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January 17, 2020

Via Electronic Mail and Certified Mail

Freedom of Information Act and Privacy Act Officer
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
foia@nrc.gov
Certified Mail No. 70060810000181385288

Office of the Chief Information Officer
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
foia@nrc.gov
Certified Mail No. 70060810000181385295

Re: Requests for Records Under the Freedom of Information Act and Request for Fee Waiver

Miami Waterkeeper hereby requests records under the Freedom of Information Act ("FOIA"), 5 U.S.C. § 552, relating to the Florida Power & Light Co.'s Turkey Point Nuclear Generating Station located in Homestead, Florida. As set out more fully below, these requests generally seek records related to environmental impacts at the Turkey Point plant.

A. Background

Florida Power & Light ("FPL"), a subsidiary of NextEra Energy Inc., owns and operates the Turkey Point Nuclear Generating Station, Unit Nos. 3 & 4 ("Turkey Point"). On January 30, 2018, FPL submitted a subsequent license renewal application ("SLRA") to extend its current license for those units for an additional twenty years. The SLRA triggered the Nuclear Regulatory Commission's ("NRC") responsibility under the National Environmental Policy Act to analyze the environmental impacts of granting FPL's application. Consequently, the NRC Staff issued a Draft Supplemental Environmental Impact Statement ("DSEIS") and Final Environmental Impact Statement ("FSEIS"). Both identified Turkey Point's cooling canal system as the cause and source of a hypersaline groundwater plume and various ongoing efforts to reduce salinity in the cooling canals by "freshening" them with groundwater from the Biscayne Aquifer and by using groundwater extraction wells to retract the hypersaline plume.

The NRC Staff determined that these salinity mitigation efforts would succeed in meeting their goals, or if not, that oversight by state and county regulators would ensure that if these current efforts do not succeed, that future ones will. The Staff based its conclusions in part on computer modeling. One of these models is identified in the DSEIS and FSEIS as Tetra Tech 2014a, "Evaluation of Required Floridan Water for Salinity Reduction in the Cooling Canal System," and was assigned the ADAMS Accession No. ML18102A521.

Following its review of the DSEIS, FPL submitted public comments indicating that there is an update to the Tetra Tech 2014a model and corresponding results. This updated modeling effort indicates that drier climatic conditions will require "more freshening water or longer timeframes . . . to offset the drought related evaporative losses from the [cooling canal system]." (*See* Exhibit A). Miami Waterkeeper is seeking records relating to this updated modeling effort and other records concerning the NRC Staff's review.

B. Requests

For purposes of these requests, the term "record" has the same meaning as under 10 C.F.R. § 9.13. Also for purposes of these requests, the term "related to" means pertaining to, referring to, relevant to, supporting, constituting, contradicting, mentioning, evidencing, discussing, or otherwise involving, whether directly or indirectly, the subject matter of the request. When used herein, the term "Florida Power & Light" means the Florida Power & Light Company, its past or present officers, employees, agents, contractors, consultants, representatives, and attorneys.

Miami Waterkeeper makes the following requests:

1. All records related to the "updated" modeling and corresponding results described at A-103 in the FSEIS for Turkey Point. (*See* Exhibit A)

2. All records related to measured salinity levels in the Turkey Point cooling canal system since November 1, 2016.

3. All records related to the NRC Staff and its contractors' review of "the Tetra Tech CCS model" identified at 3-58 of the FSEIS for Turkey Point. (*See* Exhibit B). This request includes their review of "the underlying assumptions that formed the basis of the Tetra Tech model" or any other aspect of the model including climatic conditions.

4. All records related to the NRC Staff and its contractors' review of Tetra Tech modeling identified on pages 3-58 to 3-60 of the FSEIS. (*See* Exhibit C).

5. All records of electronic communications between or among Florida Power & Light and the NRC Staff or its contractors since January 1, 2017 related to salinity measurements in the cooling canal system and/or the hypersaline plume emanating from the same.

6. All records related to the impacts of sea level rise on the Turkey Point Nuclear power station. The scope of this request is limited to sea level rise impacts on nuclear safety, plant operations, flooding, and any related environmental impacts.

