

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of)	
Florida Power and Light Company)	Docket Nos. 50-250/251-SLR
Turkey Point Units 3 and 4)	
)	

**SOUTHERN ALLIANCE FOR CLEAN ENERGY’S REPLY
TO OPPOSITIONS BY FLORIDA POWER & LIGHT AND NRC STAFF
TO SACE’S HEARING REQUEST**

I. INTRODUCTION

Pursuant to 10 C.F.R. §§ 2.309(i) and the Atomic Safety and Licensing Board’s order of August 29, 2018, Southern Alliance for Clean Energy (“SACE”) hereby replies to oppositions by Florida Power & Light (“FPL”) and the U.S. Nuclear Regulatory Commission (“NRC”) Staff to SACE’s Hearing Request and Petition to Intervene (Aug. 1, 2018) (“Hearing Request”).

Applicant’s Answer Opposing Southern Alliance for Clean Energy’s Request for Hearing and Petition to Intervene (Aug. 27, 2018) (“FPL Answer”); NRC Staff’s Corrected Response to Petitions to Intervene and Requests for Hearing Filed by (1) Friends of the Earth, Natural Resources Defense Council and Miami Waterkeeper, and (2) Southern Alliance for Clean Energy (Aug. 27, 2017) (“NRC Staff Answer”).

Neither FPL nor the Staff opposes SACE’s standing to participate in this proceeding. And the NRC Staff agrees that parts of SACE’s two contentions are admissible (Contention 1 relating to the environmental impacts of the Cooling Canal System (“CCS”) on the American crocodile and Contention 2 with respect to FPL’s failure to consider the alternative of mechanical cooling towers). NRC Staff Response at 59-60, 68-69. FPL opposes the admissibility of SACE’s contentions in their entirety.

FPL's and the Staff's arguments against admissibility of Contentions 1 and 2 are without merit, and therefore the contentions should be admitted.

II. DISCUSSION: CONTENTION 1

Contention 1 asserts as follows:

FPL's Environmental Report for Turkey Point Units 3 and 4 violates the National Environmental Policy Act ("NEPA") and NRC implementing regulation 10 C.F.R. § 51.53(c) by underestimating, or at times ignoring, the environmental impacts to the surrounding water resources by continuing to use the Cooling Canal System ("CCS") for cooling of Turkey Point Units 3 and 4. In particular, the Environmental Report fails to provide an adequate analysis of the environmental impacts of the CCS on the chemistry of groundwater, surface water and its aquatic life, and the CCS' own ecosystem. These adverse environmental impacts include the migration of a hypersaline plume that has developed in the Biscayne Aquifer beneath the CCS and now extends for miles in all directions. Contaminants in the plume and the groundwater, generated by the Turkey Point plant, include phosphorous, ammonia, TKN, total nitrogen, radioactive tritium, and chlorophyll *a*. The areas directly affected by these pollutants include the underlying Biscayne Aquifer and its protected G-II groundwater, surface waters of Biscayne Bay and Card Sound, and the L-31E Canal. Directly affected areas also include the CCS' seagrass ecosystem, which provides habitat for the federally threatened American crocodile. And indirectly affected areas include the Greater Everglades, which may be impacted by withdrawal of surface waters intended for use in Everglades restoration, for the purpose of reducing temperatures or salinity in the CCS.

FPL's Environmental Report also violates NEPA by overestimating the effectiveness of its proposed mitigation measures and failing to acknowledge how those mitigation measures will interact and undermine each other. For instance, FPL proposes to pump lower salinity water from the Floridan aquifer into the CCS to "freshen" it and thereby meet a required salinity limit of 34 psu ("practical salinity units"). Environmental Report at 3-94 – 3-95. FPL also proposes to extract contaminated water out of the underlying aquifer for purposes of reducing the hypersaline plume emitted by the CCS. But the addition of water into the CCS will increase the driving head of the hypersaline plume, thereby driving it downward into the aquifer and exacerbating the contamination of groundwater. In short, by flushing salt out of the CCS, FPL will drive the plume deeper into the aquifer, increasing the threat to the drinking water supply and Biscayne Bay. And the proposed extraction of water from the aquifer for purposes of reducing and removing the hypersaline plume is unlikely to have any significant or lasting positive effect.

Finally, FPL ignores or underestimates the cumulative impacts of past and future operations of the CCS. A cumulative impacts analysis is essential to evaluate the effects and interaction of the many water management measures that FPL and others have undertaken or proposed to mitigate the effects of Turkey Point's cooling system on the environment. NEPA requires FPL to undertake a broad and rigorous analysis of the

cumulative effects of these mitigation strategies, comparing them and evaluating their interactions and net results. FPL should also examine how the mitigation strategies for Turkey Point interact with other environmental programs in the region, such as the Central Everglades Restoration Program (“CERP”). FPL has yet to undertake such an analysis, and therefore its Environmental Report fails to satisfy NEPA.

As a result of the significant defects in FPL’s Environmental Report, FPL’s conclusion that the environmental impacts of continuing to operate the CCS during the SLR term will be “small” must be rejected as arbitrary and unsupported, and thereby inadequate to satisfy NEPA.

Hearing Request at 6-8.

