UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket Nos. 50-250-SLR and 50-251-SLR
FLORIDA POWER & LIGHT COMPANY	)	ASLBP No. 18-957-01-SLR-BD01
(Turkey Point Nuclear Generating Units 3 and 4)	)	August 27, 2018

APPLICANT'S ANSWER OPPOSING SOUTHERN ALLIANCE FOR CLEAN ENERGY'S REQUEST FOR HEARING AND PETITION TO INTERVENE

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I. INTRODUCTION

In accordance with 10 C.F.R. § 2.309(i), Florida Power & Light Company ("FPL") hereby timely files its Answer opposing the "Request for Hearing and Petition to Intervene" ("Petition") filed by the Southern Alliance for Clean Energy ("SACE" or "Petitioner") on August 1, 2018, regarding its subsequent license renewal ("SLR") application ("SLRA") for Turkey Point Nuclear Generating Units 3 & 4 ("Turkey Point").[1] SACE proffers two proposed contentions challenging FPL's compliance with the National Environmental Policy Act ("NEPA") and the U.S. Nuclear Regulatory Commission ("NRC") environmental regulations in 10 C.F.R. Part 51. These proposed contentions seek to challenge the environmental report ("ER") submitted by FPL to the NRC as Appendix E to the Turkey Point SLRA.

Contention 1 claims that the ER: (1) incorrectly minimizes the significance of the Turkey Point cooling canal system's ("CCS") environmental impacts on certain groundwater and surface water bodies (principally the Biscayne Aquifer and Biscayne Bay and the habitat of the threatened

[1] Southern Alliance for Clean Energy's Request for Hearing and Petition to Intervene (Aug. 1, 2018) ("Petition") (ML18213A529). The Petition and all of its supporting attachments are available as a package under ADAMS Accession No. ML18213A528.

American crocodile); (2) overstates the effectiveness of existing and planned mitigation measures to reduce and remove the "hypersaline plume" in the Biscayne Aquifer and ignores the negative impacts of those mitigation measures; and (3) does not adequately address the cumulative impacts of operating Units 3 and 4 and the CCS during the 20-year SLR period.[2] Contention 2 asserts that the ER improperly excludes consideration of the "reasonable" and "superior" mitigation alternative of installing mechanical draft cooling towers in place of the CCS at Turkey Point.[3]

To be granted a hearing in this SLR proceeding, Petitioner must demonstrate standing to intervene and submit at least one admissible contention. FPL does not challenge SACE's standing.[4] Both of SACE's proposed contentions, however, are inadmissible.

As described further below, the proposed contentions present impermissible challenges to NRC regulations and fail to satisfy the contention admissibility requirements in 10 C.F.R. § 2.309(f)(1). Specifically, Contention 1 is inadmissible because it largely contests certain "Category 1" environmental issues discussed in the NRC's 2013 Generic Environmental Impact Statement ("GEIS") for license renewal and codified in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1.[5] Category 1 findings are not subject to challenge in this adjudicatory proceeding absent a Commission waiver, which SACE conspicuously has not sought here. To the extent it seeks to litigate any "Category 2" issues, Contention 1 also lacks sufficient support and fails to

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2 *See generally* Petition at 17-29.

3 *See generally id.* at 29-32.

4 SACE claims representational standing based on the proximity of certain members to Turkey Point, and includes declarations from those members authorizing Petitioner to represent them in this proceeding. *See* Petition at 2-3. SACE has neither claimed nor shown that it has organizational standing to intervene in this proceeding.

5 "Generic Environmental Impact Statement for License Renewal of Nuclear Plants—Main Report" (Final Report), NUREG-1437, Rev. 1, vols. 1, 2, and 3 (June 2013) (ML13106A241, ML13106A242, and ML13106A244) ("GEIS").

raise any genuine, litigable dispute with the ER. Indeed, as discussed herein, SACE ignores relevant and dispositive discussion contained in that document.

Contention 2 is inadmissible for similar reasons. Namely, it improperly challenges, without a request for a waiver, the adequacy of the NRC's generically-applicable consideration of mitigation measures for several Category 1 environmental issues. Moreover, Contention 2 seeks analysis of a mitigation alternative that is not required under NEPA's "rule of reason" and related Commission precedent, and runs counter to the informed technical judgment and requirements of the relevant State permitting agency.

Through the proposed contentions, SACE also seeks an alternate forum in which to litigate issues that it *already* is litigating in a Clean Water Act ("CWA") citizen suit filed by SACE and two other groups in 2016 in federal district court.[6] The issues raised by SACE in proposed Contentions 1 and 2 closely mirror those raised in its federal court action against FPL.[7] As discussed further below, given the NRC's lack of jurisdiction over thermal discharge and water quality permitting matters, SACE is asking the Licensing Board ("Board") to disregard well-established principles of comity between the NRC and other agencies, and between the NRC and the federal courts, as well as controlling Commission precedent.

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[6] *See Southern Alliance for Clean Energy, Tropical Audubon Society, Inc., and Friends of the Everglades, Inc. v. Florida Power & Light Co*., No. 1:16-cv-23017-DPG (filed Oct. 11, 2016). The suit, filed pursuant to CWA Section 505(a)(1), 33 U.S.C. § 1365(a)(1), alleges that FPL has violated its State-issued National Pollutant Elimination Discharge System ("NPDES") permit as well as certain CWA provisions via unauthorized discharges of pollutants from the CCS into Biscayne Bay. It further alleges that FPL has violated its NPDES permit by discharges of hypersaline water contaminated with radioactive tritium and other pollutants into groundwater. It is FPL's position that the federal CWA applies only to discharges to "navigable waters" of the United States, and thus does not apply to discharges to groundwater (which, in this case, are regulated by the State of Florida under state law). As explained further below, FPL's single State-issued permit for the Turkey Point cooling canal system was jointly issued pursuant to the federal NPDES program (as delegated to the State of Florida) and the Florida industrial wastewater permitting program, and thus addresses both state law and federal law requirements.

[7] Notably, SACE relies here on the same expert reports that it filed in the pending federal district court case. *See* Petition at 2 (noting SACE's reliance on "technical reports prepared by experts whom SACE has retained for a federal district court [CWA] lawsuit").

Accordingly, the Board should deny the Petition in its entirety, as 10 C.F.R. § 2.309(a) requires Petitioner to submit at least one admissible contention—a requirement that is unmet here.

II. PROCEDURAL HISTORY

FPL filed its SLRA with the NRC on January 30, 2018, to renew the Turkey Point operating licenses for an additional 20-year period.[8] As part of the SLRA and as required by 10 C.F.R. Part 51, FPL also submitted an ER that considers the potential environmental impacts of the requested extension.[9] On May 2, 2018, the NRC published a notice in the *Federal Register* docketing the Turkey Point SLRA and providing an opportunity for interested persons to request a hearing on the SLRA by July 2, 2018.[10] The Acting Secretary of the Commission subsequently extended the hearing request deadline to August 1, 2018, for all interested persons.[11] On August 1, 2018, SACE filed its Petition seeking to intervene in this SLR proceeding, requesting a hearing, and proposing two contentions.[12]

III. LEGAL STANDARDS FOR CONTENTION ADMISSIBILITY

Under 10 C.F.R. § 2.309(f)(1), a hearing request "must set forth with particularity the contentions sought to be raised." In addition, Section 2.309(f)(1) states that each contention must:

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

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

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8 *See* Letter from M. Nazar, FPL, to NRC Document Control Desk, Turkey Point Units 3 and 4 Subsequent License Renewal Application (Jan. 30, 2018) (ML18037A824).

9 FPL submitted a supplement to the Environmental Report in April 2018 that augments discussion contained in Section 4.5.3.4 concerning the effects of groundwater withdrawals for CCS salinity reduction (*i.e.*, freshening) and hypersaline plume capture purposes. *See* L-2018-086, Letter from W. Maher, FPL, to NRC Document Control Desk, Appendix E Environmental Report Supplemental Information (Apr. 10, 2018) (ML18102A521) (collectively, the January 2018 Environmental Report and the April 2018 supplement constitute the "ER").

10 *See* Florida Power & Light Company; Turkey Point Nuclear Generating, Unit Nos. 3 and 4; License Renewal Application; Opportunity to Request a Hearing and to Petition for Leave to Intervene, 83 Fed. Reg. 19,304 (May 2, 2018) ("Notice of Hearing Opportunity").

11 Order (June 29, 2018).

12 *See* Petition.

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

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

(v) Provide a concise statement of the alleged facts or expert opinions, including references to the specific sources and documents that support the petitioner's position and upon which the petitioner intends to rely; and

(vi) Provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact.[13]

Failure to comply with any one of these six admissibility requirements is grounds for rejecting a proposed contention.[14] These requirements are "strict by design."[15] The rules were "toughened . . . in 1989 because in prior years 'licensing boards had admitted and litigated numerous contentions that appeared to be based on little more than speculation.'"[16] The purpose of the six criteria is to "focus litigation on concrete issues and result in a clearer and more focused record for decision."[17] The Commission has explained 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."[18]

The petitioner alone bears the burden to meet the standards of contention admissibility.[19] Thus, where a petitioner neglects to provide the requisite support for its contentions, the Board

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13 *See also Susquehanna Nuclear, LLC* (Susquehanna Steam Elec. Station, Units 1 & 2), CLI-17-4, 85 NRC 59, 74 (2017).

14 *See* Changes to Adjudicatory Process; Final Rule, 69 Fed. Reg. 2182, 2221 (Jan. 14, 2004); *see also Private Fuel Storage, L.L.C.* (Indep. Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999).

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

16 *Id.* (citing *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 334 (1999)).

17 Changes to Adjudicatory Process, 69 Fed. Reg. at 2202; *see also Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 & 3), LBP-08-13, 68 NRC 43, 61 (2008).

18 Changes to Adjudicatory Process, 69 Fed. Reg. at 2202.

19 *See Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-15-23, 82 NRC 321, 325, 329 (2015) ("[I]t is Petitioners' responsibility, not the Board's, to formulate contentions and to provide 'the necessary information to satisfy the basis requirement' for admission"); *DTE Elec. Co.* (Fermi Nuclear Power Plant, Unit 2), CLI-15-18, 82 NRC 135, 149 (2015) ("[T]he Board may not substitute its own support for a contention.").

may not cure the deficiency by supplying the information that is lacking or making factual assumptions that favor the petitioner to fill the gap.[20] A contention that merely states a conclusion, without reasonably explaining why the application is inadequate, cannot provide a basis for the contention.[21] A "material issue" is one that would "make a difference in the outcome of the licensing proceeding."[22] The petitioner must demonstrate that the subject matter of the contention would impact the grant or denial of a pending license application.[23]

Of particular importance for this Answer, a contention that challenges an NRC rule is outside the scope of the proceeding because, absent a waiver, "no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding."[24] This includes contentions that advocate stricter requirements than agency rules impose or that otherwise seek to litigate a generic determination established by a Commission rulemaking.[25] Similarly, any contention that collaterally attacks applicable statutory requirements or the basic structure of the NRC regulatory process must be rejected by the licensing board as outside the scope of the proceeding.[26] Accordingly, a contention that simply states the petitioner's views about regulatory policy—or takes issue with the nature of existing regulations—does not present a litigable issue.[27]

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20 *See Palisades*, CLI-15-23, 82 NRC at 329; *Fermi*, CLI-15-18, 82 NRC at 149; *Ariz. Pub. Serv. Co.* (Palo Verde Nuclear Station, Units 1, 2, & 3), CLI-91-12, 34 NRC 149, 155 (1991).

21 *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006).

22 *Oconee*, CLI-99-11, 49 NRC at 333-34.

23 *See Indian Point*, LBP-08-13, 68 NRC at 62.

24 10 C.F.R. § 2.335(a).

25 *See Fla. Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 & 4), LBP-01-6, 53 NRC 138, 159-60, *aff'd*, CLI-01-17, 54 NRC 3 (2001) (rejecting the petitioner's contention that a license renewal applicant was required to prepare a probabilistic risk assessment, where NRC regulations did not require such an analysis).

26 *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant, Unit 1), LBP-07-11, 66 NRC 41, 57-58 (2007) (stating that a contention that attacks applicable statutory requirements "must be rejected by a licensing board as outside the scope of the proceeding") (citing *Phila. Elec. Co.* (Peach Bottom Atomic Power Station, Units 2 & 3), ALAB-216, 8 AEC 13, 20 (1974)).

27 *See Peach Bottom*, ALAB-216, 8 AEC at 20-21.

Equally important, the Commission has stated further that the petitioner must "read the pertinent portions of the license application . . . state the applicant's position and the petitioner's opposing view," and explain why it disagrees with the applicant.[28] If a petitioner believes the license application fails to adequately address a relevant issue, then the petitioner is to "explain why the application is deficient."[29] A contention that does not directly controvert a position taken by the applicant in the application is subject to dismissal.[30] For example, if a petitioner submits a contention of omission, but the allegedly missing information is indeed in the license application, then the contention does not raise a genuine dispute.[31]

IV. THE PETITION MUST BE DENIED FOR LACK OF AN ADMISSIBLE CONTENTION

As demonstrated below, both of SACE's proposed contentions are inadmissible because they fail to satisfy the contention admissibility criteria set out in 10 C.F.R. § 2.309(f)(1)(i) through (vi).[32] Accordingly, the Petition should be denied in its entirety.

A. Contention 1 Is Not Admissible Under § 2.309(f)(1) Because It Raises Issues Outside the Scope of the Proceeding, Lacks Adequate Support, and Fails to Establish a Genuine Material Dispute With the ER

Contention 1 alleges that FPL's ER violates NEPA and the NRC's Part 51 regulations by purportedly "underestimating, or at times ignoring, the environmental impacts to the surrounding

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28 Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process; Final Rule, 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989); *see also Millstone*, CLI-01-24, 54 NRC at 358.