Individuals likely to possess this information or know where to locate it are identified in the List of Preparers at Table 7-1 of the FSEIS. (*See* Exhibit D)

To the extent the NRC believes that records responsive to these requests are subject to one or more of FOIA's nine exemptions, we ask the NRC to exercise its discretion in favor of releasing the information in its entirety.

C. Record Format and Delivery

Please release responsive records on a rolling basis. If you determine that any of the records described above are already publicly available, please provide the location of where to find them.

Pursuant to 10 C.F.R. § 9.15, Miami Waterkeeper asks that the records be made available in their native electronic formats (e.g., ".xls" file format for Microsoft Excel records). This is particularly important for records that include large amounts of data and computer models. If that is not possible, we ask that records be made available as PDF files.

To save resources and mailing expense, we request electronic copies of these documents, if available. If the NRC chooses not to disclose any of the requested records, we request that the agency: 1) Identify each such document with particularity (including title, subject, date, author, recipient, and parties copied); 2) Explain in full the basis on which nondisclosure is sought; and 3) Provide us with any segregable portions of the records for which it does not claim a specific exemption.

We anticipate a determination within twenty working days. 10 C.F.R. § 9.25(a). We appreciate your expeditious help in obtaining the requested information. Failure to comply within the regulatory timeframe may result in the Miami Waterkeeper taking additional steps to ensure timely receipt of the requested materials. Please promptly mail or email copies of all requested records to:

Ken Rumelt, Professor of Law and Senior Attorney
Environmental Advocacy Clinic
Vermont Law School
PO Box 96, 164 Chelsea Street
South Royalton, VT 05068
Email: krumelt@vermontlaw.edu

D. Miami Waterkeeper is Entitled to a Fee Waiver

FOIA dictates that requested records be provided without charge "if disclosure of the information is in the public interest because it is likely to contribute significantly to public

understanding of the operations or activities of the government and is not primarily in the commercial interest of the requester." 5 U.S.C. § 552(a)(4)(A)(iii); *see also* 10 C.F.R. §§ 9.11-9.45. As explained below, Miami Waterkeeper's requests meet both requirements.[1]

1. **Describe the purpose for which the requester intends to use the requested information. 10 C.F.R. § 9.41(b)(1).**

Miami Waterkeeper intends to use the requested information for the purpose of understanding the impacts of the continued operation of the Turkey Point cooling canal system on groundwater quality, groundwater availability, and related impacts under climate change conditions, i.e., hotter temperatures and rising sea levels. Miami Waterkeeper also intends to use this information for the purpose of evaluating the extent to which this information was considered in connection with the subsequent license renewal review process for Turkey Point Units 3 & 4.

2. **Explain the extent to which the requester will extract and analyze the substantive content of the agency record. 10 C.F.R. § 9.41(b)(2).**

Miami Waterkeeper intends to extract and analyze as much information as possible from the requested records. The requests seek data and models in their native file formats when available. With native files in hand, Miami Waterkeeper can extract and analyze the substantive information contained therein. For example, if the NRC releases a Microsoft Excel file, Miami Waterkeeper can extract and analyze the data and formulas, and perform additional model runs under different scenarios.

3. **Describe the nature of the specific activity or research in which the agency records will be used and the specific qualifications the requester possesses to utilize information for the intended use in such a way that it will contribute to public understanding. 10 C.F.R. § 9.41(b)(3).**

Miami Waterkeeper intends to use the information obtained through this FOIA request to evaluate the environmental impacts of the continued operation of Turkey Point's cooling canal system in climate change conditions such as higher temperatures and sea levels. This likely will involve the review of such information by members of Miami Waterkeeper's staff and other experts who have worked with Miami Waterkeeper to evaluate the same. These individuals include Dr. Rachel Silverstein, Ph.D and Elizabeth Kelly. (*See* Exhibit F, CVs).

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[1] Miami Waterkeeper has received fee waiver requests in the past from other federal agencies. (*See* Exhibit E).