A. 10 C.F.R. § 51.53(c)(3) Does Not Apply to FPL’s SLR Application.

In opposing Contention 1, both FPL and the Staff rely heavily on the legal argument that Contention 1 is inadmissible because it “largely contests certain ‘Category 1’ environmental issues discussed in the NRC’s 2013 Generic Environmental Impact Statement for license renewal.” FPL Response at 2. *See also* NRC Staff Answer at 62. According to FPL, Category 1 issues “are not subject to challenge in this adjudicatory proceeding” because they are “codified” in 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1 (“Table B-1”). *Id.*¹

FPL and the Staff have no legal basis for their claim. As SACE points out in its Hearing Request, the plain language of 10 C.F.R. § 51.53(c)(3) allows only “applicants seeking an initial renewed license” to apply for license renewal under § 51.53(c)(3) and thereby rely on the Category 1 designations of Table B-1. Hearing Request at 5.² There can be no doubt that the plain meaning of the word “initial” is entirely different from the plain meaning of the word “subsequent.” By itself, the plain language of § 51.53(c)(3) is dispositive. *Long Island Lighting*

¹ According to FPL, the “only” issues raised by Contention 1 that fall into “Category 2” of Table B-1, thus rendering them litigable, are (1) radionuclides released to groundwater, (2) potential impacts on the American crocodile, and (3) cumulative impacts. FPL Answer at 12.

² FPL therefore is also incorrect in accusing SACE of failing to “even mention, much less dispute, the Category 1 and Category 2 applicability determinations made by FPL in Chapter 4 of the [Environmental Report].” FPL Answer at 10.

Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-900, 28 NRC 275, 288 (1988) (citing *Abourezk v. Reagan*, 785 F.2d 1043, 1053 (D.C. Cir. 1986, *aff'd*, 108 S.Ct. 252 (1987)); *GUARD v. NRC*, 753 F.2d 1144, 1146 (D.C. Cir. 1985) (interpretation of a regulation “may not conflict with the plain meaning of the wording used in that regulation.”)).

Moreover, even assuming for purposes of argument that there could be any doubt about the meaning of the phrase “initial renewed license,” the rulemaking history of 10 C.F.R. § 51.53(c)(3) and Table B-1 supports a plain language reading of § 51.53(c)(3) that it is not available to subsequent license renewal applicants. *Long Island Lighting Co.*, 28 NRC at 288 (“administrative history and other available guidance may be consulted for background information and the resolution of ambiguities in a regulation’s language”). The preamble to the proposed versions of 10 C.F.R. § 51.53(c)(3) and Table B-1 explicitly states that “the part 51 amendments apply to one renewal of the initial license for up to 20 years beyond the expiration of the initial license.” Proposed Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 56 Fed. Reg. 47,016, 47,017 (Sept. 17, 1991). No change to that representation is made in the final rule. Final rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. 28,467 (June 5, 1996) (Final Rule”).

Furthermore, consistent with the plain language of § 51.53(c)(3) and the preamble to the 1991 proposed rule, the 1996 License Renewal GEIS, prepared in support of § 51.53(c)(3) and Table B-1, describes the “proposed action” addressed by the GEIS as allowing nuclear power plants to operate “for a maximum of 20 years past the terms of their *original* 40-year operating licenses.” *Id.* at 2-28 – 2-29 (emphasis added). Thus, the 1996 License Renewal GEIS -- on

which the NRC relied for its Table B-1 findings -- confirms that the Commission did not intend to expand the scope of those findings beyond initial license renewal applications.³

The NRC Staff acknowledges both the plain language of 10 C.F.R. § 51.53(c)(3) and its regulatory history. NRC Staff's Answer at 20 n.76. Nevertheless, it asks the Atomic Safety and Licensing Board ("ASLB") to disregard the clear regulatory limit on the applicability of 10 C.F.R. § 51.53(c)(3) and Table B-1, on the ground that "the Commission has determined that the existing license renewal safety and environmental regulatory framework applies to subsequent license renewal, and no new rulemaking for SLR is needed." NRC Staff Answer at 20 n.76. But the Staff cites only two Commission-level documents that relate to the environmental review of

³ The 1996 Final Rule does refer to "additional" license renewal terms, in one specific context: environmental findings regarding offsite radiological impacts of the uranium fuel cycle. As stated in Table B-1:

The 100 year environmental dose commitment to the U.S. population from the fuel cycle, high level waste and spent fuel disposal is calculated to be about 14,800 person rem, or 12 cancer fatalities, for each additional 20 year power reactor operating term.

61 Fed. Reg. at 28,494. But the purpose of this finding is to incorporate the NRC's previous 100-year environmental analysis for 10 C.F.R. § 51.51, Table S-3, not to suggest that the entire scope of the 1996 License Renewal GEIS encompassed more than one license renewal term. As explained in the preamble to the Final Rule:

The radiological impacts of the uranium fuel cycle on human populations over time (collective effects) have been considered within the framework of Table S-3. The 100 year environmental dose commitment to the U.S. population from the fuel cycle, high level waste and spent fuel disposal excepted, is calculated to be about 14,800 man-rem, or 12 cancer fatalities, for each additional 20 year power reactor operating term.

61 Fed. Reg. at 28,478. *See also* 44 Fed. Reg. 45,312 (Aug. 2, 1979) (final rule promulgating Table S-3); WASH-1248, Environmental Survey of Uranium Fuel Cycle at S-28, G-7 (1974) (underlying environmental analysis discussing NRC's assumption that spent fuel would be stored for 100 years before disposal).

