number of opportunities for individuals to alert the Commission to new and significant information that might render a generic finding invalid, either with respect to all nuclear power plants or for one plant in particular. In the hearing process, for example, petitioners with new information showing that a generic rule would not serve its purpose at a particular plant may seek a waiver of the rule." *Turkey Point*, CLI-01-17, 54 NRC at 12. No request for waiver has been requested by any of the petitioners here.

[105] Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear Power Station), Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station), CLI-07-03, 65 NRC 13, 17 (footnotes omitted), reconsid. denied, CLI-07-13, 65 NRC 211, 214 (2007). This approach has been found to comply with NEPA. See, e.g., Massachusetts v. NRC, 708 F.3d at 68-69.

In this contention, the Joint Petitioners assert that the Applicant's Environmental Report considers only the proposed action and the "no action" alternative,[106] and omits consideration of another "reasonable and feasible" alternative, whereby the plants' cooling canal system (CCS) would be replaced with mechanical draft cooling towers to reduce the adverse environmental effects of the CCS.[107] The Joint Petitioners describe a number of impacts resulting from operation of the CCS, including (a) harm to threatened, endangered, and protected species (specifically, the threatened American crocodile) and essential fish habitat; (b) groundwater use conflicts (involving the generation and offsite migration of a hypersaline plume, and the proposed construction of a recovery well system for withdrawal and disposal of hypersaline groundwater; and (c) the release of radionuclides (tritium) in plant wastewater to groundwater.[108] The Joint Petitioners state that the Environmental Report considers, as part of the "no action" alternative, the construction of replacement power sources with mechanical draft cooling towers; that the natural gas plant at the site uses mechanical draft cooling towers; that Turkey Point Units 6 and 7 will use closed-cycle wet cooling towers; and that the cost of construction of cooling towers for Units 3 and 4 would be approximately $81 million per unit – all of which, the Joint Petitioners allege, demonstrates the reasonableness and feasibility of this alternative.[109]

NRC Staff Response to Contention 1-E

The Staff does not oppose the admission of Contention 1-E, insofar as it asserts that the Applicant's Environmental Report omits consideration of mechanical draft cooling towers in connection with license renewal of Turkey Point Units 3 and 4, as a reasonable alternative to

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[106] *Id*. at 17, *citing* ER at 7-1.

[107] *Id*. at 16, 19, 26.

[108] *Id*. at 19, 23-29.

[109] *Id*. at 17-18, 19-22.

use of the plants' cooling canal system. As noted by the Joint Petitioners, the Applicant's ER considers only the proposed action and the "no action" alternative,[110] and omits consideration of a cooling tower alternative. The Staff recognizes that NEPA requires the NRC to consider "reasonable" alternatives to the proposed Federal action,[111] and the Staff's SEIS is required to consider "the environmental impacts of alternatives to the proposed action; and alternatives available for reducing or avoiding adverse environmental effects."[112] Accordingly, the Staff does not oppose the admission of Contention 1-E, as a contention of omission.

While the Staff does not oppose the admission of Contention 1-E as a contention of omission, the Staff opposes the admission (as part of the contention) of issues concerning the environmental impacts of continued CCS operation.[113] In this regard, the Joint Petitioners describe a number of alleged adverse impacts resulting from operation of the CCS, including (a) harm to threatened, endangered, and protected species and essential fish habitat, (b) groundwater use conflicts, and (c) the release of tritium in plant wastewater to groundwater. Nowhere, however, do the Joint Petitioners point to any portion of the Applicant's ER which they believe contains an inadequate description of those alleged impacts.[114] Rather, the Joint Petitioners contest only the Applicant's general statement that the continued operation of

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[110] *Id*. at 17, *citing* ER at 7-1.

[111] *Seabrook,* CLI-12-5, 75 NRC at 338.

[112] 10 C.F.R. § 51.71(d); *see* 10 C.F.R § 51.95(c)(1) and (2). The Staff notes that it will consider a cooling tower alternative in its Supplemental Environmental Impact Statement ("SEIS") for subsequent license renewal of Turkey Point Units 3 and 4. In undertaking an evaluation of a cooling tower alternative, the Staff expresses no position regarding the environmental impacts of CCS operation or the need for further mitigation of those impacts beyond the measures currently in place or mandated by State and local regulatory authorities.

[113] *See* Joint Petition at 17-29.

[114] *See, e.g.*, ER § 3.7.8, at 3-177 – 3-213 (endangered, threatened and special status species); ER § 4.6.6, at 4-37 – 4-43 (same); ER §§ 4.5.2 – 4.5.4, at 4-22 – 4-24 (groundwater use conflicts); ER § 4.5.5, at 4-25 – 4.30 (radionuclides released to groundwater).

Units 3 and 4 "does not result in significant adverse effects to the environment"[115] – and indeed, their petition often cites the ER in support of their description of the alleged impacts.[116]

Finally, while the contention broadly asserts that the Applicant's ER "fails to consider a reasonable range of alternatives to the proposed action," the only alternative that is specifically cited in the contention is license renewal of Turkey Point Units 3 and 4 using a mechanical draft cooling tower alternative. Accordingly, alternatives other than the use of mechanical draft cooling towers should be excluded from this contention.

In sum, insofar as Contention 1-E describes the environmental impacts of CCS operation or the need to consider alternatives other than mechanical draft cooling towers, the contention fails to demonstrate that "a genuine dispute exists with the applicant/licensee on a genuine issue of material fact" and fails to provide "references to specific portions of the application . . . that the petitioner disputes and the supporting reasons for each dispute," as required by 10 C.F.R. § 2.309(f)(1)(vi).[117] Accordingly, the impacts of CCS operation alleged by the Joint Petitioners, pertaining to threatened, endangered, and protected species and essential fish habitat, groundwater use conflicts, the release of tritium in plant wastewater to groundwater, and alternatives other than mechanical draft cooling towers, should be excluded from litigation of this contention.[118]

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[115] Joint Petition at 19 and 28, *citing* ER at 7-39. The Joint Petition asserts that the Applicant's general statement, cited in the text above, "is . . . contrary to . . . the plain facts." *Id.* at 28, n.121.

[116] *See* Joint Petition at 19 nn.85-87, *citing* ER at 4-37 – 4-43 (threatened, endangered, and protected species, and essential fish habitat), ER at 4-22 – 4-23 (groundwater use conflicts), and ER at 4-25 – 4-29 (radionuclides released to groundwater); Joint Petition at 25 n.110-112, *citing* ER at 9-11, 9-12 – 9-13, and 3-109 (groundwater use conflicts); Joint Petition at 28 n.124, *citing* ER at 4-26 (radionuclides released to groundwater).

[117] *Palisades*, LBP-06-10, 63 NRC at 340-42.

[118] Moreover, a determination of the precise impacts of CCS operation is unnecessary to resolution of the contention's central assertion that a "reasonable and feasible alternative" was omitted from the Applicant's ER.

> Contention 2-E
> The Environmental Report fails to adequately consider the cumulative impacts of continued operation of [Turkey Point] Units 3 and 4.[119]

In Contention 2-E, the Joint Petitioners assert that "[t]he Environmental Report fails to adequately consider the cumulative impacts of continued operation of [Turkey Point] units 3 and 4" on water resources, in combination with "the reasonably foreseeable effects of climate change, including sea level rise and hotter temperatures."[120] The Joint Petitioners state that sea level and air temperature within the vicinity of Turkey Point will be higher during the period of extended operation (*i.e.,* from 2032 to 2053) than they are today. The Joint Petitioners cite the Declaration of Dr. Robert Kopp,[121] who states that, "[t]hrough 2060, . . . there is between a 68 percent [chance] and a 95 percent chance that average sea-level rise at Key West [which Dr. Kopp posits as a comparable location to Turkey Point] will exceed 1 foot above the National Tidal Datum Epoch," and "[t]hrough 2060, there is a 10-37 [percent] chance that average sea level rise will exceed 2 feet under the High emissions scenario and a 3-8 [percent] chance under the Low emissions scenario . . . ."[122] Dr. Kopp concludes that "under a low-emissions scenario and with a relatively stable Antarctic ice sheet, it is likely (greater than two chances in three) that sea-level rise will exceed 1 foot in south Florida by 2060 . . . ."[123] As a consequence, Dr. Kopp

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[119] Joint Petition at 30.

[120] *Id.* at 30-31, *citing* ER at 4-62 – 4-74. The issue of cumulative impacts is a Category 2 issue. *See* 10 C.F.R. Part 51, Table B-1 (2018), at 66.

[121] Declaration of Dr. Robert Kopp (July 26, 2018) (Joint Petition, Att. N) ("Kopp Declaration").

[122] *Id.* at 12, ¶ 30.

[123] *Id*. at 16, ¶ 38. Dr. Kopp provides other probability estimates of future sea level rise, using a number of alternative assumptions. For example, he states that "[u]nder a high-emissions scenario, it is very likely that south Florida sea-level rise will exceed 1 foot by 2060, and there is between about a 1-in-10 chance (with a relatively stable Antarctic ice sheet) and a 1-in-3 chance (with a pessimistic model of Antarctic instability) that it will exceed 2 feet by 2060" and "between about a 1-in-200 and a 1-in-40 chance that [it] will exceed 3 feet by 2060." *Id*. at 16, ¶ 39.

states that, assuming storm characteristics do not change, the frequency and extent of extreme flooding associated with coastal storms will increase[124] because "a tide or storm of a given magnitude will produce a more extreme total water level than it would have with lower average sea level."[125] Consequently, "[i]f the sea level rises by one foot, . . . the probability of storms increasing water levels to the height of 2.0 feet becomes 50 [percent] rather than 1 [percent]."[126]

With respect to air temperatures, the Joint Petitioners assert that in the Southeast U.S. for the 2036-2065 time period, air temperature increases are projected to range from 3.4°F to 4.3°F,[127] and changes in temperature extremes are projected to be 5.79°F for the warmest day of the year and 11.09°F for the "warmest 5-day, 1-in-10-year event" compared to the 1976–2005 period.[128]

Finally, the Joint Petitioners assert that "reasonably foreseeable impacts from sea level rise will increase the risk of flooding at Turkey Point, including the potential for overtopping or breach of the canal system, leading to direct discharges of polluted canal water into surface water resources including Biscayne Bay."[129] Similarly, they claim that "[h]igher air temperatures will increase the rate of evaporation in the [CCS] leading to more saline conditions. Higher salinity in the [CCS] will . . . adversely impact groundwater resources."[130] And, they claim that

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[124] *Id*. at 3-4, ¶ 12, *citing* William V. Sweet, et al., "Sea Level Rise," in CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOL. 1 333–363 (D.J. Wuebbles et al. eds., 2017).