4. **Describe the likely impact on the public's understanding of the subject as compared to the level of public understanding of the subject before disclosure. 10 C.F.R. § 9.41(b)(4).**

The public will likely understand the environmental impacts from the continued operation of the cooling canal system at Turkey Point far better than before disclosure. To the best of Miami Waterkeeper's knowledge, the Nuclear Regulatory Commission has not provided access to all available records within the scope of these requests. During subsequent license renewal application review for Turkey Point Units 3 & 4, Turkey Point's owner, Florida Power & Light, commented on the NRC's Draft Supplemental Environmental Impact Statement ("DSEIS") for its application. Those comments stated that it had performed "updated modeling" that indicated that under drier climatic conditions, "more freshening water or longer timeframes will be needed to offset the drought related evaoporative losses from the [cooling canal system]." (ML19141A047). Presumably Florida Power & Light provided these updated results to the NRC, however, to the best of Miami Waterkeeper's knowledge, these "updated modeling" results were not discussed in the draft or final EIS for the subsequent license renewal.

If the NRC has these records and produces them in response to this FOIA request, then Miami Waterkeeper can review, analyze, and/or publicly disseminate the information. If the NRC does not have this information, then the public will understand that the information exists and was not considered before the NRC granted the subsequent license renewal. Either way, public's understanding of projected impacts from the cooling canal system, the extent of the NRC's review of Florida Power & Light's projected impacts, or both, will be far greater than before disclosure.

The information will also shed light on the depth of the Staff's review. The DSEIS and FSEIS indicate that the NRC Staff independently assess the reliability and reasonableness of the models. Here, the NRC Staff concluded the modeling was reliable, including the Tetra Tech 2014a modeling. But the details of the Staff's review of modeling are not explicit in the DSEIS or FSEIS. The release of these records under FOIA will allow the public to understand how thoroughly the NRC Staff reviewed this information.

5. **Describe the size and nature of the public to whose understanding a contribution will be made. 10 C.F.R. § 9.41(b)(5).**

The size and nature of the public to whose understanding a contribution will be made is most easily discerned based on the number of government entities, businesses, and individuals that provided comments or otherwise participated in the SLRA proceedings for Turkey Point Units 3 & 4. These are available in Appendix A to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 5, Second Renwal, Regarding Subsequent License Renewal for Turkey Point Nuclear Generating Unit Nos. 3 and 4, Final Report (Oct. 2019) (ML19290H346). Since Turkey Point is the first nuclear power station to receive a subsequent license renewal, the size and nature of the public to whose understanding a contribution will be made is likely larger than just those who commented or otherwise

participated in the Turkey Point SLRA proceedings. These include members of the public who live near other plants that are or will likely submit subsequent license renewal applications.

6. **Describe the intended means of dissemination to the general public. 10 C.F.R. § 9.41(b)(6).**

Miami Waterkeeper intends to disseminate information electronically via the internet, including its websites, social media, and traditional media sources. This may come in the form of studies, white papers, reports, or analyses similar to what Miami Waterkeeper has disseminated in the past.

7. **Indicate if public access to information will be provided free of charge or provided for an access fee or publication fee. 10 C.F.R. § 9.41(b)(7).**

Miami Waterkeeper will not charge anyone for access to information received via these FOIA requests.

8. **Describe any commercial or private interest the requester or any other party has in the agency records sought. 10 C.F.R. § 9.41(b)(8).**

Miami Waterkeeper has no commercial or private interest, and can only speculate as to any other party's commercial or private interest in the information sought. There are, however, numerous government agencies, businesses, and individuals who are interested in the environmental impacts from the continued operation of Turkey Point's cooling canal system. These parties likely have expressed their interests, whether commercial or private, in the context of the NRC's decision to grant FPL's application for Units 6 & 7 and SLRA for Units 3 & 4.