Notably, any confusion that may have been created by the original Table B-1's reference to "additional" license renewal terms has been corrected in the current Table B-1, which simply states: "The impacts to the public from radiological exposures [from the uranium fuel cycle] have been considered by the Commission in Table S-3 of this part." 78 Fed. Reg. 37,282, 37,323 (June 20, 2013).

SLR applications: SECY-14-0016, Ongoing Staff Activities to Assess Regulatory Considerations for Power Reactor Subsequent License Renewal (Jan. 13, 2014) (“SECY-14-0016”) and SRM-SECY-14-0016, Ongoing Staff Activities to Assess Regulatory Considerations for Power Reactor Subsequent License Renewal (Aug. 29, 2014) (“SRM-SECY-14-0016”). Neither of these documents rises to the level of a rulemaking notice or other decision to change the substantive terms of an existing regulation. Instead, SECY-14-0016 generally asserts that the content of the 2013 Revised License Renewal GEIS is “adequate” to cover an SLR application:

The staff . . . conducts an environmental review during the license renewal review process following the guidance in NUREG-1437, “Generic Environmental Impact Statement for License Renewal of Nuclear Plants” (hereinafter referred to as “GEIS,” ADAMS Accession Nos. ML13106A241, ML13106A242, and ML13106A244). The GEIS describes the most common environmental impacts to nuclear power facilities and allows applicants and the NRC to focus on important environmental issues specific to each site pursuing license renewal. *The staff revised the GEIS in June 2013, and believes that the update is adequate for a future subsequent license renewal application.*

Id. at 3 (emphasis added). This is a far cry from proposing a change to the regulations. Similarly, SRM-SECY-14-0016 does not even mention the legal question of the applicability of 10 C.F.R. § 51.53(c)(3) and Table B-1 to SLR applications. Instead, it generally instructs the Staff to “continue to update license renewal guidance, as needed, to provide additional clarity on the implementation of the license renewal regulatory framework.” *Id.*

Nor does the 2013 “update” to which SECY-14-0016 refers, NUREG-1437, Rev. 1, Generic Environmental Impact Statement for License Renewal of Nuclear Plants (2013) (“2013 Revised License Renewal GEIS”), contain any language suggesting that the NRC undertook to expand its environmental analysis to include the environmental impacts of operating reactors for more than one license renewal term, *i.e.*, for an operating life of 80 years or more. To the contrary, by its own terms, the 2013 Revised License Renewal GEIS simply “reviews and reevaluates” the findings of the 1996 License Renewal GEIS. *Id.* at 1-7.

Both the scoping notice and the scoping report for the 2013 Revised License Renewal GEIS are also consistent with a limited “update” of the 1996 License Renewal rather than a temporal expansion of its scope. First, the scoping notice, issued by the NRC in 2003, informs the public of the NRC’s plan to prepare an “update” to the 1996 License Renewal, not an overhaul. Notice of Intent to Prepare an Environmental Impact statement for the License Renewal of Nuclear Power Plants and to Conduct Scoping Process, 68 Fed. Reg. 33,209, 33,210 (June 3, 2003). And the list of goals for the scoping process includes no reference to any expansion of the scope of the environmental analysis beyond the initial license renewal term.⁴

⁴ The listed goals are:

- a. Determine whether the purpose and need for the update (the proposed action) is clear;
- b. Determine the scope of the update to the GEIS and identify whether there are any significant issues that should be analyzed in depth;
- c. Identify and eliminate from detailed study those issues that are peripheral or that are not significant or that have been covered by prior environmental review;
- d. Identify any environmental assessments and other EISs that are being or will be prepared that are related to, but are not part of the scope of the update to the GEIS being considered;
- e. Identify other environmental review and consultation requirements related to the proposed action;
- f. Indicate the relationship between the timing of the preparation of the environmental analyses and the Commission's tentative planning and decision-making schedule;
- g. Identify any cooperating agencies and, as appropriate, allocate assignments for preparation and schedules for completing the update to the GEIS to the NRC and any cooperating agencies; and
- h. Describe how the update to the GEIS will be prepared, including any contractor assistance.

Second, the scoping report, issued by the NRC after holding multiple public meetings, fails to refer to any expansion of the scope of the 1996 License Renewal GEIS beyond initial license renewal applications. Environmental Impact Statement Scoping Process, Summary Report: Update of the Generic Environmental Impact Statement for License Renewal of Nuclear Plants (May 2009) (ML082960910). Thus, neither the 2013 Revised License Renewal GEIS nor related scoping documents gives any indication that the NRC intended to change the scope of the 1996 License Renewal to add the environmental impacts of operating a nuclear reactor a full 80 years.

Other documents cited by the NRC in support of its argument are irrelevant because they relate solely to the NRC's Part 54 license renewal review.⁵ As the Commission has held, NRC's Part 54 regulations are "analytically separate" from the Part 51 environmental regulations at issue here. *Florida Power & Light Co.* (Turkey Point Nuclear Generating, Units 3 and 4), CLI-01-17, 54 NRC 3, 13 (2001). As explained in *Florida Power & Light*:

The Commission's [Atomic Energy Act] review under Part 54 does not compromise or limit NEPA. The AEA and NEPA contemplate *separate* NRC reviews of proposed licensing actions. *See Limerick Ecology Action v. NRC*, 869 F.3d 719, 729-31 (3d Cir. 1989).