[125] *Id*. at 13, ¶ 31.

[126] Joint Petition at 35.

[127] *Id.*, *citing* CLIMATE SCIENCE SPECIAL REPORT at 197, Table 6.4.

[128] *Id., citing* CLIMATE SCIENCE SPECIAL REPORT at 198, Table 6.5.

[129] Joint Petition, at 38.

[130] *Id*.

the Applicant erroneously assumes that the alleged impacts of the hypersaline plume resulting from CCS operation will be managed through the plant's environmental permits.[131]

NRC Staff Response to Contention 2-E

The Staff opposes the admission of this contention in that it fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(v)-(vi). In this regard, the Joint Petitioners correctly state that an applicant's Environmental Report must consider cumulative impacts as a site-specific Category 2 issue[132] and they provide expert opinion regarding the potential for sea level and air temperature increases in the vicinity of Turkey Point. Significantly, however, they fail to (a) provide any basis for their claim that subsequent license renewal of Turkey Point would have a cumulative effect with climate change impacts, (b) show that their concerns over possible overtopping of the CCS and increased salinity in the CCS are reasonably foreseeable impacts of subsequent license renewal, or (c) demonstrate a genuine dispute of material fact regarding the Applicant's discussion of climate change in its Environmental Report. Accordingly, this contention should be rejected.

(a) The Contention Lacks Basis

To the extent that Contention 2-E asserts that continued operation of the CCS during the subsequent license renewal term will have cumulative surface water impacts, the contention lacks basis. In this regard, the Joint Petitioners cite the opinion of Dr. Kopp in support of their claim that climate change will result in increased sea levels and air temperatures in the vicinity of Turkey Point, but they do not provide any support to show how the continued operation of

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[131] *Id.* at 38-39.

[132] "Cumulative impacts of continued operations and refurbishment associated with license renewal must be considered on a plant-specific basis. Impacts would depend on regional resource characteristics, the resource-specific impacts of license renewal, and the cumulative significance of other factors affecting the resource." 10 C.F.R. Part 51, Table B-1 (2018), at 66.

Turkey Point, *in combination with* these increased sea levels and air temperatures, will have a cumulative impact on the environment.[133]

Thus, even accepting their claims regarding future increases in sea level and air temperature, the Joint Petitioners do not link those changes to the impacts of Turkey Point's continued operation. Rather, they assert only that (1) "reasonably foreseeable impacts from sea level rise will increase the risk of flooding at Turkey Point, including the potential for overtopping or breach of the canal system, leading to direct discharges of polluted canal water into surface water resources including Biscayne Bay,"[134] and (2) a reasonably foreseeable increase in air temperature will "increase the rate of evaporation in the cooling canal system leading to more saline conditions."[135] These are conclusory statements, however, with no support provided. For instance, the Joint Petitioners do not discuss such necessary information as the relationship between their projected sea levels and the relevant elevations of the Turkey Point site, its sea barriers, or the CCS, to support their claim that the site will be flooded and the CCS will be overtopped or breached.[136] Similarly, while an increase in air temperature, in theory, may lead to increased evaporation in the CCS, the Joint Petitioners provide no support to demonstrate that a projected air temperature increase of 3.4°F to 4.3°F[137] would increase the evaporation in

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[133] "Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. Accordingly, climate change impacts are only relevant to the extent that they, in combination with the impacts of the proposed action, significantly affect the environment; they are not relevant separate from the impacts of the proposed action. *See also* 42 U.S.C. § 4332(C) (requiring "a detailed statement . . . on . . . the environmental impact *of the proposed action* . . .") (emphasis added); 10 C.F.R. § 51.45(b) (requiring an environmental report to discuss "the impact *of the proposed action* on the environment") (emphasis added).

[134] Joint Petition at 38.

[135] *Id*. at 38. *See also id.* at 36-37.

[136] *See, e.g.*, Joint Petition at 38.

[137] *Id*. at 35, *citing* CLIMATE SCIENCE SPECIAL REPORT at 197, Table 6.4.

the CCS to any particular extent, or to such an extent that there would be a noticeable increase in CCS salinity.[138]

In this regard, neither mere speculation nor bare or conclusory assertions, even by an expert, suffices to allow the admission of a proposed contention.[139] While a Board may view a petitioner's supporting information in a light that is favorable to the petitioner, if a petitioner neglects to provide the requisite support for its contentions, the Board may not make assumptions or draw inferences that favor the petitioner, nor may the Board supply the information that a contention is lacking.[140] Further, it is not the Board's (or the parties') responsibility to sift through the documents attached to a petitioner's pleading in a search for support of its assertions.[141] Inasmuch as the Joint Petitioners provide no support for their claim that the ER fails to adequately consider the cumulative impacts of continued operation combined with climate change, other than the bald assertions that there will be overtopping of the CCS and increased salinity in the CCS, their assertions fail to satisfy 10 C.F.R. § 2.309(f)(1)(v) and (vi). Therefore, the Joint Petitioners' assertions regarding the cumulative impacts of climate change and subsequent license renewal of Turkey Point are not admissible.

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[138] *See, e.g.*, Joint Petition at 38. This is distinct from the issue addressed by a previous Board regarding a license amendment to increase the ultimate heat sink water temperature limit in the CCS from 100°F to 104°F. *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-15-13, 81 NRC 456 (2015). In that proceeding, the effects of an increase in CCS water temperature and salinity was at issue; in contrast, here, the Joint Petitioners seek to litigate the effects of a 3.4°F to 4.3°F increase in air temperature on CCS water temperature and salinity and, in turn, on the environment.

[139] *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006); *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

[140] *See Crow Butte Res., Inc.* (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 553-54 (2009); *Arizona Pub. Serv. Co*. (Palo Verde Nuclear Generating Station, Unit Nos. 1, 2, and 3), CLI 91-12, 34 NRC 149, 155 (1991).

[141] *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 332 (2012).

(a) Overtopping of the CCS and Increased Salinity in the CCS Are Not Reasonably Foreseeable Impacts

While the Joint Petitioners postulate an increase in sea level and air temperature, they do not demonstrate that overtopping of the CCS or increased salinity in the CCS are reasonably foreseeable impacts and that the Applicant, therefore, should have discussed these impacts in the ER. Specifically, the Joint Petitioners do not discuss how these impacts are reasonably foreseeable in light of (a) FPL's plans to manage the CCS during the period of extended operation, and (b) the 2016 consent order between FPL and the State of Florida, Department of Environmental Protection ("FDEP"), imposing mitigation and monitoring requirements to redress water quality conditions in the CCS.

As discussed in the Turkey Point subsequent license renewal application, FPL intends to use an aging management program consistent with the GALL-SLR Report to manage the loss of material or form of the CCS.[142] The GALL-SLR Report provides that this program will address "the effects of natural phenomena that may affect water-control structures,"[143] monitor for "erosion or degradation that may impose constraints on the function of the cooling system and present a potential hazard to the safety of the plant,"[144] provide a projection of degradation until the next scheduled inspection,[145] and require remedial or mitigating measures.[146] The Joint Petitioners, however, do not discuss this program. Additionally, the Joint Petitioners do not

[142] Florida Power & Light Co., Turkey Point Nuclear Plant Units 3 and 4, Subsequent License Renewal Application, Rev. 1, at 2.4-21 – 2.4-22, 3.5-66, 3.5-125 (Apr. 2018) (ML18113A146) ("SLRA") (providing that Turkey Point's AMP will be consistent with the aging management program of GALL-SLR Report at XI.S7, "Inspection of Water-Control Structures Associated with Nuclear Power Plants").

[143] NUREG-2191, Vol. 2, Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report, at XI.S7-1 (Jul. 2017) (ML17187A204).

[144] *Id*. at XI.S7-2.

[145] *Id*. at XI.S7-4.

[146] *Id*.

discuss the requirements of the consent order that FPL is to "prevent releases of groundwater from the CCS to surface waters connected to Biscayne Bay that result in exceedances of surface water quality standards in Biscayne Bay," and that FPL must perform a "thorough inspection of the CCS periphery" and "address any material breaches or structural defects."[147]

Finally, even if overtopping does occur, the Joint Petitioners do not explain how it would significantly impact the environment given that the consent order requires FPL to maintain an average annual CCS salinity at or below 34 practical salinity units (PSU) and to submit a detailed report outlining the potential sources of the nutrients found in the CCS and to implement a plan to minimize these nutrient levels.[148] Similarly, with respect to the argument that increased air temperature will result in higher CCS salinity, the Joint Petitioners do not explain why it is reasonably foreseeable that an increase in air temperatures will lead to increased salinity in the CCS, in light of the consent order's requirement that FPL achieve an average annual CCS salinity of at or below 34 PSU at the completion of the fourth year of freshening activities, and maintain this salinity thereafter.[149]

As discussed *supra* at 24-25, NEPA is subject to a "rule of reason," such that an evaluation of environmental impacts need not address all theoretical possibilities, but only those that have some reasonable possibility of occurring.[150] The Joint Petitioners, however, do not demonstrate that the postulated overtopping of the CCS and the increased salinity in the CCS have a reasonable possibility of occurring despite FPL's aging management program for the

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[147] *Florida Department of Environmental Protection v. FPL*, OGC File No. 16-0241 (Consent Order), at 7, 10-11, ¶¶ 19, 21 (Jun. 20, 2016) (ML16216A216) ("Consent Order").