29 Procedural Changes in the Hearing Process, 54 Fed. Reg. at 33,170; *see also Palo Verde*, CLI-91-12, 34 NRC at 156.

30 *See S.C. Elec. & Gas Co.* (Virgil C. Summer Nuclear Station, Units 2 & 3), CLI-10-1, 71 NRC 1, 21-22 (2010); *Tex. Utils. Elec. Co.* (Comanche Peak Steam Elec. Station, Unit 2), LBP-92-37, 36 NRC 370, 384 (1992), *vacated as moot*, CLI-93-10, 37 NRC 192 (1993).

31 *See Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), LBP-04-15, 60 NRC 81, 95 (2004); *see also Summer*, CLI-10-1, 71 NRC at 21-22.

32 *See* 10 C.F.R. § 2.309(c)(4), (f)(1); *Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-05-24, 62 NRC 551, 567 (2005) (citing Changes to Adjudicatory Process, 69 Fed. Reg. at 2221) ("The failure of a proposed contention to meet *any one* of these requirements is grounds for its dismissal.") (emphasis added).

water resources by continuing to use the [CCS] for cooling of Turkey Point Units 3 and 4."[33] More specifically, Contention 1 claims that the ER: (1) incorrectly minimizes the significance of CCS' *environmental impacts* on certain groundwater and surface water bodies (*i.e.*, the Biscayne Aquifer, Biscayne Bay, Card Sound, and the L-31E Canal) and certain ecological resources, including sea grass and American crocodile habitat in the CCS; (2) overstates the effectiveness of existing and planned *mitigation measures* to reduce and remove the hypersaline plume and ignores the negative impacts of those mitigation measures; and (3) does not adequately address the *cumulative impacts* of operating Units 3 and 4 and the CCS for another 20 years beyond the current license terms.[34] As explained below, SACE's claims do not support the admission of Contention 1 because they are legally and factually deficient vis-à-vis the contention admissibility requirements of 10 C.F.R. § 2.309(f)(1).

1. Contention 1 Improperly Challenges "Category 1" Findings in the GEIS and Part 51 and Thus Raises Issues Outside the Scope of This Proceeding

Insofar as Contention 1 challenges the adequacy of the ER's discussion of the impacts of CCS operation on groundwater, surface water, and ecological (aquatic and terrestrial) resources, it fails almost entirely as "a collateral attack on Part 51 and its underlying GEIS," because the specific issues raised are discussed in the GEIS and codified in Part 51 as generic Category 1 issues.[35] As such, absent a waiver of the NRC's generic findings in the GEIS (as codified in Table B-1)—which SACE decidedly has not sought here—such issues "are not subject to site-specific review and thus fall beyond the scope of individual license renewal proceedings."[36] Accordingly,

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33 Petition at 6.

34 *See generally id.* at 17-29 (emphasis added).

35 *Turkey Point*, CLI-01-17, 54 NRC at 16.

36 *Id.*

Contention 1 must be rejected as contrary to the requirement of Section 2.309(f)(1)(iii) to the extent it raises issues that are outside the scope of the proceeding.

a. SACE's Claims in Contention 1 Relate Largely to Generic Category 1 Findings That Are Not Litigable in This Proceeding

As ER Section 4.0 explains, in the GEIS, the NRC has identified and analyzed 78 environmental issues that it considers to be associated with nuclear power plant license renewal, and has designated the issues as Category 1, Category 2, or not categorized.[37] "Category 1" issues are issues on which the NRC found that it could draw "generic conclusions applicable to all existing nuclear power plants, or to a specific subgroup of plants."[38] Such issues involve "environmental effects that are essentially similar for all plants," and thus they "need not be assessed repeatedly on a site-specific basis."[39] Category 2 issues, by contrast, are those non-generic issues that require site-specific analysis for each individual license renewal proceeding.[40] Under NRC regulations, the ER must include plant-specific analysis of all applicable Category 2 issues.[41] However, an applicant may refer to and adopt the generic environmental impact findings found in Table B-1, for *all* Category 1 issues, without performing further plant-specific analyses.[42]

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37 *See* ER at 4-1.

38 *Turkey Point*, CLI-01-17, 54 NRC at 11. For Category 1 issues, the NRC has determined that: "(1) [t]he environmental impacts associated with the issue . . . apply either to all plants or, for some issues, to plants having a specific type of cooling system or other specified plant or site characteristics; (2) a single significance level (*i.e.*, small, moderate, or large) has been assigned to the impacts . . . ; and (3) . . . additional plant-specific mitigation measures are likely not to be sufficiently beneficial to warrant implementation." 10 C.F.R. pt. 51, subpt. A, app. B n.2.

39 *Turkey Point*, CLI-01-17, 54 NRC at 11; 10 C.F.R. pt. 51, subpt. A, app. B, tbl. B-1.

40 GEIS, vol. 1 at S-7; 10 C.F.R. pt. 51, subpt. A, app. B, n.2; *see also Turkey Point*, CLI-01-17, 54 NRC at 12.

41 10 C.F.R. § 51.53(c)(3)(ii); *Turkey Point*, CLI-01-17, 54 NRC at 11.

42 10 C.F.R. § 51.53(c)(3)(i). *See also Massachusetts v. United States*, 522 F.3d 115, 120 (1st Cir. 2008) ("The regulations generally relieve applicants of having to discuss Category 1 issues, instead allowing applicants to rest on the GEIS findings."); *Massachusetts v. NRC*, 708 F.3d 63, 68 (1st Cir. 2013) ("Those [Category 1] environmental impacts need not be included in an environmental report nor need they be considered on a site-specific basis in the EIS.") (internal citations omitted).

An applicant also must include in its ER "any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware."[43]

Chapter 4 of FPL's ER addresses each of the Category 1 and Category 2 resource issues set forth in the GEIS and, as summarized in a series of tables, indicates why each is applicable or not applicable to the Turkey Point facility.[44] Significantly, SACE does not even mention, much less dispute, the Category 1 and Category 2 applicability determinations made by FPL in Chapter 4 of the ER. Table 1 below lists those Category 1 findings (as applicable to Turkey Point Units 3 and 4) and Category 2 findings that SACE appears to directly or indirectly challenge via its various assertions in Contention 1.

Table 1. Summary of GEIS/Table B-1 Category 1 and 2 Findings Relevant to Contention 1

Issue (from GEIS and Table B-1)	Category & GEIS Findings (as Codified in Table B-1)	Nature of Related SACE Challenge
Groundwater Resource Issues		
Groundwater quality degradation (plants with cooling ponds in salt marshes)	Category 1. SMALL. Sites with closed-cycle cooling ponds could degrade groundwater quality. However, groundwater in salt marshes is naturally brackish and thus, not potable. Consequently, the human use of such groundwater is limited to industrial purposes.	SACE alleges that FPL's ER does not adequately consider the environmental impacts of non-radiological contaminants in the CCS on the surficial Biscayne Aquifer underlying the CCS and related mitigation measures being implemented by FPL. [Petition at 6-7, 17-24]
Radionuclides released to groundwater	Category 2. SMALL or MODERATE. Leaks of radioactive liquids from plant components and pipes have occurred at numerous plants. Groundwater protection programs have been established at all operating nuclear power plants to minimize the potential impact from any inadvertent releases. The magnitude of impacts would depend on site-specific characteristics.	SACE alleges that FPL's ER does not adequately consider the adverse impacts of tritium in the Turkey Point CCS on the Biscayne Aquifer. [Petition at 6, 18]
Surface Water Resource Issues		
None of the surface water issues listed in Table B-1 appears to be relevant to SACE Contention 1, because that contention focuses on alleged adverse impacts resulting from the migration of groundwater that has interacted with CCS water into surface water. SACE does not allege that Turkey Point is discharging contaminants directly to surface water bodies.		

[43] 10 C.F.R. § 51.53(c)(3)(iv).

[44] *See* ER at 4-5 to 4-10 (Tables 4.0-1 through 4.0-3).

Issue (from GEIS and Table B-1)	Category & GEIS Findings (as Codified in Table B-1)	Nature of Related SACE Challenge
Terrestrial Resource Issues		
Cooling system impacts on terrestrial resources (plants with once-through cooling systems or cooling ponds)	Category 1. SMALL. No adverse effects to terrestrial plants or animals have been reported as a result of increased water temperatures, fogging, humidity, or reduced habitat quality. Due to the low concentrations of contaminants in cooling system effluents, uptake and accumulation of contaminants in the tissues of wildlife exposed to the contaminated water or aquatic food sources are not expected to be significant issues.	SACE alleges that FPL's ER does not adequately consider the environmental impacts of non-radiological contaminants originating from the CCS and migrating through groundwater on Biscayne Bay and Card Sound, which include mangrove forests and wetlands. [Petition at 6, 9, 11-12, 22, 25]
Aquatic Resource Issues		
Effects of non-radiological contaminants on aquatic organisms	Category 1. SMALL. Best management practices and discharge limitations of NPDES permits are expected to minimize the potential for impacts to aquatic resources during continued operations and refurbishment associated with license renewal. Accumulation of metal contaminants has been a concern at a few nuclear power plants but has been satisfactorily mitigated by replacing copper alloy condenser tubes with those of another metal.	SACE alleges that FPL's ER does not adequately consider the environmental impacts of non-radiological contaminants originating from the CCS and migrating through groundwater on the Biscayne Bay ecosystem, which supports numerous commercially and recreationally important marine species. [Petition at 11-12, 18-19]
Exposure of aquatic organisms to radionuclides	Category 1. SMALL. Doses to aquatic organisms are expected to be well below exposure guidelines developed to protect these aquatic organisms.	SACE suggests that tritium originating from the Turkey Point directly affects the CCS's seagrass ecosystem and indirectly affects the Great Everglades. [Petition at 6, 18]
Special Status Species and Habitats		
Threatened, endangered, and protected species and essential fish habitat	Category 2. The magnitude of impacts on threatened, endangered, and protected species, critical habitat, and essential fish habitat would depend on the occurrence of listed species and habitats and the effects of power plant systems on them. Consultation with appropriate agencies would be needed to determine whether special status species or habitats are present and whether they would be adversely affected by continued operations and refurbishment associated with license renewal.	SACE alleges that FPL's ER underestimates impacts of continued CCS operation on the federally threatened American crocodile. [Petition at 6-7, 12-13, 19-20]
Cumulative Impacts		
Cumulative impacts	Category 2. 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.	SACE claims that FPL's ER does not adequately address the cumulative impacts of operating Turkey Point for an additional 20 years (*i.e.*, during the SLR period). [Petition at 24-28]

As Table 1 illustrates, the only Category 2 issues to which Contention 1 relates are: (1) radionuclides released to groundwater, (2) potential impacts of CCS operation on the American crocodile (a federally listed species) and its associated habitat; and (3) the "cumulative impacts" of continued plant operations during the SLR period. As demonstrated in Section IV.A.3, *infra*, SACE's arguments regarding these three Category 2 issues (while within the scope of this proceeding) lack adequate factual support and fail to establish a genuine material dispute with the ER. As such, they fail to support the admission of proposed Contention 1.

SACE's numerous claims regarding "underestimated" non-radiological impacts to groundwater, surface water, and ecological resources (see Table 1 above) pertain to Category 1 environmental impact findings, as set forth in the GEIS and codified in Table B-1 in Appendix B to Subpart A of 10 C.F.R. Part 51. Those claims fail to support the admission of Contention 1 for two reasons. First, as discussed in Section IV.A.1.b immediately below, SACE has not sought and obtained a waiver to litigate in this proceeding any Category 1 issues. Therefore, those issues and SACE's related arguments are outside the scope of this proceeding. Second, as explained in Section IV.A.2 below, SACE's arguments concerning these Category 1 issues (even assuming they were litigable here) also lack adequate factual support.

b. SACE Has Not Obtained a Waiver Allowing It to Litigate the Category 1 Issues Raised in Contention 1

To litigate any of the Category 1 generic findings in this proceeding, SACE must obtain a waiver from the Commission pursuant to 10 C.F.R. § 2.335(b).[45] Controlling judicial and

[45] A waiver under 10 C.F.R. § 2.335(b) provides only a "limited exception" to the NRC's general prohibition against challenges to NRC rules or regulations in adjudicatory proceedings, and requires that the petitioner seeking a waiver demonstrate via affidavit 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 . . . [it] was adopted." *Exelon Generation Co., LLC* (Limerick Generating Station, Units 1 & 2), CLI-13-7, 78 NRC 199, 206-07 (2013) (quoting 10 C.F.R. § 2.335(b)).

Commission precedent is clear on this point. The generically-applicable "Category 1" findings in the GEIS and Table B-1 are the result of NRC rulemaking and are an integral component of the NRC's NEPA review of license renewal applications.[46] In *Baltimore Gas & Electric*, the Supreme Court held that "[t]he generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA."[47] The Court also has "found agency reliance on prior [generic] determinations to be perfectly acceptable, even when the statute before it plainly calls for individualized hearings and findings."[48] In any case, neither the AEA nor NEPA confers an automatic right to a hearing on any of the issues raised by SACE in its Petition.[49]

A petitioner "cannot challenge an agency's rulemaking via collateral attack, absent a waiver."[50] This well-established precept applies even when a petitioner purports to have identified "new and significant information" bearing on the NRC's generic environmental impact findings in Part 51.[51] For example, in the *Vermont Yankee* and *Pilgrim* license renewal proceedings, the Commission considered proposed contentions that challenged a "Category 1" issue.[52] The petitioners in both proceedings filed similar contentions, arguing that new and significant

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46 *See Turkey Point*, CLI-01-17, 54 NRC at 15 (citing 10 C.F.R. § 51.95; GEIS at 1-9 to 1-10; Environmental Review for Renewal of Nuclear Power Plant Operating Licenses; Final Rule, 61 Fed. Reg. 28,467, 28,485 (June 5, 1996) ("Part 51 Rulemaking")) ("Resolving an environmental issue generically does not reduce its importance. In making a final decision on license renewal, the NRC will still weigh all of the different environmental impacts from extended operation, whether those impacts occur generically at all plants or on a plant-specific basis.").