54 NRC at 13 (emphasis added). Thus, the NRC's Final Part 54 regulations and NRC guidance documents for implementation of those Part 54 regulations are irrelevant here.

⁵ NRC Staff Answer at 19, 21 (citing Nuclear Power Plant License Renewal, Final Rule, 56 Fed. Reg. 64,943, 64,964-965 (Dec. 13, 1991) ("Final Part 54 Rule"); NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Rev. 2 ("SRP-LR") (Dec. 2010); NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Rev. 2 (Dec. 2010); Final Guidance Documents for Subsequent License Renewal," 82 Fed. Reg. 32,588 (July 14, 2014); NUREG-2221, "Technical Bases for Changes in the Subsequent License Renewal Guidance Documents NUREG-2191 and NUREG-2192" (Dec. 2017) (ML17362A126); NUREG-2222, "Disposition of Public Comments on the Draft Subsequent License Renewal Guidance; and "Supplementary Guidance Documents for Subsequent License Renewal," 83 Fed. Reg. 16,133 (Apr. 13, 2018)).

Accordingly, neither FPL nor the NRC has provided a scintilla of support for their legal argument that the Category 1 exemptions in Table B-1 apply to FPL's SLR application through 10 C.F.R. § 51.53(c)(3). The plain language of 10 C.F.R. § 51.53(c)(3), supported by regulatory history and caselaw, establishes that it is not applicable to FPL's SLR application. Therefore, as required by 10 C.F.R. §§ 51.53(c)(2) and 51.45, FPL must fully address the environmental impacts of operating Turkey Point Units 3 and 4 for another license renewal term, including all environmental impacts designated by Table B-1 as Category 1. By the same token, SACE does not need to file a waiver petition to justify the admissibility of contentions challenging the adequacy of FPL's environmental analysis of those issues.

B. SACE has Adequately Supported Contention 1 with Respect to Environmental Impacts on the Biscayne Aquifer.

FPL disputes SACE's assertion that FPL has underestimated the CCS' impacts on Biscayne Aquifer, asserting that it has "fully acknowledged the westward migration of the hypersaline plume along the base of the Biscayne Aquifer." FPL Answer at 18. But Contention 1 specifically disputes the adequacy of FPL's description of the hypersaline plume:

FPL erroneously minimizes the environmental impacts of the CCS on the Biscayne Aquifer. For instance, FPL asserts that the hypersaline plume from the CCS extends 1.5 miles from the Turkey Point site. Environmental Report at 3-91. In reality, however, the data show that the hypersaline groundwater plume has moved more than two miles westward of the CCS and is currently influencing movement of the saline water interface within the Biscayne Aquifer more than four miles inland. See Brand Report, Figure 4 at page 6. As stated by Mr. Martin, the "CCS has dramatically impacted water quality in the Biscayne Aquifer west of the CCS and is the principle (sic) influence on the movement of the saline water interface in the Biscayne Aquifer that continues to threaten fresh drinking water sources in southern Miami-Dade County." Martin Report at 13.

Hearing Request at 17 (emphasis added). Thus, while FPL may have acknowledged that the groundwater plume moved west, it understates both the degree of movement and the environmental implications of the expanding plume.

FPL and the NRC Staff both argue that SACE has not adequately supported its claim regarding groundwater contamination by tritium. FPL Answer at 31-32, NRC Staff Answer at 64. SACE's Hearing Request lists tritium as one of numerous contaminants in the hypersaline plume that emanates from the CCS and raises the general concern that this contamination may affect human health and wildlife:

Contaminants in the plume and the groundwater, generated by the Turkey Point plant, include phosphorous, ammonia, TKN, total nitrogen, radioactive tritium, and chlorophyll *a*. The areas directly affected by these pollutants include the underlying Biscayne Aquifer and its protected G-II groundwater, surface waters of Biscayne Bay and Card Sound, and the L-31E Canal. Directly affected areas also include the CCS' seagrass ecosystem, which provides habitat for the federally threatened American crocodile. And indirectly affected areas include the Greater Everglades, which may be impacted by withdrawal of surface waters intended for use in Everglades restoration, for the purpose of reducing temperatures or salinity in the CCS.

Hearing Request at 6-7. Halting the progression of this plume into the drinking water is a paramount objective of the mitigation measures proposed by FPL for the SLR term, and agreed to with state and local agencies. Thus, SACE appropriately lists tritium as one of numerous contaminants that taken together, pose an unacceptable environmental risk. Therefore, this aspect of Contention 1 is admissible.

FPL also argues that SACE's claim lacks factual basis because FPL is "implementing corrective actions approved by both the FDEP [Florida Department of Environmental Protection] and Miami-Dade County DERM [Department of Environmental Resources Management]." FPL Answer at 18. But the effectiveness of government-imposed mitigation measures may not be accepted at face value simply because they were imposed by a government agency; the NRC must reach its own independent conclusion regarding their effectiveness. *Calvert Cliffs*, 491 F.3d at 1124. *See also Florida Power & Light Co.* (Turkey Point Nuclear Generating, Units 3 and 4),

LBP-16-08, 83 NRC 417, 449 (2016) (holding that negative impacts of government-imposed mitigation measures must be addressed in an Environmental Report).