[148] *Id*. at 7-10, ¶¶ 19, 20.

[149] *Id*. at 7, ¶ 19.

[150] *Long Island Lighting Co.* (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 836 (1973). *See also Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-22, 72 NRC 202, 208 (2010) (explaining that NEPA requirements are tempered by a practical rule of reason).

CCS and FPL's requirement to comply with the consent order. Therefore, these assertions in Contention 2-E are inadmissible.

(c) Groundwater Impacts

Insofar as Contention 2-E asserts that subsequent license renewal of Turkey Point Units 3 and 4 will result in cumulative impacts to groundwater that have not been addressed in the ER, the contention lacks basis. In fact, the Applicant's ER discusses the cumulative impacts to groundwater resulting from operation of Turkey Point Units 3 and 4 in combination with impacts to groundwater resulting from operation of "the other Turkey Point facilities and . . . from other projects and activities in the surrounding area," by incorporating by reference the cumulative impacts discussion in the environmental impact statement ("EIS") prepared by the NRC Staff in 2016 for the combined licenses for Turkey Point Units 6 and 7.[151] The Staff's EIS for the Turkey Point Units 6 and 7 COLs discussed the contribution from Turkey Point Units 3 and 4,[152] as well as the effect of the consent order requiring freshening of the CCS and the 2015 consent agreement with Miami-Dade County for remediating the hypersaline plume.[153] The ER concluded that the cumulative impacts to groundwater would be small and are managed because "FPL continues to comply with its permits for groundwater withdrawals and injection, the FDEP [consent order] for freshening of the cooling canals, and the [consent agreement] with Miami-Dade County for remediation of the hypersaline plume."[154] Further, the ER cites NRC Regulatory Guide 4.2, stating that (for resource areas regulated through a permitting process),

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[151] ER at 4-68.

[152] *See* NUREG-2176, Vol. 2, Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 and 7, at Table 7-1 (Oct. 2016) (ML16300A137) (listing the projects of "Turkey Point Units 1-5" and "Turkey Point Units 3 and 4").

[153] *See id*. (listing the projects of "[f]reshening of the water in the cooling canals of the industrial waste water facility" and "[r]emediation of hypersalinity plume").

[154] ER at 4-69.

"it may be assumed that cumulative impacts are managed as long as facility operations are in compliance with their respective permits."[155]

The Joint Petitioners dismiss the Applicant's conclusion in the ER, that FPL's compliance with State permits ensures that cumulative impacts to groundwater would be managed.[156] Rather, they argue that, as a matter of law, FPL may not rely on Regulatory Guide 4.2, because FPL has previously "violated its permits and relevant regulations with respect to groundwater resources."[157] This is not a sound argument, however, in that the Joint Petitioners have shown no reason to believe that FPL's previous permit violations will be repeated in the future – especially where, as here, the permitting agency (FDEP) has taken enforcement action to rectify the non-compliance, and the permitted entity (FPL) has undertaken actions to rectify its past non-compliance and to mitigate the resulting impacts. Specifically, the FDEP consent order requires FPL to rectify its past violation of its National Pollutant Discharge Elimination System/Industrial Wastewater Permit, in accordance with the specific terms of the consent order.[158] Further, the FDEP consent order requires remediation of the hypersaline plume and imposes requirements for monitoring to demonstrate that the remediation has been successful in halting and retracting the extent of the plume.[159] The Joint Petitioners do not dispute that FPL is complying with the consent order at this time. Additionally, it is reasonable for the NRC to expect that the State regulatory authority charged with permitting the CCS will

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[155] *Id*., *citing* NRC Regulatory Guide 4.2, Supp. 1, Rev. 1, Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications, at 49 (2013) (ML13067A354) ("Reg. Guide 4.2").

[156] Joint Petition at 38-39.

[157] *Id.* at 39.

[158] *See id.*at 39 n.169, *citing* Consent Order at ¶ 19.

[159] Consent Order at 7-10, ¶ 20.

adequately enforce its own regulations.[160] Therefore, this argument fails to present an admissible issue for litigation.

(d) Other Asserted Impacts

Finally, the Joint Petitioners fault the ER (a) for "omit[ting] sea level rise from the list of 'climate change indicators,'"[161] (b) for not discussing the impacts of sea level rise on Turkey Point itself,[162] and (c) for not addressing their claim that an "increase in air temperature at Turkey Point during the subsequent license renewal period, absent mitigating measures, will cause intake water temperatures to exceed the 104°F limit in Applicant's operating license."[163]

These assertions do not establish an admissible issue. First, as the Joint Petitioners acknowledge, the Applicant's ER incorporates by reference the information in the license renewal GEIS[164] – and the license renewal GEIS does in fact discuss sea level rise as a climate change impact.[165] Accordingly, this assertion fails to demonstrate a genuine dispute of material fact with the Applicant, contrary to 10 C.F.R. § 2.309(f)(1)(vi). Second, the Joint Petitioners' assertions regarding the effects of increased sea level and intake water temperatures on the plant raise a safety issue that challenges the adequacy of Turkey Point's current licensing basis

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[160] *See Florida Power & Light Co.* (Turkey Point Units 6 and 7), LBP-17-5, 86 NRC 1, 29 (2017).

[161] Joint Petition at 37 (quoting ER at 4-69).

[162] *Id.* at 37-38.

[163] *Id.* at 36.

[164] *Id.* at 40-41, *quoting Massachusetts v. United States*, 522 F.3d 115, 120 (1st Cir. 2008) (the requirements are intended to ensure that, when the ER and the license renewal GEIS are combined, they cover all issues that NEPA requires be addressed).

[165] *See, e.g.,* GEIS at 4-237 – 4-243.

and, therefore, are not within the scope of license renewal;[166] this is demonstrated by the Joint Petitioner's citations to an FPL document regarding its reevaluated flood hazard information,[167] which FPL submitted to the NRC to address a current operating license issue.[168] Accordingly, these assertions are also inadmissible.

> Contention 3-E
> The Environmental Report fails to consider new and significant information regarding the effect of sea level [rise] on certain Category 1 and 2 issues, in violation of 10 C.F.R. § 51.53(C)(3)(iv).[169]

In Contention 3-E, the Joint Petitioners assert that the ER at Section 5, "Assessment of New and Significant Information," is remiss for stating that "FPL is aware of no new and significant information regarding the environmental impacts of license renewal associated with [Turkey Point]."[170] The Joint Petitioners contend that the effect of sea level rise on the issues of

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[166] 10 C.F.R. § 54.30(b). *See, e.g., Tennessee Valley Authority* (Sequoyah Nuclear Plant, Units 1 and 2), LBP-13-8, 78 NRC 1, 11-14 (2013) (finding that a proposed contention that a license renewal application fails to adequately address the risk of flooding is inadmissible because it has to do with whether the applicant is in compliance with its current licensing basis – an issue which, consistent with 10 C.F.R. § 54.30, is not within the scope of license renewal).

[167] *See* Joint Petition at 37, 42, 48, and 56, *citing* Letter from Thomas Summers, FPL, to NRC, "NEI 12-06, Revision 2, Appendix G, G.4.2, Mitigating Strategies Assessment (MSA) for FLEX Strategies Report for the New Flood Hazard Information" (Dec. 20, 2016) (ML17012A065) ("Flood Hazard Information Letter").

[168] Flood Hazard Information Letter, Enclosure at 3 (stating that the reevaluated flood hazards for Turkey Point "exceed the plant's current design basis" but can be addressed by the facility's existing diverse and flexible ("FLEX") coping strategies "without additional changes other than those previously identified for enhancing plant barriers").

[169] Joint Petition at 39.

[170] *Id*. at 42 (quoting ER at 5-4). The Joint Petitioners also refer to Section 3 of the ER as part of their argument that the ER "fails to analyze new and significant information regarding the effect of sea level rise . . . ." *Id*. at 39. This is duplicative of the Joint Petitioners' argument in Contention 4-E that Section 3 of the ER "erroneously fails to describe the reasonably foreseeable affected environment during the subsequent license renewal period . . . ." *Id.* at 47. As discussed in the Staff's response to Contention 4-E, the Joint Petitioners' argument regarding Section 3 of the ER is inadmissible because (1) there is no requirement that Section 3 discuss the effects of climate change, (2) the ER *does* discuss relevant effects of climate change during the license renewal period, and (3) the specific omissions identified by the Joint Petitioners are not supported by a showing of facts or expert opinion that the asserted environmental impacts are reasonably foreseeable.

surface water use conflicts, groundwater use conflicts, cumulative impacts, and termination of plant operations and decommissioning, constitutes new and significant information that should be discussed in ER Section 3, "Affected Environment."[171] Specifically, the Joint Petitioners state that the ER should "account for the effect sea level rise will have on freshwater availability, ground water resources, and release of polluted cooling water into Biscayne Bay."[172] They further state that sea level rise will "eliminate[] the 'closed-loop' nature of the cooling canal system" and will "result in a frequent interchange of water from Biscayne Bay and the cooling canal system."[173] They state that "[t]he Environmental Report's cumulative effects analysis (§ 4.12) fails entirely to discuss the sea level rise-related impacts upon affected resources,"[174] and that "[s]ea level rise will affect Applicant's ability to terminate plant operations and decommission the plant."[175]

NRC Staff Response to Contention 3-E

The Staff opposes the admission of this contention in that it fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(iii)-(vi).

First, Contention 3-E is inadmissible because it misconstrues the requirement of 10 C.F.R. § 51.53(c)(3)(iv). In 10 C.F.R. § 51.53(c)(3)(iv), the Commission requires that an environmental report for license renewal must "contain any new and significant information regarding the environmental impacts *of license renewal*" of which the applicant is aware.[176] The Joint Petitioners seek to demonstrate that sea levels will rise, but do not go on to show how this

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[171] *Id.* at 39-40.

[172] *Id.* at 44.

[173] Joint Petition at 44-45.

[174] *Id*. at 43-44.

[175] *Id*. at 45.