47 *Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 101 (1983). *See also Massachusetts*, 522 F.3d at 127; *Massachusetts*, 708 F.3d at 68; *NRDC v. NRC*, 823 F.3d, 641, 653 (D.C. Cir. 2016).

48 *Nuclear Info. Res. Serv. v. NRC*, 969 F.2d 1169, 1176 (D.C. Cir. 1992) (en banc) (citing Supreme Court cases). *See also Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979).

49 *NRDC v. NRC*, 823 F.3d at 652 ("[N]either the AEA nor NEPA guarantees an absolute right to a hearing and neither dictates how the Commission should determine who receives a hearing."). *See also Beyond Nuclear v. NRC*, 704 F.3d 12, 18–19 (1st Cir. 2013) (quoting *Vt. Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 548 (1978)) ("NEPA does not mandate particular hearing procedures and does not require hearings.").

50 *NRDC v. NRC*, 823 F.3d at 654.

51 Curiously, in addition to ignoring the important dichotomy between Category 1 and Category 2 issues, SACE never expressly claims that it has presented "new and significant information."

52 *Entergy Nuclear Vt. Yankee, LLC* (Vt. Yankee Nuclear Power Station) & *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-07-3, 65 NRC 13 (2007).

information rendered the GEIS analysis of the impacts of spent fuel pool storage inadequate, thereby requiring the applicants to discuss the issue in their environmental reports.[53]

In a consolidated decision, the Commission upheld the *Vermont Yankee* and *Pilgrim* Licensing Boards' rejection of the contentions as improper challenges to Section 51.53(c)(3)(i).[54] It found that "the new and significant information requirement in [section] 51.53(c)(3)(iv) did *not* override, for the purposes of litigating the issues in an adjudicatory proceeding, the exclusion of Category 1 issues in [section] 51.53(c)(3)(i) from site-specific review."[55] The Commission noted that "[a]djudicating Category 1 issues site by site based merely on a claim of 'new and significant information,' would defeat the purpose of resolving generic issues in a GEIS."[56] Consequently, the Commission determined that a waiver was required to litigate any new and significant information relating to a Category 1 issue, and affirmed the Boards' rejection of the petitioners' contentions given the lack of a waiver request.[57]

The First Circuit denied the petitions for review of the NRC's decision, citing the federal courts' "substantial deference" to the NRC's interpretation of its own rules.[58] The court of appeals stated that "[t]he NRC's procedural rules are clear: *generic Category 1 issues cannot be litigated in individual licensing adjudications without a waiver*."[59] Absent a waiver, any petitioner wishing

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53 *Id.* at 18-19.

54 *Id.* at 20 ("Fundamentally, any contention on a 'Category 1' issue amounts to a challenge to our regulation that bars challenges to generic environmental findings.").

55 *Exelon Generation Co., LLC* (Limerick Generating Station, Units 1 and 2), CLI-12-19, 76 NRC 377, 384 (2012) (citing *Vermont Yankee/Pilgrim*, CLI-07-3, 65 NRC at 21) (emphasis added).

56 *Vermont Yankee/Pilgrim*, CLI-07-3, 65 NRC at 21.

57 *See id.* at 19-21; *see also Limerick*, CLI-12-19, 76 NRC at 384 (citing *Vermont Yankee/Pilgrim*, CLI-07-3, 65 NRC at 20) ("[W]e determined that a waiver was required to litigate any new and significant information relating to a Category 1 issue.").

58 *Massachusetts*, 522 F.3d at 127.

59 *Id.* (emphasis added).

to attack or challenge the agency's rule on such an issue must petition for a generic rulemaking.[60] SACE has filed neither a waiver petition nor a rulemaking petition in connection with its Category 1-related challenges, which, as discussed in the next section, also are factually unfounded.

2. SACE's Category 1-Related Claims Regarding Environmental Impacts and Mitigation Measures Also Lack Sufficient Factual Foundation

SACE's claims regarding the impacts of the CCS groundwater, surface water, and ecological resources are not litigable for the reasons set forth above. In any event, those claims—and SACE's related criticisms of FPL's mitigation measures—still would fail for lack of sufficient factual support.

a. Factual Background Concerning the CCS and Its Compliance History

The CCS comprises a network of canals spanning approximately 2 miles wide by 5 miles long. The system functions like a large radiator and serves as the ultimate heat sink ("UHS") for Turkey Point.[61] The Turkey Point CCS does not directly discharge to fresh or marine surface waters, but groundwater naturally interacts with water in the canals because the canals are not lined and the underlying geological formation is very porous.[62]

FPL operates the CCS as a State of Florida Industrial Waste Water ("IWW") facility under NPDES/IWW Permit No. FL0001562, a combined or joint permit that the FDEP issued pursuant to the federal NPDES program (as delegated by the EPA to Florida) and the Florida IWW permitting program.[63] The NPDES permit authorizes wastewater discharges from the generating

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60 *Id.* (citing *Turkey Point*, CLI-01-17, 54 NRC at 12).

61 *See* ER at 2-7, 3-82 (describing the purpose and configuration of the CCS).

62 *See id.*

63 *Id.* at 2-8, 3-88, 9-16. *See also* Florida Department of Environmental Protection, "Industrial Wastewater Program," https://floridadep.gov/water/industrial-wastewater ("The department is authorized by the U.S. Environmental Protection Agency to issue permits for discharge to surface waters under the National Pollutant Discharge Elimination System (NPDES). Permits for discharge to ground waters are issued by the department

units through two internal outfalls into the CCS, and does not authorize direct discharges to surface waters of the State.[64] The IWW permit authorizes discharges from the CCS (an IWW facility) into Class G-III groundwater that is part of the surficial Biscayne Aquifer.[65]

After consulting with the South Florida Water Management District ("SFWMD") in the early-1970s, FPL agreed to build an 18-feet deep interceptor ditch that runs along the west side of the cooling canals and to monitor groundwater and surface water for CCS-related impacts. The interceptor ditch was installed to restrict the westward movement of saline water in the upper portion of the Biscayne Aquifer.[66]

On January 18, 2008, FPL submitted a site certification application for a power uprate at Turkey Point Units 3 and 4 to the FDEP, the State agency charged with administering the Florida Electric Power Plant Siting Act ("PPSA").[67] As a result of the environmental review conducted under the Florida PPSA in 2008, Conditions of Certification IX and X were included in a Site Certification Modification. Among other things, those conditions required FPL to implement an expanded groundwater, surface water, and ecological monitoring program for the CCS.[68] On

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under state statutes and rules."). As noted previously, it has been and remains FPL's position that FDEP permits that regulate discharges to groundwater are issued pursuant to Florida law, not the federal CWA.

64 *Id.* at 3-88, 9-16.

65 Florida uses the "Class G-III" designator to identify groundwater that has no reasonable potential as a future source of drinking water due to high total dissolved solids ("TDS") (> 10,000 mg/L) content. "Class G-II" refers to groundwater having a TDS content between 1,000 and 10,000 mg/L. ER at 3-87, 3-113.

66 *See* ER at 2-9, 3-90 to 3-91.

67 FLA. STAT. §§ 403.501-.518. Turkey Point Units 3 through 5 are licensed under the PPSA and operate in accordance with the "Conditions of Certification" in their license (PA 03-45E). ER at 9-10. The PPSA process provides a certification that encompasses many licenses and permits needed for affected Florida state, regional, and local agencies, and includes any regulatory activity applicable under those agencies' regulations for Turkey Point Units 3 and 4. *Id.* Final Conditions of Certification are binding on the licensee under the PPSA. *Id.*

68 The expanded monitoring program included 47 monitoring wells; 22 surface water monitoring stations, meteorological and rainfall stations; 32 ecological transects located in the CCS, in wetlands and canals surrounding the CCS, and in Biscayne Bay and Card Sound; and 200 pore-water sample sites. ER at 3-92. This network has since been further augmented as required by the Consent Agreement and Consent Order with other agencies discussed herein.

October 31, 2012, FPL submitted to the appropriate agencies a comprehensive pre-uprate monitoring report containing data and analyses covering the pre-uprate monitoring period of June 2010 through June 2012. Certain data indicated that hypersaline water near the aquifer base (*i.e.*, below the interceptor ditch system) had migrated west of the plant. Consequently, FPL began consultations with State and local regulatory authorities regarding actions to abate the westward movement of hypersaline water near the aquifer base.[69]

FPL and the Miami-Dade County Department of Environmental Resources Management ("DERM") ultimately entered into a Consent Agreement on October 7, 2015, in which FPL agreed to take specific actions to remediate groundwater impacts adjacent to Turkey Point and the CCS, and to conduct additional monitoring and reporting.[70] The Consent Agreement's main objectives are to demonstrate a statistically-valid reduction in the salt mass and volumetric extent of hypersaline water, and to reduce the rate of (and ultimately arrest) migration of hypersaline groundwater.[71] On August 15, 2016, FPL and the DERM executed an addendum to the Consent Agreement, which requires FPL to take actions to address alleged exceedances of ammonia water quality standards and cleanup target levels in surface waters of adjacent deep remnant canals.[72]

Additionally, on June 20, 2016, FPL and the FDEP entered into a Consent Order that also requires FPL to take specified actions to address CCS-related groundwater impacts.[73] The objectives of the Consent Order are threefold: (1) ceasing discharges from the CCS that impair the reasonable beneficial use of adjacent G-II groundwaters, (2) preventing releases of groundwater

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69 *See* ER at 3-92, 9-10 to 9-11.

70 *Id.* at 3-92, 9-11. A copy of the Consent Agreement is available at ADAMS Accession No. ML16015A339.

71 *Id.*

72 *See id.* at 3-92 to 3-94.

73 *See id.* at 3-93. A copy of the Consent Order is available at ADAMS Accession No. ML16216A216.

from the CCS to surface waters connected to Biscayne Bay that result in exceedances of surface water quality standards in the Bay; and (3) mitigating impacts related to historical operations of the CCS.[74]

b. FPL Has Adequately Considered CCS Impacts on the Biscayne Aquifer

SACE asserts that data show that the hypersaline groundwater plume has moved more than two miles westward of the CCS and is influencing movement of the saline water interface within the Biscayne Aquifer more than four miles inland.[75] It further claims 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.[76] On the basis of these statements, SACE claims that FPL has underestimated impacts to the Biscayne Aquifer.

Contrary to SACE's assertions, FPL has not underestimated impacts to the Biscayne Aquifer. Indeed, FPL has fully acknowledged the westward migration of the hypersaline plume along the base of the Biscayne Aquifer.[77] Moreover, in full compliance with the Consent Agreement and Consent Order, FPL is implementing corrective actions approved by both the FDEP and Miami-Dade County DERM, including measures to reduce CCS salinity levels and plume-specific remediation actions. As the ER explains:

> As a result of the expanded groundwater monitoring [in 2009], it was determined that a number of corrective actions were required to address impacts resulting from the hypersalinity of the CCS. *FPL has not violated any of the operational requirements in the environmental permits associated with the CCS. Rather, the expanded monitoring enhanced the ability of FPL and the relevant regulatory authorities to ascertain the extent to which the hypersaline condition of the CCS was impacting the saline groundwater below and landward of the plant*. Ultimately, that monitoring pointed to the need for corrective actions to curtail and retract the landward migration of hypersaline groundwater. *In compliance*

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74 *Id.* at 3-93, 9-11 to 9-12.

75 Petition at 17.

76 *Id.* at 18.

77 *See* ER at 3-91.

> *with the directives of the various environmental agencies charged with oversight of the CCS, FPL is now in the mitigation and remediation phase. Already FPL's actions are achieving improvements in CCS salinity.*[78]

FPL's mitigation actions include designing, permitting and constructing the Upper Floridan Aquifer salinity abatement freshening well system; operating a hypersaline groundwater recovery well system ("RWS"); conducting canal restoration projects; implementing nutrient management and thermal efficiency plans; and developing a saltwater interface model.[79] Additionally, the Consent Agreement and Consent Order include requirements for installing additional monitoring stations, conducting pre-RWS (baseline) and post-RWS operation surveys, expanded data posting, and annual reporting, primarily to monitor movement of the hypersaline plume and progress in retracting that plume.[80]

In November 2017, FPL submitted to the FDEP its "2017 Annual Turkey Point Plant Remediation/Restoration Report."[81] As indicated therein, even nine months ago, FPL already had made significant progress in meeting the remediation, restoration, and reporting requirements of both the Consent Agreement and Consent Order. For example, FPL fully implemented the authorized CCS freshening activities, adding nearly 4.4 billion gallons of low salinity Upper Floridan Aquifer water to the CCS to offset evaporative losses during the abnormally dry 2017 dry season.[82] These actions, coupled with increased wet season rainfall, resulted in a September 30, 2017, CCS salinity level of 41.2 PSU, which is the lowest September CCS salinity recorded

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78 *Id.* at 3-90 (emphasis added).

79 *See id.* at 3-93, 3-165, 9-12.

80 *See id.* at 2-7 to 2-8, 3-90 to 3-95, 9-10 to 9-13.

81 *See* Letter from Matthew J. Raffenberg, FPL, to Megan Seward, FDEP (Nov. 29, 2017) (enclosing "2017 Annual Turkey Point Plant Remediation/Restoration Report") (Attachment 1 to this Answer) (Appendices omitted).