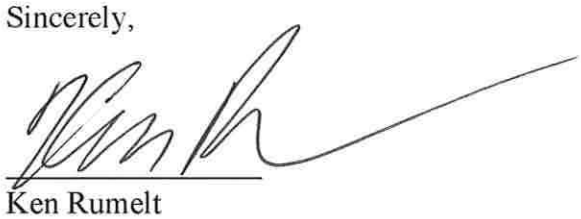
In sum, given the non-profit nature of Miami Waterkeeper, its limited financial resources, and all the foregoing reasons, a fee waiver is warranted. We urge NRC to waive all fees associated with this request. However, in the event that you do not grant the requested waiver, please provide us with specific information concerning the basis for such decision, as required by the FOIA.

Please note that our request for a fee waiver should not be construed as an extension of time in which to reply to this FOIA request. In the event that the FOIA officer denies a fee waiver, please contact me at (802) 831-1031 to discuss fees.

Conclusion

Please do not hesitate to contact me if you have any questions. Thank you in advance for your prompt reply.

Sincerely,



Ken Rumelt
Professor of Law and Senior Attorney

Exhibit A

Comment: Section 3.5, Page 3-47. The DSEIS states, "To help reduce the water temperatures within the CCS, on June 27, 2014, the State of Florida granted FPL permission to add saltwater from the Biscayne aquifer and brackish water from the Upper Floridan aquifer to the CCS (NRC 2016a)." This statement is inaccurate because temperature reduction was not the primary objective of the water additions authorized by the State of Florida on June 27, 2014. The supplemental water supplies were used to improve water conditions in the CCS, primarily to lower CCS salinity and temperature. While decreasing salinity levels within the CCS was the primary objective, a secondary benefit may have provided some heat reduction to the CCS. This statement should be revised to: "To help improve water conditions within the CCS, on June 27, 2014, the State of Florida granted FPL permission to ...". (**0017-1-20** [Maher, William])

Response: *Section 3.5.1.4 of the SEIS has been revised, in part, as a result of these comments, to clarify the primary purpose of adding lower-salinity water to the CCS.*

Comment: Section 3.5, Page 3-49. The DSEIS states, "In 2014, Tetra Tech used numerical models to estimate the volume of Upper Floridan aquifer water that would be required to reduce CCS water salinity to seawater range. The modeling exercise produced an estimate that with the addition of 14 mgd (53,000 m3/day) of Upper Floridan aquifer water that had a salinity of 2 PSU it would require less than a year to reduce salinities in the CCS to 35 PSU (Tetra Tech 2014a). However, while FPL then added an average of 12.8 mgd (48,500 m3/day) of Upper Floridan aquifer brackish water to the CCS from the beginning of November 2016 to the end of May 2017, salinities in the CCS did not go down to 35 PSU (FPL 2017a). Rather, at the end of May 2017, average salinity concentrations in the CCS were 64.9 PSU (FPL 2017b)." This statement is ambiguous because it raises questions regarding the volume of Upper Floridan water needed to achieve the targeted annual average salinity of 34 PSU in the CCS. The modeling efforts that are discussed in the Tetra Tech 2014a memo were based on 22 months of data, one year of which had above normal rainfall. As a result of continued monitoring, the model has been updated and further refined using a longer data record that incorporates a more representative range of hydrologic and salinity conditions. The refined model identified a longer period of time would be needed to reduce the average annual CCS salinity in the event of extended dry period or drought. Information from this expanded model was considered by the FDEP in requiring FPL to achieve the average annual salinity of 34 psu in the CCS within four years of initiating freshening activities as described in the Consent Order. The 2017 and 2018 annual monitoring reports both described drier than normal conditions with January through May 2017 being the 6th driest dry season over the previous 49 years and January through March 2018 being the driest in 10 years. If wetter than normal conditions (similar to those that occurred in 2012) persisted, 14 MGD of Floridan aquifer water would achieve the target. However, based on the updated modeling that reflects normal to extended dry conditions, the time needed to achieve the target salinity is longer and even that longer modeled period would be predicated on wetter conditions than the dry conditions experienced in 2017 and early 2018. This statement should be clarified by adding: "Additional data collected since 2014 have been used to update the model with a wider range of hydrologic conditions and associated CCS salinity responses. The updated modeling indicates a wider range of evaporative conditions exist, particularly during the dry seasons, which exceed 14 mgd and suggest that when such drier conditions occur, more freshening water or longer timeframes will be needed to offset the drought related evaporative losses from the CCS." (**0017-1-21** [Maher, William])