[176] 10 C.F.R. § 51.53(c)(3)(iv) (emphasis added).

is related to license renewal. Moreover, neither NEPA nor the NRC's regulations require an environmental report to discuss sea level rise separate from the impacts of the proposed action of license renewal.[177]

Similarly, the license renewal GEIS provides that each license renewal environmental impact statement will include a plant-specific analysis of the impacts of climate change specifically on those resource areas affected by the proposed action of license renewal.[178] The Joint Petitioners have not shown that the Applicant's ER fails to consider this issue in its discussion of the impacts of Turkey Point's subsequent license renewal on the resource areas of concern to the Joint Petitioners. Therefore, by not tying their argument regarding new and significant information to the proposed action of license renewal, the Joint Petitioners have not demonstrated that their claims are material to the findings that the NRC must make in this proceeding and, thus, their assertions do not raise an admissible issue pursuant to 10 C.F.R. § 2.309(f)(1)(iv).

Second, to the extent that the Joint Petitioners attempt to tie sea level rise to the proposed action of license renewal (*i.e.*, by asserting that sea level rise will result in the release of water from the CCS),[179] their argument is conclusory and without support. As discussed in the Staff's response to Contention 2-E, the Joint Petitioners' assertions lack a sufficient factual basis because they do not explain why a rise in sea level would affect Turkey Point. Therefore, this argument is inadmissible pursuant to 10 C.F.R. § 2.309(f)(1)(v). Likewise, the Joint

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[177] 42 U.S.C. § 4332(C) (requiring "a detailed statement . . . on . . . the environmental impact *of the proposed action* . . .") (emphasis added); 10 C.F.R. § 51.45(b) (requiring an environmental report to discuss "the impact *of the proposed action* on the environment") (emphasis added).

[178] GEIS at 1-30. *See also* NUREG-1437, Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 58, Regarding River Bend Station, Unit 1, Draft Report for Comment, at 4-74 (May 2018) (ML18143B736) ("[T]he NRC staff considers the potential cumulative, or overlapping, impacts from climate change on environmental resources that could be impacted by the proposed action.").

[179] Joint Petition at 44-45.

Petitioners' argument that the ER's analysis of cumulative effects fails to discuss "sea level rise-related impacts upon affected resources"[180] is inadmissible for this same reason.

Third, the Joint Petitioners do not discuss the CCS aging management program proposed in the subsequent license renewal application,[181] or the applicant's obligation to ensure that the intended functions of its cooling canal system are maintained in accordance with the plants' CLB.[182] Further, they do not explain why, in light of this aging management program, their assertion that there will be a "frequent interchange of water from Biscayne Bay and the cooling canal system" has any reasonable possibility of occurring.

Similarly, the Joint Petitioners also do not discuss the FDEP's consent order with which FPL is required to comply, and do not explain how, in light of the consent order's requirements, overtopping of the CCS would result in any significant environmental impacts. For example, the consent order requires FPL to maintain an average annual CCS salinity at or below 34 PSU, to submit a detailed report outlining the potential sources of the nutrients found in the CCS, and to implement a plan to minimize these nutrient levels.[183] Moreover, the consent order would preclude any significant interchanges of water between the CCS and Biscayne Bay, through its requirement that FPL "prevent releases of groundwater from the CCS to surface waters connected to Biscayne Bay that result in exceedances of surface water quality standards in Biscayne Bay" and that FPL conduct a "thorough inspection of the CCS periphery" and "address any material breaches or structural defects."[184] Therefore, the Joint Petitioners have not shown

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[180] *Id.* at 43-44.

[181] SLRA, Rev. 1, at 2.4-21 – 2.4-22, and 3.5-63 (Apr. 2018) (ML18113A146). *See also* NUREG-2191, Vol. 2, Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report, at XI.S7-1 – XI.S7-1 (Jul. 2017) (ML17187A204).

[182] 10 C.F.R. § 54.30(a).

[183] Consent Order at 7-10, ¶¶ 19, 20.

[184] *Id.* at 7, 10-12, ¶¶ 19, 21.

that their concerns regarding potential overtopping of the CCS are material to the findings that the NRC must make in this proceeding or that a genuine dispute of material fact exists with the Applicant on a material issue of law or fact. Accordingly, this issue is inadmissible pursuant to 10 C.F.R. § 2.309(f)(1)(iv) and (vi).

Finally, the Joint Petitioners' argument regarding sea level rise and its potential impact on FPL's "ability" to terminate plant operations and decommission Turkey Point Units 3 and 4[185] is also inadmissible. The ability to decommission, however, is a safety issue that is not unique to subsequent license renewal; instead, it is an operating licensing issue.[186] Therefore, this concern is beyond the scope of this subsequent license renewal proceeding and, pursuant to 10 C.F.R. § 2.309(f)(1)(iii), is inadmissible.[187]

In sum, Contention 3-E fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(iii)-(vi) and is, therefore, inadmissible.

> Contention 4-E
> The Environmental Report fails to describe the foreseeable affected environment during the subsequent license renewal period.[188]

In Contention 4-E, the Joint Petitioners argue that Section 3, "Affected Environment," of the ER must describe the affected environment as it will exist during the subsequent license renewal period (i.e., from 2032 to 2053).[189] Specifically, they fault (a) Section 3.3, "Meteorology and Air Quality," for "omit[ting] information about reasonably foreseeable increases in the ambient air temperature during the license renewal period" which can "affect the cooling canal

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[185] Joint Petition at 45.

[186] *See* 10 C.F.R. § 54.30(b).

[187] *See, e.g., Sequoyah*, LBP-13-8, 78 NRC at 11-12.

[188] Joint Petition at 47.

[189] *Id.* at 47-48.

system's heat exchange capacity";[190] (b) Section 3.6.1.3, "Potential for Flooding," for "omit[ting] relevant information about reasonably foreseeable and significant sea level rise" which "will dramatically increase the rate of flooding";[191] and (c) Section 3.6.2, "Groundwater Resources," for omitting "the reasonably foreseeable condition of groundwater resources during the relevant time period" which will affect "whether sufficient groundwater resources will be available during the license renewal period."[192] Without such information in Section 3, the Joint Petitioners argue that the ER's analyses of environmental impacts in Section 4, mitigation actions in Section 6, and alternatives in Section 8 are insufficient.[193]

NRC Staff Response to Contention 4-E

The Staff opposes the admission of this contention in that it fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(iv)-(vi).

First, the Joint Petitioners' argument that the future environment must be discussed specifically in *Section 3* of the ER is not material to the findings that the NRC must make. In fact, the NRC's longstanding practice has been to discuss future environmental conditions in *Section 4* of its environmental impact statements, rather than in Section 3 (which describes existing environmental conditions at the time the application is submitted). As stated in the license renewal GEIS, the currently existing environment should be discussed in Section 3 (*i.e.*, the baseline conditions) and then, in Section 4, the incremental potential environmental impacts of license renewal, including the impacts of climate change during the license renewal period, should be evaluated.[194] Thus, the license renewal GEIS describes the environmental impacts of

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[190] *Id.* at 55-56.

[191] *Id.* at 56-57.

[192] *Id.* at 57-58.

[193] *Id.* at 47.

[194] GEIS at 3-1.

climate change that are common to all alternatives in Section 4.12.3.2, and it describes the cumulative impacts of the proposed action combined with climate change in Section 4.13.12. The ER describes the effects of climate change when combined with the effects of the proposed action, in Sections 4.12.4.3 and 4.12.5.3.[195] Although the Joint Petitioners would prefer to see the effects of climate change discussed in Section 3 of the ER, that preference is not material to the issue of whether an environmental report's evaluation of the environmental impacts of the proposed action take into account the effects of climate change during the license renewal period.[196]

Second, the Joint Petitioners are incorrect in their assertion that the ER omits any description of the effects of climate change during the license renewal period.[197] As the Joint Petitioners acknowledge, the Applicant's ER incorporates by reference the information in the license renewal GEIS.[198] The license renewal GEIS, in turn, includes all of the potential effects of climate change that the Joint Petitioners assert are missing from the ER, including sea level rise, increased air temperature, increased water temperature, increased water acidity, increased frequency and intensity of heavy downpours, drought, and more intense hurricanes.[199] In addition, the Applicant's ER cites the Staff's EIS for the Turkey Point Units 6 and 7 combined

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[195] ER at 4-69, 4-71 (discussing climate change with respect to water resources and ecological resources, respectively).

[196] *See* 42 U.S.C. § 4332(C) (requiring "a detailed statement . . . on . . . the environmental impact *of the proposed action* . . .") (emphasis added); 10 C.F.R. § 51.45(b) (requiring an environmental report to discuss "the impact *of the proposed action* on the environment") (emphasis added).

[197] Joint Petition at 47-48.

[198] *Id.* at 40-41.

[199] *Compare* GEIS at 4-237 – 4-241 *with* Joint Petition at 48 (arguing that the ER must describe "sea level rise, increased air temperature, increased surface water temperature, acidification, annual precipitation, drought, and increased storm intensity").

licenses, as part of the ER's discussion of cumulative impacts to surface and ground water,[200] as acknowledged by the Joint Petitioners, the Staff's EIS for Turkey Point Units 6 and 7 discusses the effects of climate change, such as sea level rise.[201] Therefore, there is no basis for the Joint Petitioners' claim that the Applicant failed to discuss future environmental conditions in the ER, and a genuine dispute of material fact has not been shown. Accordingly, this argument is inadmissible pursuant to 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

Third, Contention 4-E is inadmissible because, although it asserts that there are three specific omissions from the ER, these assertions are not supported by a showing of facts or expert opinion that the asserted environmental impacts are reasonably foreseeable.[202] Thus, the Joint Petitioners provide no support for the proposition that a projected air temperature increase of 3.4°F to 4.3°F[203] would increase CCS water temperature to any extent, much less to such an extent that there would be a noticeable effect to the CCS's heat exchange capacity.[204] Moreover, the Joint Petitioners' assertions discount the effect of the FDEP consent order, which requires FPL to develop, submit, and implement a plan "for the CCS to achieve a minimum of 70 percent thermal efficiency" and to maintain an average annual CCS salinity at or below 34 PSU.[205] Further, while the Joint Petitioners provide support for their view that higher sea water

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[200] ER at 4-68.