Consistent with these decisions, Contention 1 disputes the effectiveness of State and County-imposed mitigation measures; and it also asserts that these measures are mutually inconsistent and counterproductive. *Id.* at 21-24. SACE’s criticisms of the mitigation measures are specific, and they are supported by expert opinion. *Id.* Thus, as required by 10 C.F.R. § 2.309(f)(1)(vi), SACE has raised a genuine dispute with FPL on the material issue of the effectiveness of the FDEP and DERM-imposed mitigation measures, including whether those mitigation measures may have counter-productive effects.⁶

C. SACE has Adequately Supported Contention 1 with Respect to Environmental Impacts on Biscayne Bay

FPL also contests, as factually incorrect, SACE’s claim that the Environmental Report inadequately considers the CCS’ impacts on Biscayne Bay and Card Sound. FPL Answer at 21. While FPL acknowledges that Biscayne Bay and Card Sound are “impaired waterways” under the Clean Water Act, it contends that the location of the impairment is “miles north of the Turkey Point facility.” *Id.* at 21. Thus, according to FPL, “the impairment status of Biscayne Bay-Card sound is unrelated to the operation of the CCS” and “SACE and its experts provide no facts to support a contrary conclusion.” *Id.* at 22.

In making this argument, FPL simply disregards the facts that SACE has provided in support of this aspect of Contention 1. As stated in the contention:

⁶ FPL also argues that it is excused from discussing mitigation measures by Table B-1 of Subpart A, Appendix A to 10 C.F.R. Part 51 and *Entergy Nuclear Generation Co. & Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-14, 71 NRC 449, 471 (2010). FPL Answer at 22. As discussed above in Section II.A, however, Table B-1 does not apply to FPL’s Environmental Report.

FPL's assertion is contradicted by ample evidence that wastewater from the CCS is reaching Biscayne Bay and that it has a significant adverse environmental impact. As discussed in the Martin Report [Expert Report of Kirk Martin, P.G. (May 14, 2018), Attachment 12 to Hearing Request], 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. Martin Report at 4. Elevated tritium levels are also found in surface water samples taken in deeper portions of Biscayne Bay. *Id.* at 5. These readings are consistent with the high porosity and permeability of the bedrock immediately underlying the CCS and Biscayne Bay. *Id.* Samples 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. *Id.* at 5-6. *See also* Brand Report [Expert Report of Larry Brand (May 14, 2018), Attachment 6 to Hearing Request], (noting levels of total nitrogen, total phosphorous, ammonia, and chlorophyll *a* in excess of regulatory limits).

Hearing Request at 18-19. Mr. Martin's expert report identifies the specific locations of tritium measurements (adjacent to the Turkey Point reactors), the levels of tritium measured (above background), and the geologic pathways for movement of tritium through the aquifer to the Bay. *Id.* at 4-5. The only possible source of tritium found in Biscayne Bay is Turkey Point Units 3 and 4; there are no other nearby nuclear facilities.

FPL argues that 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." FPL Answer at 22 (citing Environmental Report at 3-95, 9-13). To the contrary, SACE cites Mr. Martin's expert report for the fact that samples 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. Hearing Request at 18 (citing Martin Report at 5-6). SACE also cites the expert report of Dr. J.W. Fourqurean, (May 14, 2018) for the cause of the elevated ammonia levels found in Biscayne Bay near the CCS:

If nutrient delivery is increased, seagrasses are killed and replaced by fast-growing, noxious seaweed. *Id.* The density and species composition of the seagrasses of southern Biscayne Bay are controlled by the availability of phosphorous. *Id.* at 3. In Dr. Fourqurean's expert opinion, the operation of the CCS has (1) carried phosphorous-polluted groundwater to near-shore surface waters through the highly porous bedrock of the Biscayne Aquifer and (2) has dissolved carbonates in that bedrock, releasing additional phosphorus that had been incorporated into that rock. As this phosphorus reaches the seagrass meadows offshore in Biscayne Bay, it will continue to degrade the ecosystem and cause an imbalance and change the nature of the surrounding marine environment. *Id.* at 6.

Hearing Request at 19. SACE has stated these concerns with specificity and has supported them with documented expert opinion. Therefore, FPL has no basis for arguing that SACE has failed to support its claims regarding understated environmental impacts on Biscayne Bay.

D. Underestimated Impacts on the American Crocodile Habitat in the CCS.

The NRC Staff does not oppose the admission of Contention 1 regarding the issue of “whether the operation of the CCS during the subsequent license renewal term will adversely affect the American crocodile’s critical habitat.” NRC Staff Answer at 61. FPL argues that SACE has failed to support its claim that FPL has underestimated the environmental impacts of continuing to operate Turkey Point Units 3 and 4 another 20 years on the American Crocodile a federally listed threatened species. Like the Environmental Report, FPL’s Answer dwells on the past success of the CCS in providing habitat for the American Crocodile and downplays the more recent collapse of the crocodile’s critical seagrass habitat and the crocodile population itself. FPL Answer at 33-34. While the steep decline in both the seagrass population and the crocodile population have occurred in about the past eight years, FPL continues to hearken back to those past years when the CCS *was* a suitable habitat for crocodiles.