Response: *Section 3.5.1.4, "Application of Numerical Modeling to CCS Salinity Mitigation," of the SEIS has been revised, in part, as a result of this comment, to clarify that if drier conditions*

Exhibit B

The study considered technical, environmental, economic, and social criteria. Relative to the ranking criteria, it ranked Alternative Five as the best overall and the most balanced alternative. It also identified that Alternatives One and Seven should be maintained as short-term backup water options to be used when appropriate and as needed during extreme conditions. It further determined that Alternatives Two, Four, Six, and Eight did not provide a significant advantage and should not be evaluated further unless conditions change. While the study determined that Alternative Three has a high cost and very long implementation schedules; it concluded that this alternative should be further evaluated as a potential long-term solution to a regional problem (Golder 2016).

The alternatives study was reviewed by Miami-Dade County. On December 22, 2016, the County decided that the use of reclaimed water with nutrient removal and advanced treatment, described as (Alternative 4) in the referenced document, could provide a long-term, sustainable source of water to offset CCS water deficits. The County recommended that FPL revisit this alternative for further evaluation as a potential long-term solution (MDC 2016a). At the time of this report, FPL (2019e) and MDC were evaluating a potential cooperative reclaimed water use project to provide freshening water to the CCS.

Application of Numerical Modeling to CCS Salinity Mitigation

The operation of the CCS has been numerically modeled to understand and predict different aspects of the CCS (Chin 2016; Golder 2008; Tetra Tech 2014a; FPL 2012a, FPL 2014b, FPL 2016a, FPL 2016g, FPL 2017a). The most recent modeling was conducted by Tetra Tech for FPL. The focus of this modeling was to quantify the volumes of water and the mass of salt entering and exiting the CCS (FPL 2012a). Model calculations for the various components of the CCS incorporate hydrological, chemical, and meteorological data collected in and around the CCS (FPL 2012a). Selected model inputs were adjusted to calibrate the model against observed changes in CCS water and salt storage. The calibration minimized differences between simulated and observed salt and water storage changes within the CCS (FPL 2014).

The NRC staff and its contractors reviewed the underlying assumptions that formed the basis of the Tetra Tech CCS model and did not identify any significant issues. The staff's reviewers found that the model is useful in understanding the physics of the CCS and how it responds to changing conditions. It is also useful as a planning tool to refine future mitigative actions.

A good match between measured and model values gives modelers confidence that they understand how the CCS responds to meteorological conditions and freshening activities. The Tetra Tech model outputs are in good agreement with respect to measured values of CCS salinities, temperatures, water elevations, and the movement of salt and water movement into and out of the CCS (FPL 2017a). Both data measurements and modeling indicate that favorable meteorological conditions and freshening activities reduce salinities within the CCS (FPL 2017a, FPL 2017b, FPL 2018o).

The Tetra Tech model is being used by FPL to understand the effectiveness of its mitigation measures. The most recently published modeling results simulate the operation of the CCS from June 2015 through May 2017. The modelers concluded that over this time period, the addition of Upper Floridan aquifer water helped to moderate dry season salinity without significantly increasing water levels in the CCS (FPL 2017a).

In 2014, Tetra Tech used numerical models to estimate the volume of Upper Floridan aquifer water that would be required to reduce CCS water salinity to seawater range. The modeling

Exhibit C

The study considered technical, environmental, economic, and social criteria. Relative to the ranking criteria, it ranked Alternative Five as the best overall and the most balanced alternative. It also identified that Alternatives One and Seven should be maintained as short-term backup water options to be used when appropriate and as needed during extreme conditions. It further determined that Alternatives Two, Four, Six, and Eight did not provide a significant advantage and should not be evaluated further unless conditions change. While the study determined that Alternative Three has a high cost and very long implementation schedules; it concluded that this alternative should be further evaluated as a potential long-term solution to a regional problem (Golder 2016).