[201] Joint Petition at 42-43 (citing NUREG-2176).

[202] *See Long Island Lighting Co.* (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 836 (1973) (providing that consideration of environmental impacts need not address all theoretical possibilities, but only those that have some reasonable possibility of occurring).

[203] Joint Petition at 35, *citing* CLIMATE SCIENCE SPECIAL REPORT at 197, Table 6.4.

[204] *Id.* at 55-56. The Joint Petitioners cite to the Environmental Report for the proposition that air temperatures can impact the CCS's heat exchange capacity, but the cited portion of the ER does not discuss the effect of air temperature on the CCS. *See* ER at 4-33 – 4-34.

[205] Consent Order at 7-10, ¶ 20.

levels may occur at Turkey Point during the subsequent license renewal period,[206] they provide no support for their assertion that these higher sea water levels will lead to increased flooding at Turkey Point.[207] Likewise, there is no support for their assertions regarding groundwater; in this regard, the Joint Petitioners merely assert, without support, that "it is highly probable that groundwater resources will be inadequate . . . ."[208] All of these arguments are supported only by conclusory statements and, therefore, lack basis and are inadmissible pursuant to 10 C.F.R. §§ 2.309(f)(1)(v) and (vi).

Fourth, the Joint Petitioners' concerns that (a) the heat exchange capacity of the CCS will degrade such that Turkey Point's technical specification for supply water temperature will be exceeded, and (b) Turkey Point will experience flooding, constitute current operating license safety issues and are not within the scope of license renewal.[209] The Joint Petitioners attempt to reframe these arguments as license renewal environmental issues, by arguing that Turkey Point will be unable to achieve its predicted power output, which must be accounted for in the ER's discussions of purpose and need and analysis of alternatives.[210] However, these arguments are unavailing, for the same reason – *i.e.*, no support has been provided for their assertions that Turkey Point's technical specifications for supply water temperature will be exceeded or that Turkey Point will experience flooding to such an extent that a significant reduction in the facility's output will occur.

Finally, in a footnote, the Joint Petitioners cite and rely upon the Declaration of David Lochbaum (Joint Petition, Att. Q), who asserts that Turkey Point will be unable to cope with

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[206] *See* Joint Petition at 50-52, 57.

[207] *Id.* at 56-57.

[208] *Id.* at 58.

[209] *See, e.g., Sequoyah*, LBP-13-8, 78 NRC at 11-14.

[210] Joint Petition at 56-57.

flooding during the SLR period of operation.[211] These assertions are inadmissible, in that the ability of the plant to cope with potential flooding at the plant during the SLR period of operation is a safety issue that challenges the adequacy of the plants' CLB and is beyond the scope of this proceeding. As discussed *supra* at 17-18, safety issues in license renewal proceedings are limited to the adequacy of the applicant's plans for managing the effects of aging of certain structures and components and its time-limited aging analyses.[212] Accordingly, these assertions do not present an admissible issue for litigation in this proceeding.[213]

For the foregoing reasons, Contention 4-E fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(iv)-(vi) and is inadmissible

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[211] The Joint Petitioners quote Mr. Lochbaum's opinion that:

> The license renewal rule, specifically 10 CFR 54.29, states that a renewed license may be issued if the Commission finds that "there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB" [current licensing basis]. Because the flooding evaluations and assessments only went out to 2033, the expiration of the current operating licenses, and there is no evaluation or assessment concluding that reactor operation beyond 2033 will remain bound by those analyses, reasonable assurances needed to issue subsequent license renewals cannot be found.

Joint Petition at 48, n. 207, *quoting* Lochbaum Declaration (Joint Petition, Att. Q) at ¶ 41. *See also* Joint Petition at 56, n.251, *citing* Lochbaum Declaration at ¶ 22.

[212] *See* 10 C.F.R. § 54.29. As set forth in 10 C.F.R. § 54.30(a), licensees are required "to ensure that the intended function of those systems, structures or components will be maintained in accordance with the CLB throughout the term of its current license." The licensee's compliance with its obligation to take measures under its current license, however, is "not within the scope of the license renewal review." 10 C.F.R. § 54.30(b). Further, the Joint Petitioners' argument that the standards for license renewal are not satisfied because the plants' flooding evaluation extends only to the expiration of the current licenses, challenges the adequacy of the plants' current licensing basis for the SLR period of operation, and appears identical to an argument that the Board rejected elsewhere as beyond the scope of a license renewal proceeding. *See Sequoyah*, LBP-13-8, 78 NRC at 13-14.

[213] Additionally, the Joint Petitioners do not provide support for the view that the safety of Turkey Point due to flooding during the SLR period of operation cannot be timely addressed as an operating license issue under 10 C.F.R. Part 50 – which is the proper manner for addressing such issues. *See also* SRM-SECY-16-0144, "Proposed Resolution of Remaining Tier 2 and 3 Recommendations Resulting from the Fukushima Dai-Ichi Accident" (May 3, 2017) (ML17123A453) (approving the Staff's plan for ongoing assessment of natural hazard information).

> Contention 5-E
> The Environmental Report fails to address the adverse effect of operating the Cooling Canal System for an additional 20 years on surface waters, freshwater wetlands, and endangered species present in those wetlands.[214]

In Contention 5-E, the Joint Petitioners state that, contrary to NRC regulations and NEPA, the Applicant's Environmental Report fails to include an analysis of the effects of continued operation of the CCS on "surface waters, freshwater wetlands, and endangered species present in those wetlands."[215] Further, the Joint Petitioners assert that the Environmental Report fails to consider how the adverse impacts of salinization of freshwater wetlands caused by the CCS "will impact threatened or endangered species, and otherwise harm important plant and animal habitats."[216]

The Joint Petitioners assert that the Environmental Report omits or inadequately analyzes the impacts of operation of the CCS—specifically, ammonia contamination and increased salinity and conductivity—on threatened or endangered species in freshwater wetlands, in contravention of NEPA.[217] As a basis for this portion of the contention the Joint Petitioners assert that hypersaline water migrates out of the CCS and creates a hypersaline plume that then migrates into freshwater wetlands inhabited by multiple federally listed endangered species. The Joint Petitioners assert that, contrary to the conclusion in the Environmental Report that "the cooling canals do not have any ecological impact on the surrounding areas," the CCS has created a hypersaline plume that degrades the wetlands adjacent to the CCS, which is an important habitat for threatened and endangered species.[218]

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[214] Joint Petition at 58-59.

[215] *Id*.

[216] *Id*. at 59.

[217] *Id.*

[218] *Id.* at 60-61, 64 (citing ER at 4-69).

They also state that, contrary to the conclusion in the Environmental Report that Turkey Point is not the source of ammonia in nearby surface waters, the CCS in fact discharges pollutants, including ammonia, into nearby surface waters via the Biscayne Aquifer.[219]

The Joint Petitioners assert that the discharge of hypersaline water from the CCS to surrounding freshwater wetlands via the Biscayne Aquifer causes increased salinity and dangerously high conductivity levels in freshwater wetlands.[220] In support of this assertion, the Joint Petitioners cite a July 2018 letter from the Miami-Dade County Division of Environmental Resources Management (DERM) to the Florida Department of Environmental Protection (FDEP). In this letter, DERM describes its concerns to FDEP about the continued westward migration of the hypersaline plume, elevated conductivity and chloride levels in historically fresh surface waters, and increased salinity in the once-freshwater L-31E Canal.[221] The Joint Petitioners also cite a U.S. Environmental Protection Agency website, *Conductivity*,[222] and a United States Geological Survey report, *Flow Velocity, Water Temperature, and Conductivity in Shark River Slough, Everglades National Park, Florida: August 2001-June 2002*,[223] in support of their assertion that conductivity has reached "dangerously high" levels in these freshwater wetlands.[224]

NRC Staff Response to Contention 5-E

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[219] *Id.* at 62 (citing ER at 9-13, 3-93, 3-94).

[220] *Id.* at 61.

[221] *Id.* at 61-62 (citing Letter from Lee N. Heft, Director, Miami-Dade County Division of Environmental Resources Management, to Lee Crandall and Timothy Rach, Florida Department of Environmental Protection (July 18, 2018), at 2-4, 26-27, 51, 59 (Joint Petition, Att. M) ("DERM-FDEP Letter")).

[222] Available at https://archive.epa.gov/water/archive/web/html/vms59.html.

[223] Available at https://pubs.usgs.gov/of/2003/ofr03348/.

[224] Joint Petition at 61-62 nn.268-74.

The NRC Staff does not oppose the admission of one portion of Contention 5-E, concerning the impact of ammonia releases from Turkey Point Units 3 and 4 on endangered and threatened species, but opposes the admission of other portions of the contention, as discussed below.

The Staff recognizes that the impacts of continued operation of the CCS on threatened and endangered species and critical habitat is a Category 2 issue that the Staff must analyze on a site-specific basis in its SEIS.[225] In the Staff's view, the Joint Petitioners raise a genuine dispute with specific portions of the Environmental Report, in asserting that, contrary to the conclusions in the Environmental Report, Turkey Point is a source of ammonia in freshwater wetlands surrounding the site, and that the potential impacts of such ammonia releases during the period of continued operation on threatened and endangered species should be analyzed.[226] Accordingly, the Staff does not oppose the admission of this portion of the contention.

The NRC Staff opposes the admission of all other portions of Contention 5-E, concerning the impacts of continued operation of the CCS on surface water and groundwater quality, and terrestrial resources (in wetlands) in that these assertions constitute an impermissible challenge to the Commission's regulations. Specifically, these portions of the contention challenge the Commission's determination in 10 C.F.R. Part 51, Appendix B, Table B-1, that the impacts of license renewal to altered salinity gradients in surface waters, groundwater quality degradation at plants with cooling ponds in salt marshes (like Turkey

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[225] 10 C.F.R. § 51.71(d); § 51.95(c)(3); Table B-1 of Appendix B to 10 C.F.R. Part 51, "Environmental Effect of Renewing the Operating License of a Nuclear Power Plant" (identifying "[t]hreatened, endangered, and protected species of essential fish habitat" as a Category 2 issue). The NRC is also obliged to initiate consultation under Section 7 of the Endangered Species Act if subsequent license renewal may affect a threatened species or its critical habitat. *See* 16 U.S.C. § 1536(a)(2).