But the focus of the Environmental Report should be whether and to what extent the continued operation of Turkey Point Units 3 will have adverse impacts on critical habitat for the American Crocodile. SACE relies on three sources of information regarding the grave

environmental threat that is unacknowledged by FPL: (1) FPL's own monitoring reports, which show a steep decline in crocodile reproduction rates in recent years, (2) the progressive die-off of the seagrass beds in the CCS, and (3) the Expert Report of Dr. James Fourqurean (May 14, 2018) (Attachment 15 to Hearing Request), which demonstrates that high levels of nutrients, such as exist in the CCS, contribute to displacement and death of seagrass. Hearing Request at 13, 19. The years of the CCS' ecological decline also coincide with the series of power uprates that FPL has implemented at Turkey Point Units 3 and 4. Hearing Request at 8, 10. By completely failing to address the causal relationship between the continued operation of the CCS and the precipitous decline in both the American Crocodile and its seagrass habitat, FPL fails to take the "hard look" required by NEPA. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989).

FPL faults SACE for failing to acknowledge FPL's mitigation measures for recovery of the American Crocodile. FPL Answer at 36. But none of the six mitigation measures listed by FPL on page 36 (preservation and creation of crocodile habitat, use of exclusion zones, nest monitoring, tagging of nestlings, relocation of hatchlings to low-salinity habitats, and recapture and release to assess growth) addresses the question of what steps are needed to reverse the degradation of the crocodile's seagrass habitat, formerly the ecological cornerstone of the CCS. *See* Environmental Report at 2-8 (noting that prior to 2010, "the CCS operated as a seagrass-based biological system."). FPL has violated NEPA by providing a list of superficial mitigation measures without addressing the likelihood that they could compensate for the destruction of the

key ecological feature of the CCS that was also the key element of the crocodile's habitat.⁷ See *Florida Power and Light*, LBP-16-08, 83 NRC at 449.

E. Overstated Beneficial Effects and Ignored Negative Effects of Existing and Proposed Mitigation Measures.

FPL and the Staff contest the admissibility of Contention 1 to the extent that it challenges the adequacy of mitigation measures proposed in the Environmental Report and the counter-productive effects of those mitigation measures. They first contend that SACE's claims are inadmissible as a matter of law because mitigation measures are considered "Category 1" issues that are excused from consideration by 10 C.F.R. Part 51, Subpart A, Appendix B, Table B-1. As discussed above in Section II.A, their argument is legally incorrect.

In addition, FPL asserts that SACE may not question measures imposed by state and local agencies for mitigation of excess salinity in the CCS and the underlying groundwater. FPL Answer at 23 (citing *Entergy Nuclear Vt. Yankee, LLC* (Vt. Yankee Nuclear Power Station), CLI-07-16, 65 NRC 371, 377 (2007)). FPL accuses SACE of seeking "an alternative forum in which to litigate issues that it is *already* litigating" in SACE's Clean Water Act ("CWA") lawsuit against FPL, in disregard of "well-established principles of comity between the NRC and other agencies, and between the NRC and the federal courts." FPL Answer at 3 (emphasis in original).

But FPL's argument is undercut by its own claim that the federal CWA does not apply to its discharges to groundwater:

⁷ FPL cites an August 2018 news article reporting an increase in crocodile hatchlings in the summer of 2018. This anecdotal information is not included in the Environmental Report, and therefore not a part of this record. In any event, the reported increased number of hatchlings is still less than half of the rate reported in 2013 and 2014. See Hearing Request at 18 (citing Environmental Report at 3-195).

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.

FPL Answer at 3 n.6. As further explained by FPL:

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

FPL Answer at 15 (footnotes omitted). Thus, by FPL's own description, the NPDES permit prohibits discharges to surface water under the federal CWA, and it *also* limits groundwater discharges under *state law*. Having argued that its discharges to groundwater are not subject to SACE's CWA enforcement lawsuit, FPL may not be heard to request "comity" with the federal court on all aspects of its NPDES permit.

In any event, NEPA obligations are not excused by other statutes, unless they specifically exempt NRC from NEPA compliance. *Calvert Cliffs Coord. Comm. v. Atomic Energy Comm.*, 449 F.3d 1109, 1125 (D.C. Cir. 1971); *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1035 (9th Cir. 2006); *Limerick Ecology Action v. NRC*, 869 F.2d 719, 729-30 (3rd Cir. 1989). As the U.S. Court of Appeals held in *Calvert Cliffs*, agencies must comply with NEPA unless their obligations under other statutes are "mutually exclusive." 449 F.2d at 1125.

In *Calvert Cliffs*, the court specifically found that the NRC's NEPA obligations were not excused by another agency's conclusion that the applicant had complied with Clean Water Act water quality standards; and that the applicability of water quality standards to a license applicant

did not preclude the NRC from “demanding water pollution controls from its licensees which are *more strict than* those demanded by the applicable water quality standards of the certifying agency.” 449 F.2d at 1124 (emphasis in original). Thus, the fact that SACE seeks compliance by FPL with the Clean Water Act in a separate lawsuit does not preclude SACE from seeking enforcement of NEPA in this proceeding.