82 2017 Annual Turkey Point Plant Remediation/Restoration Report at 2.

since 1995.[83] In late September 2016, FPL also began extracting and disposing of (via underground well injection) hypersaline groundwater.[84] The reductions in CCS salinity levels and the extraction of hypersaline groundwater from the Biscayne Aquifer are aimed at abating plume migration and reducing the potential for G-II groundwater water quality standard violations.

In view of the above, there is no factual basis for SACE's claim that FPL has "erroneously minimized" the environmental impacts of the CCS on the Biscayne Aquifer. FPL has fully recognized and disclosed in the ER the impacts of CCS operations on the Biscayne Aquifer (including the westward migration of the hypersaline plume), and is taking appropriate corrective and remedial actions in accordance with the Miami-Dade County Consent Agreement and FDEP Consent Order. Those documents also require FPL to undertake robust monitoring and reporting actions and to submit alternative plans for review and approval by regulators if FPL is not meeting the remediation objectives therein. For these reasons, SACE's assertions regarding CCS impacts on the Biscayne Aquifer lack sufficient factual support, contrary to the requirements of 10 C.F.R. § 2.309(f)(1)(v).

c. FPL Has Adequately Considered CCS Impacts on Biscayne Bay

SACE also argues that CCS water is having a significant adverse environmental impact on Biscayne Bay, claiming that "[s]amples from locations adjacent to or within manmade channels that connect Biscayne Bay to the outer edge of the CCS show Nitrogen, Phosphorous, and Chlorophyll *a* levels in excess of regulatory limits."[85] According to SACE, "[t]he environmental effects of nutrient seepage from the CCS into Biscayne Bay are significant, because Biscayne Bay

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[83] *Id.* at 2, 10. *See also* ER at 2-8 ("These actions, combined with normal rainfall, have decreased salinity levels.").

[84] *See* ER at 3-94, 3-109; 2017 Annual Turkey Point Plant Remediation/Restoration Report at 5.

[85] Petition at 18. SACE also cites "elevated tritium levels" in Contention 1. *Id.* SACE's arguments concerning tritium are addressed in Section IV.A.3.a, *infra*.

is a 'low-nutrient' or 'nutrient-limited' ecosystem," and "will continue to degrade the ecosystem and cause an imbalance and change the nature of the surrounding marine environment."[86]

These assertions by SACE are factually incorrect. The ER explains that FPL assessed the cooling canals' effect on surface water through the groundwater interface via sampling events performed from 2010-2017, and based on the results of that sampling, concluded that the groundwater pathway is having no discernible influence on Biscayne Bay.[87] As discussed in ER Section 3.6.4.1 (Surface Water Quality), FPL also analyzed surface water quality data collected by the Miami-Date County DERM and Florida International University as part of Project BISC (renamed Project BBWQ).[88] It found that water quality data from samples taken in Card Sound show no meaningful water quality differences when compared to data from Biscayne Bay, and that Biscayne Bay, including Card Sound, is relatively consistent in regard to horizontal and vertical spatial variations in water quality.[89]

Insofar as the FDEP has determined that portions of Biscayne Bay/Card Sound are "impaired" waters under the Clean Water Act and related Florida regulations, its determinations are based on water quality in segments of Biscayne Bay/Card Sound located miles north of the Turkey Point facility.[90] None of the three segments that are contiguous to the Turkey Point site has been listed as impaired with respect to chlorophyll *a*, total nitrogen or total phosphorous.

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86 Petition at 19.

87 *See* ER at 4-34, 4-68 to 4-69

88 *See id.* at 3-110 to 3-111.

89 *Id.* at 3-111. Card Sound is south of Biscayne Bay. *See id.* at 3-110 & 3-129 (Fig. 3.6-1, "Regional Hydrological Features").

90 *See id.* at 3-112. Three listed segments within the southeastern coast/Biscayne Bay group (Mowry Canal, Military Canal, and Biscayne Bay) are the only water bodies located within a 6-mile radius of Turkey Point to appear on the 2016 Florida Clean Water Act Section 305(b) list of waters (*i.e.*, "Statewide Comprehensive List of Impaired Waters") assessed for impaired water quality. Canal and Military Canal are listed as impaired for specific conductance and Biscayne Bay is listed for nutrients (chlorophyll-a). These three segments are all located miles north of the Turkey Point site. *See* ER at 3-112 to 3-113.

Thus, SACE's statement that "[s]amples from locations adjacent to or within manmade channels that connect Biscayne Bay to the outer edge of the CCS show Nitrogen, Phosphorous, and Chlorophyll a levels in excess of regulatory limits" is misleading. In short, the impairment status of Biscayne Bay/Card Sound is unrelated to the operation of the CCS. SACE and its experts provide no facts to support a contrary conclusion, or their claim that alleged "nutrient seepage from the CCS" is having significant adverse impacts on Biscayne Bay water quality.[91] For these reasons, SACE's assertions regarding CCS impacts on Biscayne Bay lack sufficient factual support, contrary to the requirements of 10 C.F.R. § 2.309(f)(1)(v).

d. FPL Has Fully and Accurately Described Its State and County-Mandated Mitigation Measures for CCS-Related Impacts to Groundwater

SACE claims that FPL overstates the effectiveness of its mitigation measures to reduce and remove the hypersaline plume and ignores the alleged negative impacts of those mitigation measures.[92] That argument is both legally and factually flawed.

As a legal matter, SACE's mitigation-related claims are outside the scope of this proceeding. Although mitigation measures *per se* are not identified as a Category 1 issue in Table B-1, the definition of a "Category 1" issue states, in relevant part: "Mitigation of adverse impacts associated with the issue has been considered in the analysis, and it has been determined that additional plant-specific mitigation measures are not likely to be sufficiently beneficial to warrant implementation."[93] In CLI-10-14, the Commission held that "[a] license renewal applicant

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91 Petition at 19. Similarly, SACE provides no facts to controvert FPL's conclusions in the ER that "the CCS is not the source of the measured elevated ammonia samples collected at some of the adjacent remnant canals connected to Biscayne Bay," and that such elevated ammonia levels are the result of the decomposition of wetland and aquatic plant material and other natural processes. ER at 3-95, 9-13.

92 Petition at 20.

93 10 C.F.R. pt. 51, subpt. A, app. B, tbl. B-1 n.2.

therefore 'need not address mitigation for issues' designated Category 1."[94] In this regard, SACE's challenges to the adequacy of FPL's CCS-related mitigation measures (which involve Category 1 issues) are outside the scope of this proceeding as a matter of law.[95]

Furthermore, State and County regulators have approved FPL's mitigation actions and will continue to oversee and enforce their implementation by FPL. Although the NRC must exercise its independent judgment with regard to the ultimate conclusions about a project's environmental impacts, the GEIS makes clear that a license renewal applicant's reliance on mitigation actions required and enforced by state and local agencies is reasonable and appropriate.[96] This is especially true in the present context, where the "NRC's authority does not extend to requiring operating nuclear plants to replace or modify their cooling systems to reduce impacts."[97] In 2007, the Commission examined this issue in depth in the *Vermont Yankee* license renewal proceeding, and left no doubt as to the NRC's lack of jurisdiction over NPDES permitting matters:

> Pursuant to section 316(a) of [the CWA], NPDES permits may . . . address thermal discharges into bodies of water. *Section 511(c)(2) of the [CWA] precludes us from either second-guessing the conclusions in NPDES permits or imposing our own effluent limitations—thermal or otherwise.* Indeed, the Clean Water Act's legislative history indicates that Congress, when enacting section 511(c)(2), specifically intended to deprive the NRC's predecessor agency (the Atomic Energy Commission) of such authority.[98]

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94 *Entergy Nuclear Generation Co. & Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-14, 71 NRC 449, 471 (2010) (quoting 1996 Part 51 Rulemaking, 61 Fed. Reg. at 28,484).

95 *See* GEIS, vol. 1 at 3-138.

96 *See, e.g.*, GEIS, vol. 1 at 4-91 ("The NRC expects that any site-specific mitigation required under the NPDES permitting process should result in a reduction in the impacts of continued plant operations."). *See also id.*, vol. 2, app. A at A-1-1 ("The actual requirements for mitigation are determined among the licensee and Federal or State agencies with jurisdiction over the affected resource.").

97 *Id.*, vol. 2, app. A at A-220.

98 *Entergy Nuclear Vt. Yankee, LLC* (Vt. Yankee Nuclear Power Station), CLI-07-16, 65 NRC 371, 377 (2007) (internal footnotes and citations omitted; emphasis added) (reversing the Board's admission of a contention asserting that the applicant's ER inadequately addressed the impacts of increased thermal discharges into the Connecticut River during the license renewal period). *See also Tenn. Valley Auth.* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702 (1978) (holding that the NRC is prohibited from imposing requirements on nuclear power plant licensees with regard to water quality).

Contrary to the holdings in *Vermont Yankee* (CLI-07-16) and other decisions cited therein, SACE's proposed contention asks the NRC to "second-guess" determinations made by the FDEP pursuant to its EPA-delegated permitting authority.

In a related vein, the NRC "may properly assume that an applicant or licensee will comply with concrete and enforceable conditions and requirements imposed by statutes, regulations, licenses, or permits issued by competent federal, state, or local governmental entities."[99] In this case, those entities include the FDEP, SFWMD, and Miami-Dade DERM. FPL's required "monitoring and mitigation measures, combined with the active oversight and policing of the state and local environmental agencies . . . provide the NRC with *reasonable assurance that sound monitoring and mitigation measures will actually be implemented and will be successful*."[100]

SACE's stated concerns regarding FPL's mitigation measures also lack factual merit. As discussed above and in the ER, FPL is implementing a series of actions to reduce the average annual CCS salinity to 34 PSU, improve the thermal efficiency of the CCS, reduce nutrients, and re-establish the seagrass meadows and associated ecosystem that occurred in the CCS as a natural nutrient management system.[101] To achieve these objectives, FPL has developed a nutrient

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[99] *Progress Energy Fla., Inc.* (Levy County Nuclear Power Plant, Units 1 and 2), LBP-13-4, 77 NRC 107, 217-18 (2013). *See also Fla. Power & Light Co.* (Turkey Point Units 6 and 7), LBP-17-5, 86 NRC 1 (2017) (citing *Ark. Power & Light Co.* (Arkansas Nuclear One Unit 2), ALAB-94, 6 AEC 25, 28 (1973); *So. Cal. Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-308, 3 NRC 20, 30 (1976)).

[100] *Levy*, LBP-13-4, 77 NRC at 219 (emphasis added). As noted above, SACE is actively litigating various CCS-related claims in federal district court. Such claims should not be concurrently litigated (or re-litigated) in this NRC forum under the guise of SACE's proposed NEPA contentions. *Cf. Ariz. Pub. Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), LBP-82-117A, 16 NRC 1964, 1991 (declining to rule on the validity of a multi-party wastewater effluent use agreement because the Board lacked jurisdiction, "comity requires the Commission to accept the position taken by its sister federal agencies as well as by other state and local governmental authorities," and "the issue [was] pending in litigation before a federal district court").

[101] As noted in the ER, FPL also is undertaking restoration projects at Turtle Point and Barge Basin, as required by the June 2016 Consent Order. ER at 3-93, 9-12. *See also* 2017 Annual Turkey Point Plant Remediation/ Restoration Report at 5.

management plan, which includes both near-term and long-term initiatives.[102] FPL's mitigation and remediation actions already have yielded positive results (including reduced salinity levels in the CCS) that in no way have been "overstated."

For example, from April through September 2015, in Sections 1 and 3 of the CCS, FPL removed 417,630 cubic yards of sediment from 16 canals, to improve temperature, salinity, and water quality management in the CCS. The ER notes that future sediment removal phases will be conducted as necessary to achieve and maintain the objective and requirements of the June 2016 Consent Order.[103]

In 2015, FPL used controlled sources from the L-31 Canal, marine wells, and flow from Floridan Aquifer wells to reduce the salinity in the CCS.[104] On November 28, 2016, FPL began operation of a 14 million gallons per day ("MGD") Upper Floridan Aquifer freshening well system, which provides makeup flow to the cooling canals.[105] The lower salinity water is being used to help reduce the CCS salinity to an average annual level of 34 PSU, essentially equivalent to the salinity of Biscayne Bay. [106]

In October 2016, FPL began extracting hypersaline groundwater from the Biscayne Aquifer beneath the CCS from 90 ft. deep underground injection control ("UIC") test extraction

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[102] *See* ER at 3-93, 3-165, 9-12.

[103] *See* ER at 3-89 to 3-90.

[104] *Id.* at 2-8, 3-195. Marine wells PW-1 (Test), SW-1, and SW-2 were installed in 2015 in the Biscayne Aquifer, and were used only under "extraordinary circumstances" to moderate further salinity rises in the CCS. *Id.* at 2-8, 3-109 to 3-110.

[105] *Id.* at 3-95, 9-13. The Upper Floridan Aquifer production wells are artesian wells installed between 1,000 and 1,250 feet deep and located along the northernmost canal and western side of the CCS east of the interceptor ditch. *Id.* at 3-109.