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The Tetra Tech model is being used by FPL to understand the effectiveness of its mitigation measures. The most recently published modeling results simulate the operation of the CCS from June 2015 through May 2017. The modelers concluded that over this time period, the addition of Upper Floridan aquifer water helped to moderate dry season salinity without significantly increasing water levels in the CCS (FPL 2017a).

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exercise produced an estimate that with the addition of 14 mgd (53,000 m^3/day) of Upper Floridan aquifer water that had a salinity of 2 PSU it would require less than a year to reduce salinities in the CCS to 35 PSU (Tetra Tech 2014a). However, while FPL then added an average of 12.8 mgd (48,500 m^3/day) of Upper Floridan aquifer brackish water to the CCS for freshening purposes from the beginning of November 2016 to the end of May 2017, salinities in the CCS did not go down to 35 PSU (FPL 2017a). Rather, at the end of May 2017, salinity concentrations in the CCS were 64.9 PSU (FPL 2017b). As discussed above, CCS salinity levels deceased from that level in 2018.

Comparing CCS data and model results, the modelers concluded that during this period (most of which occurred during the dry season), evaporation rates exceeded precipitation rates. Without the addition of brackish water from the Upper Floridan aquifer, the net evaporation versus precipitation rate would have caused the salinity in the CCS to increase more than was observed. However, the addition of Upper Floridan aquifer water helped to moderate the effects of the dry season (typically, November - April) on the CCS. For example, CCS salinities during the dry seasons of 2014 and 2015, which were not as dry as 2017, exceeded 90 PSU, while the addition of brackish water from the Upper Floridan aquifer and saltwater from the marine wells was effective in keeping CCS salinities below 70 PSU in the 2017 dry season. The modelers anticipate that under more average meteorological conditions (e.g., less severe dry seasons), the addition of Upper Floridan aquifer water should help to reduce CCS water salinities to 34 PSU (FPL 2017a, FPL 2017b, FPL 2018o).

The Turkey Point site experienced a severe dry season in late 2017 (particularly into the first quarter of 2018) that resulted in the second driest period over the last 50 years. CCS salinities increased over this period. This was mitigated in part by rainfall from Hurricane Irma in September, which produced estimated rainfall totals averaging 4.96 in. (12.6 cm) over the CCS. However, dry conditions returned after the hurricane (FPL 2018o). These events exemplify the high variability of hydrologic inputs to the CCS. Nonetheless, with continued freshening from Upper Floridan aquifer water during the period from June 2017 through May 2018, the average annual salinity of the CCS declined to 49.5 PSU (or 50.9 PSU average annual salinity as calculated pursuant to the FDEP Consent Order, see next paragraph) (FPL 2018p).

The FDEP Consent Order prescribes how a numerical average called the “average annual CCS salinity” is to be calculated to determine compliance. As previously mentioned, using the method that has historically been used to calculate average CCS salinities, the average salinity in the CCS between June 1, 2017 to May 31, 2018, was 49.5 PSU. However, using the prescribed approach, the average annual salinity for this time period was 50.9 PSU. This was the first full year that the CCS was freshened using water from the authorized Upper Floridan aquifer wells. The 50.9 PSU value is lower than the preceding year's (June 1, 2016 to May 31, 2017) average annual salinity of 61.9 PSU, during which Upper Floridan aquifer freshening wells were operational for only half of the year. Considering that the highest CCS yearly salinity was 82.5 PSU (June 2014 through May 2015), it appears that a substantial reduction in CCS salinity has occurred over the past several years, in part as a result of FPL's actions (FPL 2018p).

As previously stated, in compliance with the June 20, 2016, Consent Order executed by FPL and the FDEP, if FPL fails to reach an annual average salinity of at or below 34 PSU by the required time periods, FPL is required to submit a plan to the FDEP detailing additional measures, and a timeframe, that FPL will implement to achieve the threshold (see Salinity

Management Plan) (FDEP 2016a). Thus, continued actions by FPL and regulatory oversight by the FDEP provide assurance that the CCS should reach the required PSU levels within or close to the designated period.