FPL and the Staff also argue that this aspect of Contention 1 is inadmissible because it impermissibly challenges the legal presumption that a licensee will comply with its permit requirements. FPL Answer at 23-26, NRC Staff Answer at 64-65 (citing *Entergy Nuclear Generation Co. and Entergy Nuclear Operations Co.* (Pilgrim Nuclear Power Station), CLI-10-15, 71 NRC 479, 482 (2010) (quoting *Duke Energy Corp.* (McGuire Nuclear Stations, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 428 (2003)). In making this argument, they ignore the proliferation of enforcement actions that have piled up on FPL over the past years, forcing FPL into agreements with regulatory authorities to take mitigation measures.⁸ These orders and agreements respond to FPL’s longstanding and ongoing *noncompliance* with state and federal water quality standards. *See, e.g.*, 2015 Consent Agreement between FPL and Miami-Dade County at 2-3 (citing the history of intrusion into

⁸ As listed in SACE’s Hearing Request, these measures include the 2009 Fifth Supplemental Agreement with the South Florida Water Management District (“SFWMD”) for Groundwater, Surface Water, and Ecological Monitoring in and around the Turkey Point CCS; the 2015 Consent Agreement between FPL and Miami-Dade County for corrective actions to reduce salt levels in the CCS; and 2016 amendments to the 2015 Consent Agreement to address the issue of ammonia exceedances in surface water surrounding the CCS. In addition, in 2016, FPL and the Florida Department of Environmental Protection (“FDEP”) agreed to a separate Consent Order, establishing remediation and abatement measures to abate and protect against contamination of the Biscayne Aquifer and Biscayne Bay. Other orders for mitigation of CCS impacts, including a 2014 Administrative Order by the FDEP to reduce salinity in the CCS, a FDEP Notice of Violation regarding the hypersaline plume, and a FDEP warning letter, are described in pars. 10, 14, and 14 of the 2016 Consent Order.

groundwater of saline water from the CCS, multiple monitoring and mitigation requirements, notices of violation, enforcement orders, and agreements to mitigate the damage to water quality); 2016 Consent Order between FPL and FDEP at 5 (observing that “the CCS is the major contributing cause to the continuing westward movement of the saline water interface, and that the discharge of hypersaline water contributes to saltwater intrusion, and that “saltwater intrusion into the area west of the CCS is impairing the reasonable and beneficial use of adjacent G-II groundwater in that area.”)

Given the long history of saltwater intrusion from the CCS into the region’s groundwater, and given the ineffectiveness of both FPL’s historic mitigation measures and government regulation to halt the continuing pollution of the groundwater by FPL, it is entirely reasonable for SACE to question whether the measures required by Miami-Dade County and the FDEP will be effective, and indeed whether they will be counter-productive. Hearing Request at 20-24. Under NEPA, any environmental analysis that proposes mitigation measures must also evaluate the likelihood that they will be effective, or even have negative impacts. *Florida Power and Light*, LBP-16-08, 83 NRC at 449.

In an effort to show that Contention 1 lacks basis, FPL reviews the litany of mitigation measures presented in the Environmental Report, and argues they are adequate. FPL Answer at 23-28. But FPL fails to acknowledge that SACE has disputed the effectiveness of these measures with sufficient specificity and documented support to show the existence of a genuine and material dispute with FPL and thereby allow a hearing on that dispute. 10 C.F.R. § 2.309(f)(1).

The Staff also raises some challenges to facts asserted in this part of Contention 1 that are without merit. First, the Staff argues that SACE has no factual basis to claim that FPL may use surface water from the L-31 canal to reduce salinity levels in the CCS. NRC Staff Answer at 61.

But the Staff does not deny that FPL has used L-31 Canal water in the past for this very purpose.

And the Environmental Report does not rule it out in the future, but rather keeps the option open:

As discussed in Section 3.7.3, FPL is working with FDEP and Miami-Dade County to reduce the average annual salinity in the canals to 34 PSU. In 2015, FPL used controlled sources from the L-31 Canal, marine wells, and flow from the Floridan Aquifer wells to reduce the salinity in the CCS. In future years, *it is anticipated* that Floridan wells, limited to 14 MGD, will be the controlled water source to be utilized for salinity reduction.

Environmental Report at 3-195 (emphasis added). And contrary to the NRC Staff's argument, SACE provides factual support for its concern that the demands of the CERP for fresh water from the L-31 canal may conflict with the demands of the CCS. As stated in the contention:

[W]ater from the L-31E Canal is used to flood adjacent wetlands as part of the CERP. *See* SFWMD Order at 15. And around 2014, FPL installed flow barriers in the L-31E Canal, near Card Sound, and in the S20 canal to prevent the intrusion of salt water in the canals. Nuttle Report at 10. The demands of the CCS for additional lower-saline water may conflict with the demands of the CERP for maintaining high water elevations in the region.

Hearing Request at 13-14.

F. Failure to Adequately Address Cumulative Impacts.

Both FPL and the NRC Staff opposes the admissibility of this portion of Contention 1 on the ground that SACE does not explicitly challenge the sufficiency of the Environmental Report's discussion of the cumulative impacts of the CCS in Section 3.6. FPL Answer at 37, NRC Staff Answer at 66. Their argument is incorrect. In fact, SACE directly challenges FPL's assertion that "cumulative impacts are managed as long as facility operations are in compliance with their respective permits." Hearing Request at 24 (quoting Environmental Report at 4-69). As discussed in the contention, FPL is not in compliance with its permits, and "those permits are part of a 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." *Id.*

SACE also explains what should be included in a cumulative impacts analysis, and why it is important. *Id.* at 25. Therefore, SACE has met the NRC's admissibility requirements for this aspect of Contention 1.