[226] *Id.* at 62.

Point),[227] and cooling system impacts on terrestrial resources are Category 1 issues that need not be addressed in an applicant's environmental report.[228] Inasmuch as the Commission has determined by rule that these are Category 1 issues, the Commission's determination may not be challenged in the absence of a petition for waiver filed in accordance with 10 C.F.R. § 2.335;[229] significantly, no such petition for waiver has been filed or granted by the Commission here. Accordingly, these assertions should be rejected.[230]

Further, even if the Joint Petitioners had characterized the impacts of subsequent license renewal on surface water, groundwater, and terrestrial resources as "new and significant information," they would still be required by 10 C.F.R. § 2.335 to obtain a waiver from the Commission's rule that these impacts are Category 1 issues.[231] Thus, the Commission has held that "[t]he new and significant information requirement in 10 C.F.R. § 51.53(c)(3)(iv) [does] not override, for the purposes of litigating the issues in an adjudicatory proceeding, the exclusion of Category 1 issues in 10 C.F.R. § 51.53(c)(3)(i) from site-specific review. … [A]

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[227] *See* Generic Environmental Impact Statement for License Renewal of Nuclear Plants ("GEIS"), NUREG-1437, Rev. 1, Vol. 1, at 4-50 (June 2013) (ML13106A241).

[228] *See* 10 C.F.R. Part 51, Appendix B, Table B-1 (Jan. 1, 2018), at 61-63.

[229] The "sole ground" for a petition for waiver is that "special circumstances with respect to the subject matter of the particular proceeding are such that the application of the rule or regulation (or a provision of it) would not serve the purposes for which the rule or regulation was adopted." 10 C.F.R. § 2.335(b). The petition must be accompanied by an affidavit that "identifies the specific aspect or aspects of the subject matter of the proceeding as to which the application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted," and "must state with particularity the special circumstances alleged to justify the waiver or exception requested." *Id.* Following the filing of such a petition and affidavit, "[a]ny other participant may file a response by counter-affidavit or otherwise." *Id.*

[230] *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 343 (1999).

[231] Thus, "approval of a waiver could allow a contention on a Category 1 issue to proceed where special circumstances exist." *Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-07-3, 65 NRC 13, 20 (2007) (Vermont Yankee/Pilgrim).

waiver [is] required to litigate any new and significant information relating to a Category 1 issue."[232] Here, the Joint Petitioners did not seek a waiver of the Commission's Category 1 determinations. Accordingly, the portions of Contention 5-E that concern the impacts of continued operation of the CCS on the issues of altered salinity gradients in surface water, groundwater quality degradation, and cooling system impacts on terrestrial resources are inadmissible.[233]

The NRC Staff also opposes the admission of portions of the contention concerning the impacts of the hypersaline plume on freshwater wetlands and on threatened and endangered species in these wetlands. These portions of the contention assume that FDEP's 2016 Consent Order does not establish adequate mitigation measures to address the hypersaline plume, that the Applicant will not comply with the 2016 Consent Order,[234] and/or that the FDEP will fail to enforce its own regulations and the 2016 Consent Order. The NRC presumes that licensees will comply with their licenses.[235] Additionally, a presumption of administrative regularity applies equally to State regulatory officials; it is therefore reasonable for the NRC to expect that the FDEP will adequately enforce its own regulations and its 2016 Consent Order.[236]

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[232] *Exelon Generation Co., LLC* (Limerick Generating Station, Units 1 and 2), CLI-12-19, 76 NRC 377, 384 (2012) (citing *Vermont Yankee/Pilgrim*, 65 NRC at 21).

[233] The Commission's generic environmental impact determinations in Table B-1, including the Category 1 determinations, are "subject to…possible significant new information." Appendix B to Part 51. The NRC Staff will analyze the environmental impacts of license renewal on Category 1 issues in site-specific SEISs if new and significant information is identified. GEIS at 1-7.

[234] The 2016 Consent Order requires the Applicant to submit a plan that will "halt the westward migration of the hypersaline plume within 3 years of commencement of the remediation project and retract the hypersaline plume to the L-31E canal within 10 years." Further, the Applicant must report on the effectiveness of the plan, and if it is ineffective, provide an alternate plan for FDEP approval and implement that plan. *Florida Department of Environmental Protection v. FPL*, OGC File No. 16-0241 (Consent Order) (Jun. 20, 2016) (ML16216A216) ("2016 Consent Order"), at ¶ 20.

[235] *See Pacific Gas and Electric Co.* (Diablo Canyon Power Plant, Units 1 and 2), CLI-03-2, 57 NRC 19, 29 (2003).

[236] *Florida Power & Light Co.* (Turkey Point Units 6 and 7), LBP-17-5, 86 NRC 1, 29 (2017).

Finally, the Staff opposes the admission of the Joint Petitioners' general assertion that operation of the CCS causes unspecified "other pollutants" to migrate into nearby surface waters and, in turn, adversely impact threatened and endangered species' habitats. The Joint Petitioners did not identify any "pollutants" other than ammonia or provide any specific facts or expert opinion to support the claim that the CCS causes "other pollutants" to migrate into nearby surface waters. In failing to provide specific claims with supporting facts, the Joint Petitioners failed to "plead specific grievances, not simply…provide general 'notice pleadings.'"[237] Accordingly, this portion of Contention 5-E does not satisfy the requirement of 10 C.F.R. § 2.309(f)(1)(v) to set forth alleged facts or expert opinions that support the contention, and is inadmissible.

2. Southern Alliance for Clean Energy

SACE presents two environmental contentions for litigation in this proceeding. The Staff does not oppose the admission of portions of SACE Contentions 1 and 2, to the extent set forth below.

> SACE Contention 1
> The Environmental Report contains an inadequate discussion of the environmental impacts of the Cooling Canal System (CCS).[238]

In Contention 1, SACE states that the Applicant's Environmental Report underestimates or ignores the environmental impacts of continued operation of the CCS.[239] Specifically, SACE asserts that the Environmental Report fails to adequately analyze the "impacts of the CCS on the chemistry of groundwater, surface water and its aquatic life, and the CCS'[s] own

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[237] *Entergy Nuclear Generation Co. and Entergy Nuclear Operations Co.* (Pilgrim Nuclear Power Station), CLI-10-15, 71 NRC 479, 482 (2010) (quoting *Duke Energy Corp.* (McGuire Nuclear Stations, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 428 (2003)).

[238] SACE Petition at 6.

[239] *Id.*

ecosystem." SACE asserts that these adverse impacts include "the migration of a hypersaline plume that has developed in the Biscayne Aquifer beneath the CCS," which it says "now extends for miles in all directions."[240] SACE states that this hypersaline plume contains several contaminants – specifically, phosphorous, ammonia, TKN, total nitrogen, tritium, and chlorophyll *a* – that adversely impact groundwater (Biscayne Aquifer, including its G-II potable groundwater), surface waters (Biscayne Bay, Card Sound, the L-31E Canal, and indirectly, the Everglades), and the CCS itself.[241] The adverse impact of subsequent license renewal on the CCS, according to SACE, is degradation of the seagrass, which provides critical habitat for the American crocodile, a federally listed threatened species.[242] In addition, SACE contends that the Environmental Report overestimates the effectiveness of the Applicant's proposed mitigation measures to reduce the salinity in the CCS and reduce the hypersaline plume, and that the Environmental Report fails to acknowledge the adverse impacts of these mitigation measures.[243]

Finally, SACE asserts that FPL ignores or underestimates the cumulative impacts of past and future operations of the CCS, and that a cumulative impacts analysis must be performed to evaluate how CCS operation and FPL's mitigation strategies would interact with other environmental programs in the region, such as the Central Everglades Restoration Program ("CERP").[244] In conclusion, SACE asserts that as the result of significant defects in the ER, FPL's conclusion that the environmental impacts of continuing to operate the CCS during

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[240] *Id.*

[241] *Id.*

[242] *Id.* at 6-7, 20.

[243] *Id.* at 7.

[244] *Id.* at 7-8.

the SLR term will be "small" must be rejected as arbitrary, unsupported, and inadequate to satisfy NEPA.[245]

NRC Staff Response to SACE Contention 1

The NRC Staff does not oppose the admission of one portion of Contention 1, concerning impacts to the American crocodile, but opposes the admission of other portions of the contention.

More specifically, the Staff does not oppose the admission of those portions of the contention in which SACE asserts that the Environmental Report contains an inadequate analysis of the impacts of continued CCS operation on the critical habitat of the American crocodile. SACE specifically states an issue of fact—whether and how operation of the CCS adversely affects the American crocodile's critical habitat and provides a brief description of its basis for this portion of the contention—that the American crocodile population has declined in recent years as critical seagrass habitat has died off in the CCS, in satisfaction of 10 C.F.R. § 2.309(f)(1)(i)-(ii).

In its ER, the Applicant provided a lengthy discussion of the American crocodile, including initial observations of the crocodile and its nests at the site; FPL's development of a crocodile management plan (providing for creation and enhancement of habitat and long term population monitoring); the designation of critical habitat at the site; and administrative procedures establishing crocodile surveillances.[246] In addition, the Applicant described the terms and conditions of its crocodile monitoring and protection plan (based on a 2006 Biological Opinion by the U.S. Fish and Wildlife Service) as well as its Threatened and Endangered

[245] *Id*.

[246] ER at 3-164, 3-168, 3-174, 3-194 – 3-195.