[106] FPL has not used water from the L-31E Canal for freshening purposes since 2015. ER at 2-8. FPL elected to discontinue the L-31E Canal source for freshening, and the pumping facilities were decommissioned in December 2016. 2017 Annual Turkey Point Plant Remediation/Restoration Report at 2. Therefore, there is no basis for SACE's claim that FPL may withdraw water L-31E Canal in a manner that conflicts with the use of L-31E water for the Central Everglades Restoration Project ("CERP"). *See* Petition at 7-8, 13-15.

wells. FPL began full operation of the State-approved RWS began in mid-May 2018. During this time, FPL has removed 8.3 billion gallons of hypersaline groundwater from the base of the Biscayne aquifer—an equivalent salt mass removed of 3.4 billion pounds.[107]

SACE and its experts seek to cast doubt on the efficacy of these mitigation and remediation actions, and also allege that FPL ignores associated "negative effects."[108] Specifically, they claim that: (1) the volume of contaminated water that can be extracted using the RWS is inadequate to offset the rate at which the continued operation of the cooling canals adds water to the plume; (2) deep excavated sites such as the Old Card Sound Canal and unfilled continuations of the Barge Basin and Turtle Point canals will continue to provide "direct pathways for contaminant travel;" and (3) adding water to the CCS will "increase[] the hydraulic head on the hypersaline plume, thereby driving it farther into the Biscayne Aquifer."[109]

As an initial matter, SACE's criticisms run counter to the informed technical judgments of the State and local regulators that approved the mitigation measures in question. Those judgments are not subject to reexamination in this NRC license renewal proceeding. As noted above, the Commission has held that Section 511(c)(2) of the Clean Water Act precludes the NRC from second-guessing the NPDES-related determinations of State regulators.

SACE's criticisms are, in any event, factually baseless. First, as noted above, FPL already has removed more than 8 billion gallons of hypersaline groundwater from the base of the Biscayne Aquifer as part of its ongoing County and State-permitted RWS extraction and UIC well disposal

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107 *See* ER at 3-94, 9-12 (noting that as of June 30, 2017, FPL had extracted approximately 3.7 billion gallons of hypersaline groundwater from the base of the Biscayne Aquifer). The extracted groundwater is disposed of in a deep injection well in the naturally saline Boulder Zone Formation located 3,200 feet below the surface under FDEP Permit No. 293962-002-UC. *See* ER at 3-94, 9-13.

108 Petition at 20.

109 *Id.* at 21-24.

activities. This fact, coupled with other mitigation measures being applied by FPL, plainly will contribute to reduced salinity levels in that aquifer. Citing a "water budget" analysis, SACE and its expert assert that the volume of contaminated water that can be extracted using the RWS "is barely adequate to offset the rate at which the continued operation of the cooling canals adds water to the plume," rendering RWS success "highly unlikely."[110] But the RWS system design was informed by a groundwater flow and transport model and associated sensitivity analyses that were specifically reviewed and approved by Miami Dade County.[111] As noted above, the GEIS makes clear that a license renewal applicant's reliance on mitigation actions required and enforced by state and local agencies is reasonable and appropriate.

Second, extensive monitoring data provide *no* indication that significant amounts of CCS water are entering Biscayne Bay or Card Sound via "numerous" "direct pathways" for groundwater flow into those surfaces water bodies, as alleged by SACE.[112] As discussed above, environmental sampling in areas adjacent to the CCS show that the CCS is not causing or contributing to the impairment of Biscayne Bay water quality.

Finally, FPL has not ignored the purported "negative effect" of hydraulic head increases caused by the addition of freshening water to the CCS, which SACE and its experts postulate "will drive the [hypersaline] plume deeper into the aquifer."[113] SACE's argument is based on the patently flawed (and inadequately supported) premise that "as the volume and water levels [in the CCS] increase [from the addition of much lower-salinity freshening water], the flow of water into the aquifer from the CCS increases until it balances the inflow provided by new sources of

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110 *Id.* at 21-22 (citing Nuttle Report at 3, 18).

111 *See* 2017 Annual Turkey Point Plant Remediation/Restoration Report at 4.

112 Petition at 22.

113 *Id.* at 7.

water."[114] SACE overlooks the obvious fact that adding lower salinity Upper Floridan Aquifer water (with a salinity level of 2.5 PSU) to the CCS water will decrease the density of the CCS water, thereby *reducing* its ability to displace Biscayne Aquifer groundwater beneath the CCS. In testimony submitted in the hearing on FPL's license amendment requests to increase the UHS water temperature limit for the cooling canals at Turkey Point, FPL's civil engineering expert explained this concept as follows:

> The addition of 14 MGD of UFA water is designed to improve water quality in the CCS and in turn, the aquifer system beneath and near the CCS. The proposed addition of the 14 MGD of UFA water will bring the salinity of the CCS to a level similar to seawater. This alone is a positive change in that there will no longer be a source of hypersaline water. *In addition, because of the "weight" of the water in the CCS will be reduced, there will be less of a pushing effect that drives saltwater westward in the groundwater system*. The water that does enter the groundwater system will be at a lower salinity than the resident water and will mix and decrease the overall salinity of the aquifer. The net effect is that the proposed addition will reduce the rate of saltwater migration.
>
> . . . [A]lthough there is a temporary increase in effective stage of 0.1 feet as the 14 MGD is added, this effective stage quickly begins to dissipate as the salinity of the CCS decreases. The net effect of the freshening is a decrease in hydraulic head of 0.26 feet within the deep 20 foot canals of the CCS and an increase of 0.04 feet in the shallow 3 foot canals.[115]

Thus, the "negative effects" that SACE claims FPL ignores do not actually exist.[116]

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[114] *Id.* at 23-24 (quoting Nuttle Report at 20).

[115] Initial Written Testimony of Florida Power & Light Company Witness Steve Scroggs, Jim Bolleter, and Pete Andersen on Contention 1, at 45-46 (A76) (Pete Andersen) (Nov. 10, 2015) (ML16015A372) (emphasis added).

[116] FPL notes that Intervenor Atlantic Civil, Inc. ("ACI") made a similar unsuccessful claim in a State of Florida Division of Administrative Hearings proceeding concerning FPL's 2014 request for FDEP authorization of three system improvement projects, including the construction and operation of up to six new production wells to withdraw 14 MGD of Upper Floridan Aquifer water for use in the Turkey Point CCS. The presiding Administrative Law Judge was not persuaded by this claim. *See Florida Power and Light Company Turkey Point Units 3-5 Modifications to Conditions of Certification*, State of Florida Administrative Hearings, Case No. 15-1559EPP, Recommended Order at ¶ 54 (July 25, 2016), *available at* https://www.doah.state.fl.us/ALJ) ("ACI contends the FPL proposal would worsen groundwater conditions because adding water to the CCS would increase the hydraulic 'head' in the CCS and exert a greater westward push on groundwaters in the Biscayne Aquifer, and a greater push on the existing hypersaline plume. However, the water in the CCS would be less dense after the UFA water is added, which Respondents' experts said would offset the increase in volume. ACI did not show how water density was accounted for in its own analyses.").

For the above reasons, SACE's allegations that FPL has overstated the benefits of its State and County-mandated mitigation measures and ignored the purported "negative effects" of such measures are factually groundless, contrary to 10 C.F.R. § 2.309(f)(1)(v), and fail to support the admission of Contention 1. They also invite the Board to delve impermissibly into issues that fall squarely within the jurisdiction of State and local regulators—an invitation it clearly should decline to accept.[117]

3. SACE's Claims Regarding the Category 2 Issues Identified in Contention 1 Lack Adequate Support and Fail to Raise a Genuine Material Dispute

As explained above, when stripped of its impermissible challenges to Category 1 issues, Contention 1 presents only three potentially litigable (*i.e.*, Category 2) issues, which concern the adequacy of the ER's discussion of: (1) tritium impacts to groundwater; (2) potential impacts of CCS operation on the threatened American crocodile and its associated habitat; and (3) the "cumulative" impacts of Turkey Point Units 3 and 4 operations during the SLR period. As shown below, SACE's arguments on each of these issues lack sufficient support and fail to establish a genuine material dispute with the ER, in contravention of 10 C.F.R. § 2.309(f)(1)(v) and (vi).

a. Claims Regarding Elevated Tritium Levels

Citing the expert report of Mr. Kirk Martin, SACE asserts 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, and that elevated tritium levels are also found in surface water samples taken in deeper portions of Biscayne Bay.[118] In his report, Mr. Martin asserts that groundwater tritium data confirm that groundwater impacted

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[117] *See Hydro Res., Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-98-16, 48 NRC 119, 121-22 (1998) (holding that the presiding officer should "narrowly construe" issues "to avoid where possible the litigation of issues that are the primary responsibility of other agencies").

[118] Petition at 10 (citing Martin Report at 1).

by the CCS has extended more than four miles inland from the CCS;[119] tritium data from three groundwater sampling points in Biscayne Bay show migration of the CCS contaminant plume to the east beneath Biscayne Bay, with tritium levels ranging between 800 and 3000 pCi/L for the deepest groundwater sampling points;[120] and water samples taken from specified sampling sites show measured tritium levels ranging as high as 4000 pCi/L and well in excess of background levels for the Bay waters.[121] He contends that these data provide "conclusive evidence of wastewater that originated within or beneath the CCS and demonstrate a direct hydrological connection between the CCS and the Bay.[122]

None of the claims and information presented by SACE and Mr. Martin establish a genuine material dispute with the ER, as required by 10 C.F.R. § 2.309(f)(1)(vi). FPL does not dispute that it has detected tritium in groundwater and surface water samples, and that hydrological connections exist between the CCS and certain groundwater and surface water bodies at Turkey Point.[123] The ER concludes, however, that "impacts from radionuclides [*i.e.*, tritium] to groundwater are SMALL and do not warrant additional mitigation measures beyond [Turkey Point's] existing groundwater monitoring program and administrative controls."[124] The ER explains the basis for this conclusion as follows:

> The cooling canals by design are in direct hydraulic connection to the underlying surficial aquifer and are authorized to discharge to groundwater by the state of Florida IWW permit and the associated federal NPDES permit which is issued under delegation to the state of Florida (Permit No. FL0001562). Groundwater beneath and surrounding the cooling canals has historically been very saline and

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[119] Martin Report at 2.

[120] *Id.* at 4 (citing Figures 5 and 6 of the Martin Report).

[121] Petition at 5 (citing Figure 7 of the Martin Report).

[122] *Id.*

[123] *See, e.g.*, ER at 3-114, 4-26.

[124] *Id.* at 4-27. Notably, since FPL implemented its current groundwater monitoring program in 2010, no plant-related gamma isotopes or hard-to-detect radionuclides have been detected. *Id.*

> is classified as *non-potable G-III groundwater* by the state of Florida (Chapter 62-520.410 FAC). As previously noted, *tritium is routinely released to the cooling canals and migrates into the groundwater in concentrations that do not present an environment or health risk either onsite or offsite*. Tritium concentrations in groundwater beneath and adjacent to the plant are monitored as required under the NRC license and for state of Florida regulatory agencies. Accordingly, releases of tritium to groundwater at the plant site, either intentionally or accidentally, are extensively monitored and do not present an environmental or health risk either onsite or offsite.[125]

The ER notes that tritium has been measured in the groundwater at a range from non-detect to 5,500 pCi/L—a range of values that bound those cited by SACE and its expert and which are well below the required reporting level of 30,000 pCi/L.[126]

SACE ignores the foregoing ER discussion and conclusions with regard to either the magnitude of tritium-related impacts or the need for additional mitigation measures. The groundwater and surface water tritium levels cited by Mr. Martin are well below the permissible regulatory and reporting levels identified above, and he provides no data indicating that tritium levels exceeding those limits have been detected in onsite groundwater or groundwater that may have migrated offsite, or in surface water. Notably, SACE does not claim that any tritium releases were above "permissible levels in the Commission's regulations," as would be necessary—as a matter of law—for the ER's impact conclusion to be anything other than SMALL.[127] And, contrary to Mr. Martin's suggestion, the site has not violated any applicable permit levels for tritium.[128] Significantly, SACE does not allege that tritium discharged into the CCS and subsequently detected in groundwater or surface water poses any risk to human health or to

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[125] *Id.* at 3-114 (emphasis added). EPA regulations set a maximum allowed concentration for each radionuclide in drinking water, including a maximum radioactivity concentration of 20,000 pCi/L for tritium. Tritium levels that are discharged into the CCS are below this 20,000 pCi/L tritium concentration. Since no drinking water pathway exists, a reporting value of 30,000 pCi/L is used. *See id.*

[126] *Id.*

[127] 10 C.F.R. pt. 51, subpt. A, tbl. B-1 n.3.

[128] *See* ER at 3-114, 4-25 to 4-27, 6-2 (Table 6.1-1).

aquatic resources (which, in any case, are Category 1 issues for which SACE has not requested a waiver).[129] Thus, SACE fails to establish any litigable dispute with regard to the Category 2 issue of radionuclides in groundwater.

b. Alleged CCS Impacts on the Federally Listed American Crocodile

The second Category 2 issue raised in Contention 1 concerns the "underestimated impacts" of the CCS on the American crocodile, a "federally listed" threatened species.[130] SACE claims that FPL fails to acknowledge that an alleged "steep decline" in the American crocodile population in the CCS "signals a loss of critical seagrass bed habitat for a threatened species caused by its own operation of the CCS."[131] It further accuses FPL of "blithely" asserting in the ER that "[t]he American crocodile population continues to remain in a much stronger position than before the Turkey Point CCS was established."[132] Finally, it suggests that FPL's representations to the U.S. Fish and Wildlife Service ("FWS") regarding the impacts of subsequent license renewal on the American crocodile are "absurd" because the crocodile's critical seagrass habitat will be destroyed by continued exposure to excessive levels of salt and nutrients during the SLR operating term.[133]

SACE's assertions regarding the American crocodile lack sufficient factual support and fail to establish a genuine material dispute with the ER, contrary to the requirements of 10 C.F.R. § 2.309(f)(1)(v) and (vi). The ER contains extensive discussion of the American crocodile and its habitat, and does not underestimate CCS impacts on the crocodile or understate the species'

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[129] *See* 10 C.F.R. pt. 51, subpt. A, app. B, tbl. B-1 (Human Health – Radiation exposures to the public); *id.* (Exposure of aquatic organisms to radionuclides). *See also* GEIS, vol. 1 at 4-140 to 4-146; *Turkey Point*, CLI-01-17, 54 NRC at 16-17; *Nuclear Mgmt. Co.* (Palisades Nuclear Plant), LBP-06-10, 63 NRC 314, 354-57 (2006).