III. DISCUSSION: CONTENTION 2

Contention 2 asserts:

FPL has failed to consider the reasonable alternative of cooling the Turkey Point Units 3 and 4 reactors with mechanical draft cooling towers, in violation of NEPA and 10 C.F.R. § 51.53(c)(2). The cooling tower alternative should be considered because it is feasible and cost-effective. It is also superior to FPL's preferred alternative of continuing to rely on the CCS, because it would likely eliminate the adverse impacts of continuing to operate the CCS that are set forth in Contention 1.

Hearing Requests at 29.

The Staff does not oppose Contention 2 as a contention of omission, "insofar as it asserts that the Applicant's Environmental Report omits consideration of mechanical draft cooling towers." NRC Staff at 68-69. FPL opposes admission of the contention on the ground that it constitutes a Category 1 issue outside the scope of this proceeding. FPL Answer at 46. As discussed above in Section II.A, FPL's argument has no merit.

FPL also argues that Contention 2 is inadmissible as a matter of law under Section 511(c)(2) of the CWA, as implemented by the Second Memorandum of Understanding and Policy Statement Regarding Implementation of Certain NRC and EPA Responsibilities, 40 Fed. Reg. 60,115 (Dec. 31, 1975)). FPL Answer at 49-50 (citing *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 & 3), LBP-08-13, 68 NRC 43, 155-56 (2008) ("*Indian Point*"). In *Indian Point*, the ASLB interpreted Section 511(c)(2) to prohibit the NRC "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."). Section 511(c)(2) of the CWA provides that:

Nothing in the National Environmental Policy Act of 1969 (83 Stat. 852) shall be deemed to--

(A) authorize any Federal agency authorized to license or permit the conduct of any activity which may result in the discharge of a pollutant into the navigable waters to review any effluent limitation or other requirement established pursuant to this Act or the adequacy of any certification under section 401 of this Act; or

(B) authorize any such agency to impose, as a condition precedent to the issuance of any license or permit, any effluent limitation other than any such limitation established pursuant to this Act.

33 U.S.C § 1371(c)(2). But Section 511(c)(2) does not apply here, by FPL's own reasoning. As discussed above in Section II.E, FPL maintains that the CWA does not apply to its groundwater discharges, the subject of both Contentions 1 and 2. FPL Answer at 15. As FPL asserts, its groundwater discharges are governed by state law, not the CWA. *Id.* See also Environmental Report at 2-4 (asserting that the cooling canals "do not discharge to surface water."). Moreover, SACE is not asking the ASLB to review effluent limitations in the permit or to impose new effluent limits. Rather, SACE is asking for consideration of a mitigation alternative – mechanical draft towers – that would significantly reduce the CCS' environmental impacts to groundwater. By FPL's own reckoning, these groundwater impacts are covered by state law and not by the portion of its NPDES permit that limits or prohibits surface water discharges under the federal CWA.

FPL also argues that consideration of mechanical draft towers as a mitigation alternative is not necessary because the environmental impacts of the CCS are small. As set forth in Contention 1, however, SACE disputes FPL's conclusion that the impacts of the CCS are small. In any event, FPL does not cite any regulation or case which excuses the consideration of reasonable mitigation alternatives in a NEPA study. Even an Environmental Assessment must include consideration of alternatives. 10 C.F.R. § 51.30(a)(iii). As required by 10 C.F.R. §

51.53(c)(2), FPL's Environmental Report must consider alternatives that are "relevant to mitigation." This evaluation will, in turn, inform the NRC's Supplemental EIS, which must consider "alternatives for reducing or avoiding adverse environmental effects." *See* NRC Staff Answer at 68-69 (citing 10 C.F.R. § 51.71(d); 10 C.F.R. § 51.95(c)(1) and (2)).

Mechanical draft cooling towers are already in use on the Turkey Point site and have been identified as a reasonable alternative for cooling Turkey Point Units 3 and 4 in every environmental study dating back to 1972. *See* Hearing Request at 32. Thus, there can be no dispute that they constitute reasonable alternatives that should be considered now, in the SLR proceeding.

IV. CONCLUSION

For the foregoing reasons, SACE's hearing request and petition to intervene should be granted and its contentions should be admitted.

Respectfully submitted,

 /signed electronically by/
Diane Curran
Harmon, Curran, Spielberg, & Eisenberg, L.L.P.
1725 DeSales Street N.W., Suite 500
Washington, D.C. 20036
240-393-9285
dcurran@harmoncurran.com

September 10, 2018

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

_____)
In the Matter of)
Florida Power and Light Company) Docket Nos. 50-250/251-SLR
Turkey Point Units 3 and 4)
_____)

CERTIFICATE OF SERVICE

I certify that on September 10, 2018, 2018, I posted copies of the foregoing SOUTHERN ALLIANCE FOR CLEAN ENERGY'S REPLY TO OPPOSITIONS BY FLORIDA POWER & LIGHT AND NRC STAFF TO SACE'S HEARING REQUEST on the NRC's Electronic Information Exchange System.

/signed electronically by/
Diane Curran