Species Evaluation and Management Plan.[247] Further, the Applicant provided a description of its crocodile monitoring efforts and results for the period of 2000-2016.[248] The Applicant noted that it is required to monitor crocodiles under its crocodile management plan, and concluded that "[w]hile the number of successful nests located at the site has decreased in recent years, the American crocodile population continues to remain in a much stronger position than before the Turkey Point CCS was established."[249]

In support of Contention 1, SACE alleges that while the Applicant acknowledges that the number of American crocodile nests and tagged hatchlings have declined as the seagrass habitat has died off in the CCS, the Applicant fails to acknowledge that operation of the CCS has caused these losses. SACE challenges the Environmental Report's conclusion that "[t]he American crocodile population continues to remain in a much stronger position than before the Turkey Point CCS was established."[250] SACE does not, however, take issue with the ER's description of the results of its crocodile monitoring program, the adequacy of FPL's crocodile monitoring and protection plan, or the provisions in place under the Florida DEP's consent order for protection of the crocodile.

The impacts of subsequent license renewal on threatened and endangered species is an issue that is within the scope of this proceeding. Here, SACE has provided the expert opinion of Dr. Fourqurean that operation of the CCS will continue to degrade the seagrass habitat, and that this impact is not adequately accounted for in the ER. The Staff believes SACE has raised

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[247] *Id.* at 3-175 – 3-176.

[248] *Id.* at 3-195 – 3-196 and 3-253, Table 3.7-13 ("American Crocodile Monitoring Results at the Turkey Point Site, 2000-2016").

[249] *Id.* at 4-39.

[250] SACE Petition at 19, citing ER at 3-195. SACE also notes that the Applicant's January 2018 letter to the U.S. Fish and Wildlife Service, which is attached to the Environmental Report, states that the subsequent license renewal of the plant will "not change the effects" of the plant on the American crocodile. SACE Petition at 20 (citing Letter from Matthew J. Raffenberg, FPL, to Roxanne Hinzman, U.S. Fish and Wildlife Service (Jan. 30, 2018) (Attachment B to ER)).

a genuine dispute—whether operation of the CCS during the subsequent license renewal term will adversely affect the American crocodile's critical habitat. Accordingly, the Staff believes that this portion of Contention 1 satisfies 10 C.F.R. § 2.309(f)(1)(i)-(vi).

In all other respects, the Staff opposes the admission of SACE Contention 1. First, while SACE asserts that the Environmental Report fails to analyze how the CCS's demands for lower-saline water may result in surface water use conflicts with the demands of the CERP, and states that the South Florida Water Management District has allowed the Applicant "to remove water from the L-31E Canal on an emergency basis to reduce salinity levels in the CCS," it provides no basis for its claim that the Applicant plans to, among other mitigation measures, use water from the L-31E Canal to lower the CCS salinity levels in the future.[251] Further, SACE fails to recognize that the Applicant states in its ER that it "has no plans to use surface water sources for maintenance or operation during the license period," and instead plans to use groundwater from Upper Floridan Aquifer wells to reduce salinity in the CCS.[252] Therefore, SACE has failed to raise a genuine dispute with the Applicant in this portion of Contention 1.

Further, SACE's assertions regarding a potential conflict with the water resource demands of the CERP are conclusory, highly speculative, and lack support. This portion of the contention consists of assertions that alleged use of the L-31E Canal for freshening of the CCS "may conflict with" or "potential[ly] conflict[s] with" those of the CERP.[253] SACE cites no support for these speculative assertions and does not explain the alleged conflicting surface water use requirements of the CCS and CERP. A contention for which the petitioner "'has offered no

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[251] *Id.* at 15-16.

[252] Environmental Report at 3-95, 3-108, 3-195.

[253] SACE Petition at 14-15.

tangible information, no experts, no substantive affidavits,' but instead only 'bare assertions and speculation'" is inadmissible.[254] Therefore, this portion of Contention 1 is inadmissible.

In addition, the Staff opposes the admission of those portions of Contention 1 that concern the environmental impacts of subsequent license renewal on the Category 1 issues of (1) altered salinity gradients in surface waters, (2) groundwater quality degradation, (3) exposure of aquatic organisms to radionuclides, (4) the effects of non-radiological contaminants on aquatic organisms, (5) cooling system impacts on terrestrial resources, and (6) radiation (tritium) exposures to the public.[255] Indeed, the bulk of Contention 1 concerns the alleged adverse environmental impacts of operation of the CCS on altered salinity gradients in surface waters—Biscayne Bay, Card Sound, and freshwater wetlands surrounding the CCS—and the effects of non-radiological contaminants—phosphorous, ammonia, TKN, total nitrogen, and chlorophyll *a*—on surface waters and aquatic resources.[256]

Additionally, SACE asserts that the CCS releases tritium to the Biscayne Aquifer and from there into surrounding surface waters.[257] It further contends that subsequent license renewal of Turkey Point will result in adverse impacts to groundwater, and that the Applicant has overestimated the beneficial effects of current and proposed mitigation measures.[258] However, the issues of altered salinity gradients in surface waters, groundwater quality

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[254] *Fansteel, Inc.* (Muskogee, Oklahoma, Site), CLI-03-13, 58 NRC 195, 203 (2013) (quoting *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-06, 51 NRC 193, 208 (2000)).

[255] SACE does not claim that tritium will be released in amounts that exceed permissible levels. The impacts of tritium releases from continued operation were evaluated in the GEIS and determined to be a Category 1 issue with "small" impacts, with respect to exposure of aquatic organisms to radionuclides and radiation exposures to the public. *See* 10 C.F.R. Part 51, Appendix B, Table B-1 (Jan. 1, 2018), at 64, 65.

[256] *See* SACE Petition at 6-7, 17-19, 20-24.

[257] *Id.* at 18 (citing Expert Report of Kirk Martin (May 14, 2018) (SACE Petition, Att. 5), at 4-5.

[258] *Id.* at 7, 20-24.

degradation at plants with cooling ponds in salt marshes (including Turkey Point),[259] exposure of aquatic organisms to radionuclides, the effects of non-radiological contaminants on aquatic organisms, cooling system impacts on terrestrial resources, and radiation exposure to the public are all identified as Category 1 issues in Table B-1 of 10 C.F.R. Part 51, Appendix B.[260] The inclusion of these issues in this contention constitutes an impermissible challenge to the Commission's generic environmental impact determinations on Category 1 issues, as codified in 10 C.F.R. Part 51, Appendix B, Table B-1.[261] Those generic determinations are not subject to challenge in an adjudicatory proceeding absent a waiver from the Commission under 10 C.F.R. § 2.335. [262] Moreover, as stated in response to Joint Petitioners' Contention 5-E, even if SACE had presented these claims as new and significant information, it would still be required to seek a waiver from the Commission under 10 C.F.R. § 2.335 before it could be permitted to proceed with litigation of these Category 1 issues.[263] Here, SACE did not seek such a waiver. Therefore, the portions of SACE Contention 1 that concern the impacts of CCS operation on Category 1 issues are inadmissible.

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[259] GEIS at 4-50.

[260] *See* 10 C.F.R. Part 51, Table B-1 (Jan. 1, 2018), at 61-62 and 64.

[261] *See* discussion *supra,* at 55-56. SACE asserts that 10 C.F.R. § 51.53(c)(2), not § 51.53(c)(3) applies to this proceeding, because paragraph (c)(3) provides Environmental Report requirements for applicants "seeking an initial renewed license." As explained above, the Commission's regulations and the Commission's direction are clear that its regulations on license renewal also apply to subsequent license renewal. *See* discussion *supra,* at 18-23.

[262] *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 343 (1999).

[263] *See* discussion *supra,* at 56-57.

Further, the Staff opposes admission of Contention 1 insofar as it concerns groundwater contamination resulting from the release of tritium. [264] While the Commission has identified the issue of radionuclides released to groundwater as a Category 2 issue,[265] SACE does not cite or contest any portion of Section 4.5.5 of the Environmental Report, in which the Applicant analyzed the environmental impacts of radionuclides released to groundwater, including tritium, and does not identify any information that the Applicant failed to consider. Therefore, to the extent that SACE alleges that the Applicant failed to analyze the environmental impacts of tritium on groundwater in its environmental report, it has failed to satisfy the 10 C.F.R. § 2.309(f)(1)(vi) requirement that it raise a genuine dispute with the Environmental Report.

Further, the Staff opposes the portion of Contention 1 in which SACE claims that the Applicant overstates the effectiveness and ignores the adverse impacts of its mitigation measures. SACE asserts that the Applicant's recovery well mitigation measures will fail to halt migration of the hypersaline plume within three years and retract the plume to the L-31E within 10 years; that the deep excavation backfill mitigation measures are unlikely to reduce groundwater flow into Biscayne Bay; and that adding water to the CCS to "freshen" it will drive the hypersaline plume further into the Biscayne Aquifer and from there into the G-II groundwater and Biscayne Bay.[266] These assertions concerning the Applicant's mitigation measures effectively assume that the FDEP has not established adequate mitigation measures, that the

[264] SACE asserts that "[c]ontaminants in the plume in the groundwater, generated by the Turkey Point plant, include…radioactive tritium…. The areas directly affected by these pollutants include the underlying Biscayne Aquifer and its protected G-II groundwater…." SACE Petition at 6. Additionally, SACE notes that "groundwater data for tritium from beneath Biscayne Bay indicate that movement of the contaminant plume originating from the CCS is radial and likely extends as far east as the plume migration to the west." *Id.* at 18 (citing Martin Report at 4).

[265] 10 C.F.R. Part 51, Appendix B, Table B-1 (Jan. 1, 2018), at 62.

[266] SACE Petition at 21-24.