[130] Petition at 19. The American crocodile was downlisted by FWS from federally endangered to threatened for the Florida DPS in 2007. *See* ER at 3-194.

[131] Petition at 19.

[132] *Id.* (quoting ER at 3-195).

[133] *Id.* at 20.

importance.[134] Further, there is nothing "blithe" or "absurd" about FPL's statement that creation of the CCS in the early 1970s proved beneficial to this threatened species. As the ER explains, the CCS, with its numerous canals and berms, supports a variety of plant and animal species, some of which are eaten by American crocodiles living in the CCS.[135] Adult American crocodiles were first observed in the CCS in 1976, and nesting was first documented on the cooling canal berms in 1978.[136] The FWS-designated critical habitat for American crocodiles includes most of the Turkey Point CCS and other adjacent canals and aquatic habitats west and south of the Turkey Point site.[137] As described in a 2006 Biological Opinion by the FWS, FPL's 5,900-acre CCS has become a particularly important nesting habitat for this species, and nesting activity has increased since it was first documented in 1978.[138] In fact, the Turkey Point facility is one of three nesting locations in the state of Florida.[139] The NRC's GEIS also recognizes this fact, noting that "[t]he cooling canals at the Turkey Point plant in Florida support a breeding population of the American crocodile (*Crocodylus acutus*)."[140] SACE ignores all of this information, as set forth in the ER and other relevant documents identified above.[141]

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134 *See* ER at 3-164, 3-167, 3-175 to 3-176, 3-194 to 3-196, 3-253 (Table 3.7-13), 4-39 to 4-40, 4-69 to 4-70 to 4-71. On August 8, 2018, FPL provided additional detailed information to the NRC regarding its American crocodile monitoring and management activities in response to NRC Staff Request for Additional Information ("RAI") No. SS-FWS-3. *See* Letter from William Maher, FPL, to NRC Document Control Desk (FPL Letter L-2018-136), "Turkey Point Units 3 and 4 Subsequent License Renewal Application – Environmental Report Requests for Additional Information (RAI) Responses," attachments 22 & 32 (Aug. 8, 2018) ("August 2018 RAI Responses").

135 ER at 3-164.

136 *Id.* As discussed further below, these occurrences prompted FPL to develop a crocodile management plan that focused on the creation and enhancement of habitat and long-term population monitoring.

137 *Id.* at 3-168.

138 *Id.* at 3-195.

139 *Id.*

140 GEIS, vol. 1 at 3-79. *See also id.* at 4-67 ("A potentially beneficial effect of the heated discharges at the Turkey Point plant in Florida has been the development of suitable habitat for the American crocodile.").

141 *See Shaw AREVA MOX Services, LLC* (Mixed Oxide Fuel Fabrication Facility), CLI-09-2, 69 NRC 55, 65 n.47 (2009) (noting petitioners' "ironclad obligation to . . . diligently search publicly available NRC or Applicant documents for information relevant to their [c]ontention.")

It is no exaggeration to say that Turkey Point has contributed significantly to the American crocodile's recovery. As noted in ER Section 3.7.8.1.4, the FWS "downlisted" the American crocodile from federally endangered to threatened for the Florida "distinct vertebrate population segment" ("DPS") in March 2007.[142] It is clear from the associated rulemaking that FWS viewed the Turkey Point CCS as a key factor in the "substantial improvement in the species' status."[143] For example, the final rule notes that Turkey Point "contains an extensive network of cooling canals (built in 1974) that provides good crocodile habitat in Biscayne Bay," and "[t]his property now supports the second largest breeding aggregation of crocodiles in Florida."[144] It also credits Turkey Point with helping to broaden the crocodile's nesting range.[145] FWS also cited FPL's development and implementation of a crocodile management plan, maintenance of the canals and crocodile habitat through activities like exotic vegetation control and planting of low-maintenance native vegetation, designation of nesting "sanctuaries" where access and maintenance activities are minimized, and conduct of "an extensive crocodile monitoring program since 1976."[146]

The ER presents an objective discussion of the status of the American crocodile at Turkey Point and the impacts of CCS operations on the species. As discussed therein, FPL conducts annual crocodile monitoring.[147] Table 3.7-13 (ER at 3-253) summarizes the number of nests observed and the number of hatchlings captured between 2000 and 2016. Successful nests from 2000 to 2016 have ranged from a low of 8 in 2016 to a high of 28 in 2008; hatchlings captured

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142 ER at 3-94.

143 Endangered and Threatened Wildlife and Plants; Reclassification of the American Crocodile Distinct Population Segment in Florida From Endangered to Threatened; Final Rule, 72 Fed. Reg. 13,027 (Mar. 20, 2007).

144 *Id.* at 13,035.

145 *Id.* at 13,038.

146 *Id.* at 13,032, 13,034-35, 13,037.

147 *See* ER at 3-195.

have ranged from 127 in 2015 to 548 in 2009. In this regard, the ER acknowledges that the number of successful nests and tagged hatchlings declined from previous years in 2015 (9 successful nests and 119 tagged hatchlings) and 2016 (8 successful nests and 127 hatchlings).[148] However, it further notes that FPL has been working with the FDEP and Miami-Dade County to reduce the average annual salinity in the CCS canals to 34 PSU.[149]

Those efforts (and other measures required by FPL's crocodile management plan) already are paying dividends, as evidenced by data collected as part of FPL's ongoing crocodile monitoring program. In an August 8, 2018 article titled "Turkey Point's canal berms ideal for crocodile clutches," *The Key West Citizen* reported that "the American crocodile enjoys a favorable habitat in the controversial cooling canals of Florida Power & Light's Turkey Point Nuclear Power Plant," and described Turkey Point as "an unlikely hero" in the case of the American crocodile's "rebounding population."[150] The article notes that Turkey Point biologist Mike Lloret "reported 194 crocodile hatchlings as of a week ago and expected to exceed 200 by the end of hatchling season, which generally runs June through August at the power plant."[151] It further states that FPL had recorded 14 nests so far this hatchling season.[152] These emerging data represent substantial increases in the number of hatchlings and nests observed relative to 2015 and 2016, as reported in the ER. Indeed, they fully support the statements in the ER that Turkey Point has bolstered the species' recovery since the construction of the CCS in the early-1970s.[153]

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148 *Id.* at 3-95.

149 *Id.*

150 "Turkey Point's canal berms ideal for crocodile clutches," *The Key West Citizen / KeyNews.com*, Aug. 8, 2018. https://keysnews.com/article/story/turkey-points-canal-berms-ideal-for-crocodile-clutches/.

151 *Id.*

152 *Id.*

153 The *Key West Citizen* article states that approximately 400 of the State of Florida's estimated 2,500 adult crocodiles live in the Turkey Point CCS canals.

SACE has ignored important information in the ER and provided no other information, including expert opinion, to suggest that the decline in American crocodile nest and hatchling numbers observed in 2015 and 2016 (as reported in the ER) indicate a long-term trend that will somehow be exacerbated by continued CCS operations and extend through the SLR period.[154] FPL's ongoing actions to reduce and manage salinity levels in the CCS, among other measures, are fully expected to support continued improvements in the American crocodile population within the CCS. SACE's claim that Turkey Point operation during the SLR period will somehow "destroy" the crocodile's habitat and lead to a "collapse" in its population is thus pure speculation.

Lastly, SACE also ignores the ER's discussion of FPL's existing crocodile management plan. That plan requires: (1) preservation and creation of crocodile habitat; (2) use of exclusion zones at known nest sites; (3) daytime and nighttime monitoring surveys to document nests in the CCS; (4) capture and tagging of hatchlings using microchip technologies; (5) relocation of hatchlings to low-salinity habitats to improve survival; and (6) recapture, monitoring, and release of individuals to assess growth and survival.[155] SACE does not challenge the adequacy of these protective measures or activities, or suggest that additional measures are necessary.

In conclusion, SACE has not met its burden under 10 C.F.R. § 2.309(f)(1) to provide sufficient factual and/or expert support for its claims and to establish a genuine dispute on a material issue of law or fact. It has not shown the need for a hearing on CCS impacts on the American crocodile, especially given the actions required by FPL's crocodile management plan,

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[154] Although SACE cites the expert report of Dr. James Fourqurean in its Petition, that report focuses on alleged contributions of phosphorous by CCS-affected groundwater to near-shore surface waters and alleged adverse impacts on seagrass beds or meadows offshore in Biscayne Bay. The Fourqurean report does not contain a single reference to the American crocodile, much less discuss the effects of the CCS on that species.

[155] ER at 3-175 to 3-176. Also, as noted in a recent RAI response, FPL's CCS berm maintenance plan includes procedures specific to crocodile sanctuary berm maintenance. August 2018 RAI Responses, attach. 32 at 1-2.

and the State-mandated CCS water quality mitigation measures being undertaken by FPL as described in the ER.

c. Alleged Deficiencies in FPL's Cumulative Impacts Analysis

The final Category 2 issue raised by SACE in Contention 1 concerns the cumulative impacts of continued Turkey Point operation during the SLR period. SACE asserts that FPL should examine the environmental impacts of its efforts to contain pollutants from the CCS, including the effectiveness and adverse effects of all mitigation measures—past, present and proposed.[156] It claims, in hyperbolic terms, that the cumulative impact analysis must "cover both space and time," encompassing "the massive South Florida landscape and waterscape of Biscayne Bay and its environs, the Biscayne Aquifer beneath the Bay and the land, and the micro-environment of the CCS."[157] And, in similarly exaggerated terms, SACE posits that the relevant period "stretches from the construction of the L-31E levee and canal in the 1960s, through 1971 licensing and the four decades of Turkey Point's operation, through the end of FPL's SLR term in 2053, and *well beyond*."[158] SACE asserts that FPL must consider the environmental implications of a purported "long string of failed mitigation measures intended to stem the adverse environmental impacts of Turkey Point's cooling water discharges on the fragile Biscayne Bay ecosystem, dating back to the court order for construction of the CCS in 1971."[159]

SACE's arguments miss the mark both factually and legally. First, SACE never identifies any factually-supported, material deficiencies in the ER's cumulative impacts discussion. Instead, it relies on a series of assertions that, for reasons explained in other portions of this Answer, are

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156 Petition at 25.

157 *Id.* at 27-28.

158 *Id.* at 28 (emphasis added).

159 *Id.* at 24.

conclusory and factually baseless. In short, contrary to SACE's claims on pages 25-27 of its Petition, FPL is in full compliance with its State and local permits; the CCS is not threatening drinking water supplies or other water uses; FPL's state-approved groundwater remediation efforts are progressing as planned; FPL is considering the interactions of environmental contaminants and other factors through its extensive environmental monitoring program and thermal efficiency and nutrient management plans; and the American crocodile population within the CCS is showing signs of improvement, not "collapse."[160]

Second, FPL's cumulative impacts discussion is fully consistent with applicable legal requirements, NRC guidance, and the analytical methodology described in the GEIS. An applicant's duty to consider cumulative impacts (also called "cumulative effects") is codified in Part 51, which states: "Applicants shall provide 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."[161] Part 51 does not define the term cumulative impact.[162] Rather, the NRC adopts the CEQ's definition, which focuses on the "incremental impact" of a proposed action.[163] Citing the CEQ definition, the D.C. Circuit has explained that a "meaningful cumulative impact analysis" must identify: (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions—past, present, and proposed, and reasonably foreseeable—that have had or are expected to have

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160 *Id.* at 25-27.

161 10 C.F.R. § 51.53(c)(3)(ii)(O).

162 *See generally* 10 C.F.R. §§ 51.4 & 51.14.

163 10 C.F.R. § 51.14(b). CEQ's regulations explain that a 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 (emphasis added).

impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.[164]

For purposes of NRC license renewal, the GEIS explains that the regions of influence "encompass the areas of affect and the distances at which impacts associated with license renewal may occur" (not, as SACE suggests, distant swaths of the "massive South Florida landscape" that are unaffected by Turkey Point operations).[165] The relevant time frame for future actions "is the 20-year license renewal term after the end of the current license term" (not "well beyond" the SLR period, as SACE again incorrectly suggests).[166] Past and present actions are appropriately accounted for in the "baseline assessment" presented in the affected environment sections for each resource area (*i.e.*, GEIS and ER Chapter 3).[167] The "environmental baseline" is "the site environmental conditions as they exist or are estimated to exist in the absence of the proposed action."[168] The "incremental impacts of license renewal" are addressed in the direct and indirect impact analyses (*i.e.*, GEIS and ER Chapter 4).[169] As summarized in the GEIS:

> Because existing conditions are at least partially the result of past construction and operations at the plants, the impacts of these past and ongoing impacts and how they have shaped the environment are summarized in [Chapter 3]. *Thus, it is this existing environment that comprises the environmental baseline against which potential environmental impacts of license renewal are evaluated.* The impacts of license renewal that are presented in [Chapter 4] are incremental to these baseline conditions, which include the effects of past and present actions at the plants.[170]

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164 *Grand Canyon Trust v. FAA*, 290 F.3d 339, 345 (D.C. Cir. 2002).

165 GEIS, vol. 1 at 4-244.

166 *Id.*

167 *Id.*

168 *Id.* at 7-4.

169 *Id.* at 4-244.

170 *Id.* at 3-1 (emphasis added).

Finally, the incremental impact analyses set forth in Chapter 4 are "carried forward to the cumulative impact analysis, which expands the analysis to consider *other* past, present, and reasonably foreseeable future actions."[171]

ER Chapter 3 provides the requisite environmental "baseline assessment."[172] The sections of particular relevance to the groundwater, surface water, and ecological resource issues raised in Contention 1 include: Section 3.6.1 (Water Resources), Section 3.6.1.4.5 (Compliance History), Section 3.6.2 (Groundwater Resources), 3.6.3.1 (Surface Water Use), 3.6.3.2 (Groundwater Use), 3.7.1 (Aquatic Communities), 3.7.2 (Terrestrial and Wetland Communities), Section 3.7.7.3 (Threatened and Endangered Species Evaluation and Management Plan), and Section 3.7.8 (Threatened, Endangered, and Protected Species, and Essential Fish Habitat).