Ammonia and Nutrients within Biscayne Bay and Card Sound

If the concentration of nutrients in either Biscayne Bay or Card Sound get too high, they can negatively impact the ecological environment. Excess nutrients can cause algae blooms (thick green algae mats that can be toxic), deplete oxygen in the water, and reduce water clarity. The State of Florida (with the approval of the EPA) has established numeric nutrient criteria for Biscayne Bay and Card Sound. These water quality standards help to protect the quality of the surface water in the bay and the sound, consistent with the requirements of the Clean Water Act (EPA 2014c). The numeric nutrient criteria include criteria for phosphorus, chlorophyll, and total nitrogen, of which ammonia is a contributor (FDEP 2018e).

Biscayne Bay waters are generally low in plant nutrients. This means the aquatic ecosystems respond very rapidly to small nutrient enrichment, especially to increases of phosphorous. The concentrations of ammonia from runoff tends to be higher in urban runoff than in wetland or agricultural runoff. The Biscayne Bay watershed has a diverse agricultural, urban, and wetland land use. This results in lateral differences in bay water nutrient concentrations (NPS 2011).

In general, ammonia concentrations are higher in the northern portion of Biscayne Bay, which is most urbanized, while the lowest values are next to the Turkey Point site in Biscayne Bay and in Card Sound. The lack of urban development around the Turkey Point site has helped spare the southern portion of the bay from the anthropogenic effects to which the central and northern portions of the bay have been exposed (FPL 2017c; NPL 2011).

Seasonal ammonia values in the bay are lowest late in the dry season, with higher concentrations and increased variability during the wet season (peaking in September or October) (NPS 2011). Sampling data by Miami-Dade County and FPL in the late fall and winter months of 2015–2016, revealed levels of ammonia concentrations that exceeded the County's water quality standard for ammonia (0.5 mg/L) at two surface water quality monitoring stations near the CCS in bottom samples collected from two deep non-CCS canals (MDC 2016a). The exceedances for ammonia were detected in the Barge Turning Basin and the remnant canal at Turtle Point (TPBBSW-7 and TPBBSW-8).

Both the Barge Turning Basin and the remnant canal at Turtle Point are connected to Biscayne Bay. When it was constructed, the Barge Turning Basin was excavated to a depth of approximately 30 ft (9.1 m) and the Turtle Point remnant canal was excavated to a depth of approximately 20 ft (6.1 m). In Biscayne Bay, nearby areas have a depth to the bottom of about 1 to 2 ft (0.3 to 0.6 m) (FPL 2018g) (Figure 3-4).

The ammonia exceedances were detected in samples obtained from the bottom of these excavations, close to the CCS. The low dissolved oxygen, hypersalinity, and tritium concentrations found at these locations are consistent with the interpretation that, close to the CCS, the water quality at the bottom of these excavations may be influenced by groundwater that has been in contact with CCS waters. However, the ammonia concentrations in the bottom samples were consistently higher than ammonia levels in the CCS (FPL 2016g). This implies that if groundwater from the CCS was moving into these excavations, some of the ammonia in the Turtle Point remnant canal and the Barge Turning Basin was also coming from other sources.

Exhibit D

7 LIST OF PREPARERS

Members of the U.S. Nuclear Regulatory Commission's (NRC's) Office of Nuclear Reactor Regulation (NRR) prepared this supplemental environmental impact statement with assistance from other NRC organizations and support from Pacific Northwest National Laboratory. Table 7-1 below identifies each contributor's name, affiliation, and function or expertise.