Applicant will not comply with the FDEP's 2016 Consent Order,[267] or that the FDEP will fail to enforce its own regulations and the 2016 Consent Order. As stated in response to Joint Petitioners' Contention 5-E, the NRC presumes that licensees will comply with their licenses.[268] Additionally, a presumption of administrative regularity applies equally to State regulatory officials; it is therefore reasonable for the NRC to expect that the FDEP will adequately enforce its own regulations and its 2016 Consent Order.[269] A hearing before this Board in a proceeding concerning the Applicant's SLRA, however, is not the proper forum for SACE's challenges to the adequacy of the FDEP Consent Order, or the FDEP's ability and willingness to implement and enforce its regulations and orders.[270]

In addition, the Staff opposes the admission of SACE's assertion that the Applicant failed to adequately analyze the cumulative impacts of CCS operation and past, present, and future mitigation measures. In this regard, SACE asserts that the Applicant failed to discuss the effects of historical mitigation measures, such as the L-31E Canal, the CCS itself, and the interceptor ditch along with operation of the CCS, that have caused (or failed to prevent or mitigate) hypersalinity in the CCS and migration of the hypersaline plume in the Biscayne Aquifer.[271] While the Staff recognizes that the cumulative impacts of subsequent license

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[267] The 2016 Consent Order imposes upon the Applicant certain mitigation measures, including recovery wells and completion of the Barge Basin and Turtle Point Canal deep excavation backfill projects, and certain milestones that the Applicant must reach along with evaluation and reporting requirements to determine whether these mitigation measures are effective. *Florida Department of Environmental Protection v. FPL*, OGC File No. 16-0241 (Consent Order) (Jun. 20, 2016) (ML16216A216) ("2016 Consent Order"), at ¶¶ 19-21.

[268] *See* discussion *supra*, at 57.

[269] *Florida Power & Light Co.* (Turkey Point Units 6 and 7), LBP-17-5, 86 NRC 1, 29 (2017).

[270] SACE may pursue litigation on these matters in other forums and, indeed, it has done so. See SACE Petition at 2 (citing Southern Alliance for Clean Energy, Tropical Audubon Society, Inc., & Friends of the Everglades, Inc. v. Fl. Power & Light Co., No. 1:16-cv-23017-DPG (filed Oct. 11, 2016)).

[271] *See id.* at 14-17, 25-26.

renewal must be evaluated on a site-specific basis, the Applicant addressed the impacts of past mitigation measures, the operation of the CCS, and its compliance history in Section 3.6 of the ER, and SACE does not challenge the sufficiency of that discussion. Accordingly, the Staff opposes the admission of SACE's assertions regarding the cumulative impacts of past mitigation measures.

In addition, the Staff opposes the admission of the portions of Contention 1 in which SACE challenges the adequacy of the cumulative impacts analysis in the Environmental Report, based on its belief that the Applicant is currently not in compliance with its permits, that the Applicant will fail to comply with its permits in the future, and that FDEP will effectively fail to enforce its regulations and the 2016 Consent Order.[272] SACE does not provide any tangible basis for its assertion that the Applicant is not currently in compliance with its permits.[273] SACE's only support for this assertion is a statement that "groundwater modeling shows that westward migration of the hypersaline groundwater plume is a significant contributor to water quality violations in the potable G-II groundwater to the west of the CCS." Neither SACE nor Mr. Swakon, whose Expert Report SACE cites in support of this assertion, specify which "permits" these are or how the Applicant is currently not in compliance with them. Neither mere speculation nor bare or conclusory assertions, even by an expert, suffices to allow the admission of a proposed contention.[274]

Finally, the Staff opposes the admission of the cumulative impacts portion of this contention, with respect to its assertion that the Environmental Report fails to address the

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[272] *See id.* at 24-25.

[273] *Id.* at 18 (citing Expert Report of Edward A. Swakon, P.E. (May 14, 2018) (SACE Petition, Att. 7), at 1.

[274] *See USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006); *Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003).

"interaction of environmental factors such as salinity, turbidity, and algal concentrations with operation of the CCS."[275] While these factors may (or may not) be appropriate for consideration in an evaluation of the plant's impact on the existing environment, SACE has provided no information suggesting that these factors must be considered in a cumulative effects analysis. In this regard, an applicant's ER must include "information about other past, present, and reasonably foreseeable future *actions* occurring in the vicinity of the nuclear plant that may result in a cumulative effect,"[276] the "environmental factors" that SACE identifies, however, are not "actions" occurring in the vicinity of Turkey Point, and need not be considered in a "cumulative effects" analysis.

Accordingly, the Staff does not oppose the admission of SACE's assertions concerning impacts to the American crocodile, but opposes the admission of all other portions of SACE Contention 1 as set forth above.

> SACE Contention 2
> The Environmental Report affords inadequate consideration of the alternative of mechanical draft cooling towers.[277]

In explaining this contention, SACE asserts that the Applicant has failed to consider a "reasonable alternative" of constructing and using mechanical draft cooling towers for Units 3 and 4, in violation of NEPA and 10 C.F.R. § 51.53(c)(2).[278] SACE further asserts that the cooling tower alternative is "feasible and cost-effective," and "would likely eliminate the adverse impacts of continuing to operate the CCS," as set forth in SACE Contention 1.[279] In support of

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[275] SACE Petition at 26.

[276] 10 C.F.R. § 51.53(c)(3)(ii)(O) (emphasis added).

[277] SACE Petition at 29.

[278] Id.

[279] Id.

this contention, SACE proffers the Expert Report of Bill Powers (SACE Petition, Att. 10), who describes, in part, the expected environmental effects of using reclaimed water from the Miami-Dade Water and Sewer Department ("MDWSD") and mechanical draft cooling towers with zero liquid discharge ("ZLD") technology, in lieu of the existing CCS.[280]

NRC Staff Response to SACE Contention 2

The Staff does not oppose the admission of SACE Contention 2, insofar as it asserts that the Applicant's Environmental Report omits consideration of mechanical draft cooling towers in connection with license renewal of Turkey Point Units 3 and 4, as a reasonable alternative to use of the plants' existing cooling canal system. Like the Joint Petitioners, SACE points out that the Applicant's ER omits consideration of a cooling tower alternative.[281] Further, SACE points out that the Applicant's ER considers alternative energy sources that would use cooling towers; that an agreement is in place for the use of MDWSD for other purposes at the Turkey Point site; that mechanical draft cooling towers would be cost-effective and would avoid the adverse impacts resulting from use of the CCS; and that other environmental studies for licensing or relicensing of power plants at Turkey Point have considered the use of mechanical draft cooling towers – all of which is asserted to demonstrate the reasonableness of this alternative.

As stated in the Staff's response to the Joint Petitioners' Contention 1-E,[282] NEPA requires the NRC to consider reasonable alternatives to the proposed Federal action, and the Commission's regulations in 10 C.F.R. Part 51 require the Staff's SEIS for license renewal to consider "the environmental impacts of alternatives to the proposed action; and alternatives

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[280] *Id*. at 29.

[281] *Id*. at 17, *citing* ER at 7-1.

[282] *See* discussion *supra*, at 29-31.

available for reducing or avoiding adverse environmental effects."[283] Accordingly, the NRC Staff does not oppose the admission of SACE Contention 2, as a contention of omission.

While the Staff does not oppose the admission of SACE Contention 2 as a contention of omission, the Staff would oppose the admission and litigation of the contention's assertions regarding the environmental impacts resulting from operation of the CCS or cooling towers.[284] In this regard, SACE does not point to any portion of the Applicant's ER which it believes contains an inadequate description of the impacts of CCS operation; rather, it cites the ER's discussion of impacts (described in SACE Contention 1) in *support* of this contention.[285] Nor does SACE's expert, Dr. Bill Powers, point to any deficiencies in the Applicant's discussion of the environmental impacts of CCS operation.[286] Accordingly, it does not establish a genuine dispute of material fact with respect to the environmental impacts of CCS operation, contrary to the requirements of 10 C.F.R. 2.309(f)(1)(vi).

Moreover, to the extent that SACE Contention 1 is admitted for litigation, the environmental impacts admitted as part of that contention would be litigated as part of that contention, and no reason exists to warrant a duplicative re-litigation of those issues in this contention regarding a cooling tower alternative. Finally, litigation of the precise impacts of CCS and cooling tower operation is unnecessary for resolution of the contention's central assertion that a "reasonable and feasible alternative" was omitted from the Applicant's ER. Accordingly, the impacts of CCS and cooling tower operation should be excluded from this contention.

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[283] *See* 10 C.F.R. § 51.71(d); 10 C.F.R § 51.95(c)(1) and (2).

[284] SACE Petition at 30-31.

[285] *Id.* at 29.

[286] *See* Expert Report of Bill Powers, P.E., Powers Engineering" (May 14, 2018) (SACE Petition, Att. 10), *passim*.

CONCLUSION

For the reasons set forth above, the NRC Staff respectfully submits that the Joint Petitioners and SACE have each demonstrated their standing to intervene in this proceeding and have proffered at least one admissible contention. Certain of their contentions or portions thereof, however, are inadmissible and should be excluded from litigation. Accordingly, the Staff does not oppose these petitions to intervene, but opposes the admission of certain of the petitioners' contentions or portions thereof, to the extent and for the reasons set forth above.

Respectfully submitted,

/Signed (electronically) by/

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Dated at Rockville, Maryland
this 27th day of August 2018

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
FLORIDA POWER & LIGHT COMPANY	)	Docket Nos. 50-250-SLR
	)	50-251-SLR
(Turkey Point Nuclear Generating,	)	
Unit Nos. 3 and 4	)	

CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R § 2.305 (as revised), I hereby certify that copies of the foregoing "NRC STAFF'S CORRECTED RESPONSE TO PETITIONS TO INTERVENE AND REQUESTS FOR HEARING FILED BY (1) FRIENDS OF THE EARTH, NATURAL RESOURCES DEFENSE COUNCIL AND MIAMI WATERKEEPER, AND (2) SOUTHERN ALLIANCE FOR CLEAN ENERGY," dated August 27, 2018, have been served upon the Electronic Information Exchange (the NRC's E-Filing System), in the above-captioned proceeding, this 27th day of August, 2018.

Copies of the foregoing have also been sent to (1) Mr. Albert Gomez (3566 Vista Court, Miami, FL 33133), by E-mail to albert@icassemblies.com; and (2) Richard E. Ayres, Esq. (2923 Foxhall Road, N.W., Washington D.C. 20016), by E-mail to ayresr@ayreslawgroup.com, this 27th day of August, 2018.

/Signed (electronically) by/

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