Section 4.12 of the ER addresses the requirement in Section 51.53(c)(3)(ii)(O) to consider cumulative impacts for the 20-year SLR period.[173] It notes that ER Section 3.1.4 describes other current and anticipated projects at the Turkey Point site.[174] Section 4.12 also permissibly incorporates by reference[175] the cumulative impacts assessment in Chapter 7 of the NRC Staff's FEIS for the Turkey Point Units 6 and 7 combined license application:

> The NRC recently conducted a cumulative impacts assessment of the construction and operation of the proposed Turkey Point Units 6 and 7 in the EIS prepared for the COL for these proposed units. *This cumulative impacts assessment considered the operation of [Turkey Point] with the many past,*

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171 *Id.* (emphasis added).

172 *See id.* at 4-63 ("The affected environment sections for each resource area presented in Chapter 3 generally accounts for past and present actions.").

173 *See id.* at 1-5, 4-62 to 4-74.

174 *Id.* at 4-64. The other site projects include continued operation of Units 1 and 2 in synchronous condenser mode, continued operation of Unit 5 (a natural-gas combined-cycle steam-generating unit), and the possible construction and operation of Turkey Point Units 6 and 7 (new nuclear power plants). *Id.*

175 *See* 10 C.F.R. § 51.53(a) (noting that license renewal environmental reports "may incorporate by reference any information contained in a prior . . . final environmental document previously prepared by the NRC staff that relates to the . . . site."). *See also* 10 C.F.R. § 51, app. A.1(b) (adopting "[t]he techniques of tiering and incorporation by reference described respectively in 40 CFR 1502.20 and 1508.28 and 40 CFR 1502.21 of CEQ's NEPA regulations").

> *present, and future projects in the area.* The NRC developed a *comprehensive list of projects and activities within a 50-mile radius* and reviewed the potential for urban development as governed by state and local land use plans. This recent cumulative assessment is applicable to a cumulative impacts assessment for this SLRA for [Turkey Point] and is the primary resource for this cumulative assessment.[176]

Table 7-1 of the Turkey Point Units 6 & 7 FEIS lists the numerous past, present, and reasonably foreseeable projects and other actions considered in the NRC Staff's cumulative impacts analysis, their approximate locations relative to the Turkey Point site, and their statuses.[177] The individual projects are too numerous to list here. As indicated in Table 7-1, they fall into six general categories: Everglades Ecosystem Restoration and/or Comprehensive Everglades Restoration Plan Projects, Energy Projects, Mining Projects, Parks and Aquaculture Facilities, Transportation Projects, and Other Actions/Projects.[178]

It is evident from Table 7-1 and related discussion in the Turkey Point Units 6 & 7 FEIS (which exceeds 40 pages and is incorporated by reference in ER Section 4.12) that the Staff performed a comprehensive assessment of other projects within a large (50-mile radius) region that, in combination with Turkey Point SLR, could have cumulative environmental impacts. That assessment makes clear that the moderate cumulative impacts to surface water quality and aquatic ecosystems identified by the Staff are largely the result of historical land use and development activities within the region of interest that are unrelated to Turkey Point site operations (past, present, or future).[179] For example, the Staff concluded that moderate cumulative impacts on

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[176] ER at 4-64 (citing "Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 and 7," NUREG-2176 (Oct. 2016) ("Turkey Point Units 6 & 7 FEIS") (emphasis added). NUREG-2176 is available at https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr2176/.

[177] *See* Turkey Point Units 6 & 7 FEIS, vol. 2 at 7-3 to 7-8.

[178] *See id.*

[179] *See, e.g.*, *id.* at 7-29 ("Increased development and overpopulation, historic alterations to waterbodies for flood control and agriculture, subsequent destruction of wetlands, introduction of exotics, and habitat degradation have adversely affected aquatic resources in southern Florida.").

surface water quality "result from historical point and nonpoint-source discharges that have affected the water quality of streams and rivers near the Turkey Point site."[180] It further noted that cumulative impacts on aquatic resources in the geographic area of interest would be moderate "primarily based on historic alterations to aquatic habitats and impacts on species within those habitats."[181] The Staff concluded that the cumulative impacts to groundwater quality would be small.[182] Notably, in discussing groundwater quality impacts, the Staff stated that "[a]dding additional brackish water from the Upper Floridan aquifer would likely reduce the temperature, salinity, and concentration of other constituents in the [CCS] water; which would result in lower concentrations in water seeping into the underlying aquifer."[183]

Turning back to the Turkey Point SLR, and as germane to Contention 1, ER Sections 4.12.4.1, 4.12.4.2, and 4.12.5 analyze cumulative impacts to surface water, groundwater, and ecological resources, respectively, drawing from the relevant sections of the cumulative impacts assessment contained in Chapter 7 of the Turkey Point Units 6 & 7 FEIS. Consistent with the GEIS and NRC guidance, these ER sections incorporate the reasonable assumption that because Turkey Point activities are regulated and monitored through permits (*e.g.*, NPDES/IWW) issued by State and federal authorities, cumulative impacts are managed as long as these activities are performed in compliance with their respective permits.[184] Table 2 below summarizes key findings and conclusions stemming from FPL's cumulative impact analyses in Section 4.12 of the ER as they relate to surface water, groundwater, terrestrial, and aquatic resources.

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[180] *Id.* at 7-47; *see also id.* at 7-14. The Staff further noted that portions of the estuary and streams along the southeast Atlantic coast to Biscayne Bay have been listed as impaired waterbodies because of the presence of copper, fecal coliforms, mercury, and nutrients that are unrelated to Turkey Point operations. *See id.*

[181] *Id.* at 7-47.

[182] *See id.* at 7-18.

[183] *Id.* at 7-16

[184] ER at 4-63.

Table 2. Summary of Key Cumulative Impact Findings in ER as Relevant to Contention 1

Affected Resource	Key ER Findings/Conclusions Regarding Cumulative Impacts on Resource
Surface Water	• The cooling canals' effect on surface water through the groundwater interface was studied in sampling events in 2010-2017. The results indicate that the groundwater pathway is having no discernible influence on Biscayne Bay. [ER at 4-68] • The NRC's FEIS for proposed Turkey Point Units 6 and 7 analyzed cumulative impacts to surface water quality in surface waters adjacent to the Turkey Point site. It included the existing and proposed Turkey Point units as contributing projects, and considered historical point and non-point-source discharges that have affected the water quality of streams and rivers near Turkey Point. The FEIS determined that cumulative impacts would be MODERATE, with the proposed Units 6 and 7 contributions being of small significance. Given that Turkey Point Units 3 and 4 do not discharge to surface waters and have stormwater controls in place, they likewise would have a contribution of small significance within the MODERATE cumulative impact. [ER at 4-68]
Groundwater	• The Turkey Point Units 6 and 7 FEIS analyzed cumulative impacts to groundwater considering the groundwater withdrawals and injections of Turkey Point and the other Turkey Point facilities and those from other projects and activities in the surrounding area (e.g., impacts of enhanced recharge to the Biscayne Aquifer from activities related to CERP and offsite wastewater-injection operations). The NRC determined the cumulative impacts to be SMALL given the hydrologic characteristics of the affected aquifers, fate and transport processes, and the monitoring and management programs required by the State. [ER at 4-68] • Given FPL's continued compliance with its permits for groundwater withdrawals and injections, the FDEP Consent Order for freshening of the cooling canals, and the Consent Agreement with Miami-Dade County for remediation of the hypersaline plume, cumulative impacts would be managed, and any cumulative impacts from the continued operation of Turkey Point during the SLR period would be SMALL. [ER at 4-69.]
Terrestrial	• FPL conducted pre-and post-uprate studies during the period 2010-2017 to determine the influence of the cooling canals on the surrounding areas through migration of groundwater. The results indicate that the cooling canals do not have any ecological impact on the surrounding areas. [ER at 4-69] • The cooling canals are the home to the threatened American crocodile. As discussed in Section 4.6.6.4, the cooling canals provide habitat for the species, and FPL has a management plan in place to support the population and minimize adverse impacts. [ER at 4-69 to 4-70] • Given that continued operation of Turkey Point Units 3 and 4 does not include the construction of new facilities and that ongoing remediation activities associated with the cooling canals would be conducted in compliance with state and local requirements and monitoring would be conducted to ensure its effectiveness, the contribution to the overall cumulative impacts to terrestrial habitats including wetlands and terrestrial species communities would be small. [ER at 4-70]
Aquatic	• FPL has conducted pre- and post-uprate studies and continued monitoring to determine any influence on the surrounding surface and groundwater due to seepage from the unlined cooling canals. The studies' data support the conclusion that the cooling canals do not have any ecological impact on the surrounding areas, and there

Affected Resource	Key ER Findings/Conclusions Regarding Cumulative Impacts on Resource
	is no evidence of cooling canal water in the surrounding marsh and mangroves areas from a groundwater pathway. [ER at 4-71] • The NRC's Turkey Point Units 6 and 7 FEIS includes a cumulative impact assessment for affected aquatic ecological communities. The FEIS determined the cumulative impacts to be MODERATE, primarily based on past activities that altered the hydrology of the region. It also considered the status of existing and pending restoration CERP activities, continued urbanization in southern Florida, and the magnitude of hydrological alterations as a result of climate change. The FEIS concludes that the proposed and existing Turkey Point units' contribution would be SMALL to the cumulative impacts. [ER at 4-71] • Because FPL will continue to manage the cooling canals in compliance with its IWW/NPDES permit, continue to comply with the Administrative Order regarding improving water quality in the canals, and continue to implement its American crocodile management plan, the continued contribution of Turkey Point Units 3 and 4 to cumulative impacts during the SLR period would be SMALL. [ER at 4-71]

In view of the above, the ER provides exactly the type of information and analyses required by NEPA and NRC regulations for a cumulative impacts assessment. Moreover, it addresses the concerns raised by SACE in Contention 1 to the full and reasonable extent those concerns do not: (1) exceed the proper scope of a cumulative impacts analysis, (2) rely on factual misrepresentations and conclusory assertions, or (3) seek to modify the governing statutory and regulatory requirements via means of the proposed contention. In short, based on the extensive information contained in the ER and the NRC's Turkey Point Units 6 & 7 FEIS, FPL considered the cumulative impacts of extended Turkey Point operation in conjunction with the numerous other past, present, and future projects in the site vicinity. Accordingly, SACE's claims regarding cumulative impacts are factually deficient and fail to raise a genuine material dispute with the ER.

* * *

In summary, Contention 1 is inadmissible because it raises issues outside the scope of this license renewal proceeding, lacks adequate support, and fails to establish a genuine material dispute, contrary to the requirements of 10 C.F.R. § 2.309(f)(1)(iii), (v), and (vi).

B. Contention 2 Is Not Admissible Under § 2.309(f)(1) Because It Raises Issues Outside the Scope of the Proceeding, Lacks Adequate Support, and Fails to Establish a Genuine Material Dispute With the ER

Contention 2 alleges that the ER contravenes NEPA and Part 51 because it does not consider the purportedly "reasonable alternative" of installing mechanical draft cooling towers.[185] SACE contends that the cooling tower alternative is not only "feasible and cost-effective," but also "superior to FPL's preferred alternative of continuing to rely on the CCS."[186] It also claims that mechanical draft cooling towers with a zero liquid discharge ("ZLD") system represent the best available technology for eliminating surface water thermal discharge impacts and hypersalinity impacts on the aquifer underlying the CCS."[187] As shown below, SACE's claims raise issues outside the scope of this proceeding, lack sufficient legal and factual bases, and fail to establish a genuine dispute on a material issue of law or fact.

1. Contention 2 Contravenes NRC License Renewal Requirements and NEPA's "Rule of Reason" as They Relate to Analysis of Mitigation Measures

The duty to consider mitigation measures is not explicitly stated in NEPA.[188] However, the Supreme Court has interpreted NEPA to include an implicit duty to discuss mitigation measures *only to the extent necessary* to provide a complete picture of the impacts of the project.[189] That duty is "tempered by a practical rule of reason."[190] Thus, in *Methow Valley*—the seminal Supreme Court case on this subject—the Court held that mitigation measures only need to be "discussed in sufficient detail to ensure that environmental consequences have been fairly

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185 Petition at 29.

186 *Id.*

187 *Id.* at 31.

188 *See* 42 U.S.C. § 4321 *et seq*.

189 *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 353, 359 (1989).

190 *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), CLI-16-7, 83 NRC 293, 326 (2016) (citation omitted).

evaluated."[191] Importantly, the Court distinguished that standard from "a substantive requirement that a complete mitigation plan be actually formulated and adopted."[192]

NRC regulations at 10 C.F.R. § 51.45(c) require all environmental reports to analyze "alternatives available for reducing or avoiding adverse environmental effects." The specific regulation applicable to license renewal applications is 10 C.F.R. § 51.53(c)(3)(iii), which requires the ER to "contain a consideration of alternatives for reducing adverse impacts, as required by § 51.45(c), for all *Category 2* license renewal issues in appendix B to subpart A of [Part 51]." (Emphasis added.) The Commission has made clear that "an issue cannot be identified as Category 1 if the NRC has not made a generic determination that additional mitigation measures are unlikely to be warranted, *given 'mitigation practices' already in place*."[193]

Here, SACE specifically asserts that FPL must consider the substitution of mechanical draft cooling towers for the CCS as a "mitigation alternative," and for the express purpose of "eliminat[ing] the adverse impacts of continuing to operate the CCS that are set forth in Contention 1."[194] As discussed above, the impacts of concern to SACE are *non-radiological impacts* of CCS operation on groundwater quality, surface water quality, and aquatic resources—*all* of which are Category 1 issues that, by definition, do not require further site-specific evaluation in a license renewal application.[195] Thus, by attempting to challenge the ER on the ground that it

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[191] *Methow Valley*, 490 U.S. at 352. Thus, where there are no significant impacts on the environment, NEPA does not impose a duty to discuss mitigation measures for such impacts. *See, e.g.*, *Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd*, 535 U.S. 1 (2002); *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1526 (10th Cir. 1992).