Table 7-1 List of Preparers

Name	Education/Experience	Function or Expertise
NRC Staff (in alphabetical order)		
Benjamin Beasley	M.S. Nuclear Engineering; B.S. Chemical Engineering; 27 years of combined industry and Government experience including nuclear plant system analysis, risk analysis, and project management, with 13 years of management experience	Management Oversight
William "Butch" Burton	B.S. Nuclear Engineering; 39 years of industry and government experience including submarine and nuclear systems operations and testing	Project Management
Phyllis Clark	M.S. Nuclear Engineering; M.B.A, Business Administration; B.S. Physics; 35 years of industry and Government experience including nuclear power plant and production reactor operations, systems engineering, reactor engineering, fuels engineering, criticality, power plant emergency response	Radiological and Waste Management
Jerry Dozier	M.S. Reliability Engineering; M.B.A. Business Administration; B.S. Mechanical Engineering; 30 years of experience including operations, reliability engineering, technical reviews	Severe Accident Mitigation Alternative (SAMA)
David Drucker	M.S. Engineering Management; B.S. General Engineering; 37 years experience managing projects	Project Management
Kevin Folk	M.S. Environmental Biology; B.A. Geoenvironmental Studies; 29 years of experience in NEPA compliance; geologic, hydrologic, and water quality impacts analysis; utility infrastructure analysis, environmental regulatory compliance; and water supply and wastewater permitting	Groundwater; Greenhouse Gas Emissions and Climate Change
William Ford	M.S. Geology; 44 years of combined industry and Government experience working on groundwater, surface water, and geology projects	Geology; Surface Water
Briana Grange	M.Cert. National Environmental Policy Act; B.S. Conservation Biology; 14 years of	Aquatic Resources; Terrestrial Resources; Special Status

Name	Education/Experience	Function or Expertise
	experience in environmental impact analysis, Section 7 consultations, and Essential Fish Habitat consultations	Species and Habitats; Microbiological Hazards
Robert Hoffman	B.S. Environmental Resource Management; 33 years of experience in NEPA compliance, environmental impact assessment, alternatives identification and development, and energy facility siting	Alternatives; Meteorology and Air Quality
Lois James	M.S. Environmental Engineering; B.S. Nuclear Engineering; 27 years of combined industry and Government experience including power plant inspection, power plant incident response, and project management	Project Management
Nancy Martinez	B.S. Earth and Environmental Science; A.M. Earth and Planetary Science; 8 years of experience in environmental impact analysis	Historic and Cultural Resources; Socioeconomics; Environmental Justice
William Rautzen	M.S. Health Physics; B.S. Health Physics; B.S. Industrial Hygiene; 9 years of experience in environmental impact analysis	Human Health
Jeffrey Rikhoff	M.R.P. Regional Planning, M.S. Economic Development and Appropriate Technology; 38 years of combined industry and Government experience including 31 years of NEPA compliance, socioeconomics and environmental justice impact analyses, cultural resource impact assessments, consultations with American Indian tribes, and comprehensive land-use and development planning studies	Land Use, Noise, and Cumulative Impacts Introduction
Robert Schaaf	B.S. Mechanical Engineering; 31 years of government project management experience, including 15 years of experience in environmental project management	Project Management
Pacific Northwest National Laboratory Staff (in alphabetical order)		
Dave Anderson	M.S. Forest Economics; B.S. Forest Resources. 25 years of experience in environmental and economic modeling	Minority and low-income population mapping
Philip Meyer	Ph.D. Civil Engineering; B.A. Physics; 27 years relevant experience in subsurface hydrology and contaminant transport	Groundwater Resources
Terri Miley	M.S. Mathematics; B.S. Mathematics; 13 years relevant experience in NEPA comment-response and database development	Comment Response Support Lead
Rajiv Prasad	Ph.D. Civil and Environmental Engineering; M. Tech. Civil Engineering; B.S. Civil Engineering; 15 years relevant experience	Surface Water Resources

Name	Education/Experience	Function or Expertise
	in surface water use and quality characterization and assessment	
James Saulsbury	M.S. Planning; B.A. History; 31 years relevant experience in land use and socioeconomic impact assessment	Pacific Northwest National Laboratory Team Lead
Paul Thorne	M.S. Hydrology; B.S. Chemistry/Math; 34 years relevant experience in hydrogeology including analysis of groundwater flow and migration of contaminants in the subsurface	Groundwater Resources