[192] *Methow Valley*, 490 U.S. at 352. There is no substantive requirement that a complete mitigation plan be actually formulated, finalized, adopted, or legally enforceable. *See* Daniel R. Mandelker, NEPA LAW AND LITIGATION, 2D § 10:59 (2018); *Methow Valley*, 490 U.S. 332 (rejecting the 9th Circuit's decision below, which sought to impose such a requirement).

[193] *Pilgrim*, CLI-10-14, 71 NRC at 471-72 (quoting Part 51 Rulemaking, 61 Fed. Reg. at 28,474) (emphasis added).

[194] Petition at 29, 32.

[195] This fact is further evidenced by SACE's express references in Contention 2 to "surface water thermal discharge impacts and hypersalinity impacts on the aquifer underlying the CCS." Petition at 31.

excludes consideration of mechanical draft cooling alternatives as a mitigation measure, SACE seeks to litigate an issue that is outside the proper scope of this proceeding.[196]

SACE also fails to show that an evaluation of mechanical draft cooling towers is necessary to ensure that the environmental consequences of Turkey Point SLR have been fairly evaluated. As explained in FPL's response to Contention 1, the ER thoroughly evaluates the direct, indirect, and cumulative environmental impacts of continued plant (including CCS) operation during the SLR period. That evaluation includes extensive discussion of the numerous FPL mitigation actions that state and local agencies have required via the Consent Order and Consent Agreement discussed above. As such, FPL has provided "'sufficient detail' . . . on mitigation measures to show a fair [applicant] evaluation of mitigation and environmental consequences, and that [it] has not 'ignored or minimized pertinent environmental effects.'"[197]

According to the Commission, "[u]nder basic NEPA principles, it is reasonable to tailor the degree of mitigation analysis to the significance of the impact to be mitigated."[198] Thus, where license renewal impacts are expected to be "SMALL," the NRC's lowest impact category,[199] the duty to analyze mitigation measures also is commensurately small.[200] SACE's claim that FPL should consider an entirely different cooling system technology (*i.e.*, replacement of the CCS with

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196 As discussed in Section IV.A.1.b, *supra*, SACE has not sought a Commission waiver of any Category 1 finding pursuant to 10 C.F.R. § 2.335(b).

197 *Powertech USA, Inc.* (Dewey-Burdock In Situ Uranium Recovery Facility), LBP-15-16, 81 NRC 618, 688 (2015) (quoting *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 431-32 (2003)).

198 *Indian Point*, CLI-16-7, 83 NRC at 323 n.156.

199 *See* 10 C.F.R. pt. 51, subpt. A, app. B, tbl. B-1 n.3.

200 *See Indian Point*, CLI-16-7, 83 NRC at 323 n.156; NUREG-1555, Standard Review Plans for Environmental Reviews for Nuclear Power Plants, Supp. 1, Rev. 1 at 9 (June 2013) (ML13106A246) ("The consideration of mitigation measures should be in proportion to the potential adverse impact.").

cooling towers) is not commensurate with the CCS' small environmental impacts, which, in any event, are being appropriately addressed through State and County-mandated mitigation actions.

With regard to SACE's unsubstantiated claim that mechanical cooling towers are "superior" to the CCS, NEPA does not compel agencies (or applicants) to select only "the most environmentally benign option,"[201] or to "guarantee that federally approved projects will have no adverse impacts."[202] Notably, in a recent case involving a Turkey Point CCS-related license amendment, the Commission (in CLI-16-18) denied review of the Licensing Board's initial decision (LBP-16-8), holding that NEPA does not require the NRC "to determine the best mitigation measures for a potential environmental harm."[203]

Finally, SACE provides insufficient factual support for its claim that mechanical draft cooling towers are in fact environmentally "superior."[204] For example, SACE does not explain how the installation of mechanical draft cooling towers and the assumed use of reclaimed sanitary wastewater would address its concerns relative to the Category 2 issues of tritium in groundwater or impacts to the American crocodile (which, in any case, are factually unfounded). The use of cooling towers would not "eliminate wastewater discharges," including discharges containing tritium. SACE also ignores the fact that constructing mechanical draft cooling towers itself would entail certain adverse environmental impacts, including the loss and disturbance of habitat from

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201 *Powertech*, LBP-15-16, 81 NRC at 688 (quoting *La. Energy Servs., L.P.* (Claiborne Enrichment Ctr.), CLI-98-3, 47 NRC 77, 88 (1998)).

202 *Id.* at 687-88 (quoting *Hydro Res., Inc.* (P.O. Box 777, Crownpoint, N.M. 87313), CLI-06-29, 64 NRC 417, 429 (2006)).

203 *Fla. Power & Light Co.* (Turkey Point Nuclear Generating Units 3 and 4), CLI-16-18, 84 NRC 167, 173 (2016).

204 Petition at 29. For reasons explained in a report submitted by FPL to the NRC as an enclosure to an RAI response, FPL does not view the installation of mechanical draft cooling towers as a "feasible and cost-effective" alternative to the CCS. *See* August 2018 RAI Responses, attach. 19, encl. 1.

the construction of cooling towers.[205] Indeed, SACE makes no claim in its Petition that cooling towers would benefit the American crocodile population in the CCS.

2. The NRC Lacks Jurisdiction Over Thermal Discharge and Water Quality Permitting Matters, and Thus It Is Appropriate for FPL and the NRC to Rely on Mitigation Measures Required and Enforced by State and Local Agencies

As noted above, the GEIS recognizes that the "NRC's authority does not extend to requiring operating nuclear plants to replace or modify their cooling systems to reduce impacts."[206] That authority resides with the EPA or the delegated State, which regulates thermal discharges through NPDES permits and Clean Water Act regulations.[207] Thus, the GEIS further emphasizes that "[t]he NRC will not make a decision or any recommendations on the basis of information presented in this GEIS regarding changes to nuclear power plant cooling systems . . . to mitigate adverse impacts under the jurisdiction of State or other Federal agencies."[208] These GEIS statements are fully consistent with the Commission's holding in CLI-07-16 that CWA Section 511(c)(2) precludes the NRC from second-guessing NPDES permitting determinations.[209] The *Indian Point* license renewal Board aptly summarized the law on this point as follows:

> [I]n accordance with CWA § 511(c)(2), as implemented by the [December 31, 1975] Memorandum of Understanding between the agencies, the NRC is prohibited from determining whether nuclear facilities are in compliance with CWA limitations, assessing discharge limitations, *or imposing additional alternatives to further minimize impacts on aquatic ecology that are subject to the CWA*[.] [T]he NRC has promulgated regulations, specifically 10 C.F.R. § 51.53(c)(3)(ii)(B), to implement these specific CWA requirements that help assure that the Commission

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[205] It warrants mention that ER Sections 7.0 and 8.0 discuss the no-action alternative (*i.e.*, no further renewal of the Turkey Point Units 3 and 4 licenses), and indicate that the no-action alternative would result in replacement power sources). In that context, the ER considers the impacts of using mechanical draft cooling towers in connection with the new nuclear and natural gas-fired combined cycle generation alternatives. Thus, as a practical matter, treating mechanical draft cooling towers as a separate design alternative to the CCS would not enhance the ER's assessment of potential adverse environmental impacts.

[206] GEIS, vol. 2, app. A at A-220.

[207] *Id.* at A-90 (emphasis added).

[208] GEIS, vol. 1 at 1-9.

[209] *See Vt. Yankee*, CLI-07-16, 65 NRC at 377 (citations omitted). *Indian Point*, LBP-08-13, 68 NRC at 155-56.

> does not second-guess the conclusions in CWA-equivalent state permits, or impose its own effluent limitations—thermal or otherwise.[210]

Significantly, the FDEP, the agency responsible for issuing FPL's NPDES/IWW permit, imposing CCS-related mitigation measures, and overseeing FPL's compliance with those requirements, has *not* directed FPL to replace the CCS with mechanical draft cooling towers or identified cooling towers as its preferred alternative for purposes of compliance with CWA Section 316(b). As such, this case is readily distinguished from the Indian Point and Oyster Creek license renewal proceedings, in which the NRC Staff discussed closed-cycle cooling (*i.e.*, cooling towers) as an alternative to the once-through cooling systems used at those plants. In both cases, as part of the state NPDES permitting process under CWA Section 316(b), the relevant state regulatory agency—the New York State Department of Environmental Conservation ("NYSDEC") and the New Jersey Department of Environmental Protection ("NJDEP")—had identified construction and operation of a closed-cycle cooling system at the site "as its preferred alternative to meet current national performance standards for impingement and entrainment losses."[211] Moreover, in the Indian Point and Oyster Creek license renewal supplemental EISs, the NRC Staff found the potential for moderate impingement and entrainment impacts due to the use of once-though cooling systems at those plants.[212] As discussed in ER Section 4.6.1, potential

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210 *Indian Point*, LBP-08-13, 68 NRC at 155-56 (citing Second Memorandum of Understanding and Policy Statement Regarding Implementation of Certain NRC and EPA Responsibilities, 40 Fed. Reg. 60,115 (Dec. 31, 1975)) (emphasis added).

211 *See* "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 38 Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3," NUREG-1437, supp. 38, vol. 1 at 8-3 (Dec. 2010) (ML103350405); *see also id.* at 8-1 to 8-2 ("As in the draft SEIS, the NRC staff considered an alternative to the existing IP2 and IP3 cooling water systems because the [NYSDEC] identified closed-cycle cooling (*e.g.*, cooling towers) as the best technology available (BTA) to reduce fish mortality in the draft New York State Pollutant Discharge Elimination System (SPDES) discharge permit."); Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 28 Regarding Oyster Creek Nuclear Generating Station," NUREG-1437, supp. 28, vol. 1 at 8-3 (Dec. 2010) (ML070100234); *see also id.* at 8-26 ("The NJDEP identified construction and operation of a closed-cycle cooling system (Section 8.1.1) as its preferred alternative to demonstrate compliance with Section 316(b) regulations.").

212 *See* NUREG-1437, supp. 38, vol. 1 at 4-70; NUREG-1437, supp. 28, vol. 1 at 4-60.

impacts due to impingement and entrainment of aquatic organisms like fish and shellfish at Turkey Point are limited to the CCS canals (*i.e.*, there are no impacts from impingement on fish and shellfish of Biscayne Bay, Card Sound, or other waters) and have been determined to be small, such that further mitigation is not warranted.[213]

These facts, coupled with the legal principles and precedent discussed above, severely undermine SACE's claim that the ER must consider mechanical draft cooling towers as a "mitigation alternative." Indeed, in CLI-07-16, the Commission conveyed its expectation that in future cases involving similar petitioner claims—as here—its adjudicatory boards would defer to the agencies that issued the permits for the cooling systems in question.[214] Moreover, in CLI-16-18, the Commission found that there is "[no] reason, for purposes of [] NEPA review . . . to doubt that FPL will comply with environmental conditions required by State and local authorities" given ongoing oversight by those authorities.[215] Accordingly, there is no legal or factual basis for SACE's claim that the ER improperly omits discussion of draft mechanical cooling towers as a mitigation alternative.

* * *

In summary, Contention 2 is inadmissible because it raises issues outside the scope of this license renewal proceeding, lacks sufficient factual and legal support, and fails to establish a genuine material dispute, contrary to the requirements of 10 C.F.R. § 2.309(f)(1)(iii), (v), and (vi).

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213 *See* ER at 4-30 to 4-32.

214 *Vt. Yankee*, CLI-07-16, 65 NRC at 389 (citing *Pub. Serv. Co. of N.H.* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 28 n.42 (1978)); *see also Indian Point*, LBP-08-13, 68 NRC at 156.

215 *Turkey Point*, CLI-16-18, 84 NRC at 174-75 n.38. *See also id.* at 174 ("[Intervenor] has not identified any legal error in the Board's decision not to impose mitigation measures on FPL or direct other 'substantive' actions related to water quality or saltwater migration.").

V. CONCLUSION

For the foregoing reasons, Petitioner has not submitted any admissible contention in this Turkey Point SLR proceeding. Accordingly, the Board should deny the Petition in its entirety.

Respectfully submitted,

Executed in Accord with 10 C.F.R. § 2.304(d)

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Dated in Washington, D.C.
this 27th day of August 2018

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket Nos. 50-250-SLR and 50-251-SLR
FLORIDA POWER & LIGHT COMPANY	)	ASLBP No. 18-957-01-SLR-BD01
(Turkey Point Nuclear Generating Units 3 and 4)	)	August 27, 2018

CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R. § 2.305, I certify that, on this date, copies of the foregoing "Applicant's Answer Opposing Southern Alliance for Clean Energy's Request for Hearing and Petition to Intervene" and Attachment 1 thereto were served upon the following persons by Electronic Information Exchange (the NRC's E-Filing System) and by electronic mail as indicated by an asterisk (*), in the above-captioned docket.

U.S. Nuclear Regulatory Commission
Office of the Secretary of the Commission

U.S. Nuclear Regulatory Commission
Atomic Safety and Licensing Board Panel
E. Roy Hawkens, Chairman
Sue Abreu, Administrative Judge
Michael F. Kennedy, Administrative Judge

U.S. Nuclear Regulatory Commission
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